

NCDS User Support Group Working Paper 1 (Revised)

The National Child Development Study (NCDS)

An Introduction to the Origins of the Study

and the

Methods of Data Collection

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BACKGROUND

Britain has a unique tradition in conducting longitudinal birth cohort studies. Three continuing studies have been embarked upon starting in 1946 (*National Survey of Health and Development*), 1958 (*National Child Development Study*) and 1970 (*1970 British Cohort Study*). Each was launched as a perinatal mortality survey of the 16,000 to 18,000 births occurring nationwide in the target week in 1946, 1958 and 1970 respectively. Each survey has subsequently comprised further sweeps at different ages (Figure 1 in Appendix 1). The studies present, both individually and in combination, an unprecedented opportunity to investigate the forces and patterns that have shaped and continue to shape the lives of three overlapping generations of people in this country today.

THE 1958 BRITISH COHORT STUDY - THE NATIONAL CHILD DEVELOPMENT STUDY

The National Child Development Study (NCDS) is a continuing longitudinal study which takes as its subjects all those living in Great Britain who were born between 3 and 9 March 1958.

It has its origins in the Perinatal Mortality Survey (PMS). Sponsored by the National Birthday Trust Fund, this was designed to examine the social and obstetric factors associated with stillbirth and death in early infancy among the 17,000 children born in Great Britain in that one week (Butler and Bonham 1963). It was the second in a series of three such perinatal studies, the others being based on a week's births in 1946 (Douglas 1964) and 1970 (Chamberlain and others, 1975; 1978). Each has formed the basis of a continuing longitudinal study (Wadsworth, 1979; Osborn and others, 1984).

As Figure 2 in Appendix 1 shows, to date there have been five attempts to trace all members of the original study in order to monitor their physical, educational and social development. These were carried out by the National Children's Bureau in 1965 (NCDS1: when they were aged 7), in 1969 (NCDS2: when they were aged 11), in 1974 (NCDS3: when they were aged 16), in 1981 (NCDS4: when they were aged 23). (Davie and others, 1972; Wedge, 1969; Fogelman, 1976; 1983), and in 1991 (when they were aged 33).

In addition, in 1978, contact was made with the schools attended by members of the birth cohort at the time of the second follow-up in 1974 in order to obtain details of public examination entry and performance. Similar details were also sought from sixth-form colleges and FE colleges, etc where these were identified by schools (Steedman, 1983).

For the birth survey information was obtained from the mother and from medical records by the midwife. For the purposes of the first three NCDS surveys, information was obtained from parents (who were interviewed by health visitors), head teachers and class teachers (who completed questionnaires), the schools health service (who carried out medical examinations) and the subjects themselves (who completed tests of ability and, latterly, questionnaires).

In addition the birth cohort was augmented by including immigrants born in the relevant week in the target sample for the first three follow-ups (NCDS1, NCDS2 and NCDS3). The latter group were identified from school registers during tracing (see page nn below for more details).

The 1981 survey differs in that information was obtained from the subject (who was interviewed by a professional survey research interviewer) and from the 1971 and 1981 Censuses (from which variables describing area of residence were taken). Similarly, the recently completed 1991 survey relied on survey research interviewers to collect information from cohort members, and also from husbands, wives, cohabitantes, and children of cohort members. Extensive use was also made of self-completion questionnaires.

It should also be noted that during the collection of exam data in 1978 information was obtained only from the schools and colleges (by post).

Since 1974, no attempt has been made to include new immigrants in the survey.

ORIGINS OF NCDS

In 1958, a study was mounted by the National Birthday Trust Fund of all births in England, Scotland, and Wales in the week 3-9 March 1958. At that time the British perinatal mortality rate, that is the proportion of babies who were either stillborn or died within seven days of birth, was 35 per 1000 births, and the main purpose of the

study was to examine social and obstetric factors associated with such deaths. To this end, the study successfully obtained information on some 98 percent of the total births (about 17,000) registered as occurring during that week. By investigating the factors related to mortality risk and the well-being of the new-born baby, this research demonstrated many facts which are now commonplace and was able to give numerical precision to often observed relationships. It showed, for example, that the risk of a perinatal death was 50 percent higher than average if the mother was having her fifth or subsequent baby, and was 30 percent higher in mothers who smoked heavily during pregnancy compared to non-smokers. The major findings of the perinatal study are summarised in two books. (Butler and Bonham 1963, Butler and Alberman 1969).

Twelve years previously, in 1946, a team led by J W B Douglas had also studied in Britain during the same week, and subsequently has followed up about a third of the sample at regular intervals (Douglas, 1964; Wadsworth, 1979). The success of this study prompted considerable interest in the possibility of following up the 1958 cohort of births.

Strong representations from Dr Pringle, Director of the National Children's Bureau, Professor Butler, an eminent paediatrician, and Professor Wall, then Director of the National Foundation for Educational Research, were made to a Government committee set up to look into primary school education (the Plowden Committee). Following this, in 1964, the Department of Education and Science agreed to commission the National Children's Bureau to collect information on all these children when they were seven. This follow-up study of all the surviving children became known as the National Child Development Study (NCDS), and the first major publication also appeared as an Appendix to the Plowden Committee report (Pringle and others, 1966).

AIMS and OBJECTIVES

At the time the study was instituted the aims were summarised as follows:

Short-term:

- To study the educational, behavioural, emotional, social, and physical development of a large and representative group of British children in order to gather normative data; to investigate the complex interrelationships between the many facets both normal and deviant, of children's development; and to report the incidence of handicaps with the provision currently being made.
- To utilise the uniquely comprehensive perinatal data, already available, in an evaluation of the relationship between conditions during pregnancy and at birth, both medical and social, and the development of children in all aspects at the age of 7 years.

Long-term:

- To explore the constancy and change in the pattern of children's development longitudinally, and to investigate the associated educational, environmental, educational, and physical factors.
- To follow the progress - over a long period - of those children who at birth might be considered at risk in order to evaluate possible latent effects; and also to examine any post-natal factors, environmental, educational, or medical, which may minimise handicap.
- To identify and follow the progress of children who at 7 years of age are already handicapped or showing signs of difficulty: those who because of adverse social or other circumstances might be considered at risk of becoming educationally backward or socially deviant; and those who display exceptional talent or aptitude.
- To evaluate the efficiency of medical and educational provision for handicapped, deviant, and exceptional children.
- To identify groups of children of special interest, including many of those identified above, so that intensive studies may be mounted by expert teams. This would permit much more detailed and comprehensive investigation of the factors involved against a backcloth of the necessarily cruder data gathered in the follow-up of the whole cohort.

More recently, four main objectives have guided our approach to planning for the future of the study:

- To enhance it as a national longitudinal data set for studying changes in health, socio-economic and demographic circumstances, and their inter-relationships, within and between generations.
- To increase the use of the data set, including the collection of new ad hoc specialised data, in the detailed study of particular sub-groups of the cohort.
- To further develop the accessibility of these data to the research community, and also to administrators and policy makers.
- To facilitate and encourage more wide ranging and systematic comparisons between the three British birth cohort studies.

SOURCES, METHODS OF DATA COLLECTION AND SURVEY CONTENT

Details of the sources and methods of data collection are summarised in Table 1, which also indicates the scale of response. Further details of methods of data collection and the content of the various surveys of the NCDS cohort are given below, and in Appendix 2. Copies of questionnaires, other survey instruments and supporting documentation are available from the address given at the end of this description.

PERINATAL MORTALITY SURVEY (1958)

The questionnaire used for the birth survey was designed to be completed by the midwife in attendance at delivery, with reference to all available records and after an interview with the mother. Information recorded included: social and family background, details of past obstetric history, antenatal care and abnormalities during pregnancy, length and abnormalities of labour, analgesia and anaesthesia as well as sex, weight, progress, management and outcome of the infant. This information was supplemented, in the case of stillbirths or neonatal deaths, with a clinical summary by the midwife and medical attendants. (Butler and Bonham, 1963; Butler and Alberman, 1969).

Guidance was given by accompanying instruction sheets, supplemented by personal briefing meetings given by the survey team throughout the length and breadth of the country. Furthermore, with the help of the (then) Ministry of Health, Local Health Authorities, and Regional Hospital Boards, with their Advisory Committees in Obstetrics, Paediatrics and Pathology, details of the administration were circulated far and wide. Facilities were arranged in each region for the survey director to meet personally those providing the maternity and newborn services. In this way maximum co-operation was attained.

Table 1 Sources of information and methods of data collection

Survey Instrument (other source)	Cases	Method of collection
Perinatal Mortality Survey, 1958		
Questionnaire	17,414	Completed by midwife who interviewed mother and consulted medical records
NCDS First Follow-up (NCDS1), 1965	15,414*	
Parental Interview	14,746	Administered by health visitor
Medical Questionnaire	14,398	Completed by LA Medical Officer who carried out a medical examination & consulted records
Educational Questionnaire	15,414	Completed by head teacher & class teacher
Test Booklet	Varies	Completed by cohort member in school
NCDS Second Follow-up (NCDS2), 1969	15,303*	
Parental Interview	13,879	Administered by health visitor
Medical Questionnaire	13,207	Completed by LA Medical Officer who carried out a medical examination & consulted records
Educational Questionnaire	14,205	Completed by head teacher and class teacher
Test Booklet/Essay	13,865	Completed by cohort member in school
NCDS Third Follow-up (NCDS3), 1974	14,761*	
Parental Interview	11,691	Administered by health visitor
Medical Questionnaire	11,675	Completed by LA Medical Officer who carried out a medical examination & consulted records
Educational Questionnaire	12,762	Completed by head teacher and class teacher
Test Booklet	Varies	Completed by cohort member in school
Individual Questionnaire	12,098	Completed by cohort member in school
Survey of Public Examinations (EXAMS), 1978		
Postal questionnaire	14,370	Completed by school attended at 16 and FE colleges when identified
NCDS Fourth Follow-up (NCDS4), 1981	12,537*	
Cohort Member Interview	12,537	Administered by market research interviewer
(Census 1971)	11,767	CACI International
(Census 1981)	12,364	CACI & ESRC Data Archive
NCDS Fifth Follow-up (NCDS5), 1991	11,407*	
Cohort Member 'Your Life since 1974'	11,407	Event history completed by cohort member
Cohort Member 'What Do You Think?'	11,407	Attitude questionnaire completed by cohort member
Cohort Member Interview	11,407	Administered by market research interviewer
Partner 'Your Life'	7,500	Event history completed by spouse/Cohabitee
Mother Interview (All children)	2,500	Administered by market research interviewer
Child Interview (children 4 yrs and older)	4,000	Child assessments administered by interviewer
Home Environment Observations (children <4 yrs)	1,000	Completed by market research interviewer
Mother 'Your Child' (All children)	5,000	Completed by mother/mother-figure

* Number with any data for this survey.

Without the help of the complex administrative network of the National Health Service the project would never have been possible. Questionnaires were distributed in advance to maternity departments by Regional Hospital Boards and the Boards of Governors of Teaching Hospitals and to domiciliary midwives by Medical Officers of Health. This enabled them to be filled in as soon as possible after delivery, or after death in the case of neonatal deaths, by the midwives concerned. Sets of questionnaires were also distributed to departments (such as premature baby units) where babies were likely to be admitted or might die after birth. The completed forms were checked by matrons, midwifery superintendents, or the supervisors of midwives and, finally, all completed forms were returned to the Medical Officer of Health for the County or County Borough area in which

the births or perinatal deaths had taken place. Here the returns could be checked against the official notifications of births and deaths. Missing questionnaires were sought and any deficiencies rectified when the data was incomplete.

NATIONAL CHILD DEVELOPMENT STUDY - THE FIRST THREE FOLLOW-UPS: NCDS1 (1965), NCDS2 (1969) & NCDS3 (1974)

At each of the first three follow-ups, information was been obtained from four main sources: the children themselves, the parents, Local Authority Medical Officers, and schools.

After piloting in a number of local authorities, the interview schedules and questionnaires were despatched to local health authorities and to local education authorities, who organised their distribution to medical officers and health visitors who were to carry out the medical examinations and parental interviews, and to schools respectively. They also arranged for the collection of completed schedules and their return to the Bureau.

There were two significant departures from this general method for the 16-year follow-up. First, there were the independent schools, with whom we corresponded directly. Second, there was the impact of local government reorganisation which came about during the period when local authorities were dealing with out material. Many authorities were still able to take responsibility for distributing and returning the forms but in other cases this was taken over by the research team. (Davie and others, 1972; Wedge, 1969; Fogelman, 1976, 1983; Fogelman and Wedge, 1981).

A more detailed account of the data collected is given below, but in summary:

- **Parental Interview** - at each age the parents (in fact most commonly the mother alone) were interviewed in the home by an officer of the local authority, usually a Local Authority Health Visitor, using a structured interview schedule.
- **Medical Examination** - at each age, each child received a full medical examination from a Local Authority Medical Officer, who also carried out some special tests and completed a medical schedule, additionally using some information available from medical records to help in compiling a medical history.
- **Schools Questionnaire** - at each age, the schools (usually the headteacher and class teacher(s)) completed a questionnaire providing information on the school and on the study child.
- **Subject** - at age seven, the child's direct contribution to the study was limited to the completion of tests administered in school, but at age eleven and sixteen each child also completed a questionnaire.

Parental Interview

There have been variations from age to age, but in general the following areas have been covered: Father's and mother's occupation, length of parents' education, smoking habits, aspirations and expectations for child's future education and occupation, family relationships, parent-school contacts, sources of income and indices of poverty (including at sixteen only, details of household income), housing circumstances, child's general health and information on accidents, hospital admissions and visits to the doctor, and details of medical history relating to vision, hearing, speech therapy, convulsions, asthma, migraine, enuresis, psychiatric problems, dental care and pubertal development.

At ages eleven and sixteen parents also answered questions which combine to give an index of behaviour in the home (Rutter and others, 1970). Individual items of this scale also provide useful information, for example concerning truancy.

Medical Examination

The medical officer obtained information on aspects of medical history, similar to that obtained from parents. He or she recorded the results of test of near and distant vision, hearing, speech, and motor co-ordination and measured the child's height and weight. In the course of a systematic examination, results were recorded of any findings relating to skin conditions, hernias, respiratory tract infections, and any defects in the

cardiovascular system, the alimentary tract, the urogenital system, bones and joints, and the neuromuscular system. At eleven and sixteen, the medical officers assessed the child's pubertal development.

Schools Questionnaire

For obvious reasons, there has been considerable variation in detail according to the age of the child, but, in general, the areas covered include: type and size of school, social composition and academic record of the school, provision for sex education and career advice, parent-school contacts, disciplinary methods used, size and nature of child's class, ability ratings, likely examination entries, details of any special provisions for the child, attendance record, prediction of future educational and occupational progress, and ratings of parental interest.

At each age teachers completed a standardised instrument to provide a description of the child's behaviour in school. At seven and eleven, this was the Bristol Social Adjustment Guide (Stott 1963), and at sixteen the school version of the Rutter behaviour scale (Rutter 1967) was used.

Tests of Attainment, etc

At Seven:

- **Southgate Reading Test** (Southgate 1962) - a test of word recognition and comprehension particularly suited to identifying backward readers.
- **Copying Designs Test** - to obtain some assessment of the child's perceptuo-motor ability.
- **Drawing-A-Man Test** (Goodenough 1926) - as an indication of the child's general mental and perceptual ability.
- **Problem Arithmetic Test** (Pringle and others, 1966).

At Eleven:

- **General Ability Test** (Douglas 1964) - containing verbal and non-verbal items.
- **Reading Comprehension Test** - constructed by the National Foundation for Educational Research in England and Wales (NFER) specifically for use in this study.
- **Arithmetic/Mathematics Test** - again constructed by NFER especially for use in this study.

At Sixteen:

- **Reading Comprehension Test** - the same test as used at 11
- **Mathematics Test** - devised at the University of Manchester and originally intended for use in the NFER's study of comprehensive schools.

Unreferenced tests are unpublished, but copies are available on request.

Study Child's Questionnaire

At eleven this was relatively brief, and contained questions on leisure activities and attitudes to school. Each child was also asked to write a short composition on the life he imagined he would be leading at the age of 25.

At age sixteen a more substantial questionnaire included questions on: attitudes to school and to methods of punishment in school, future educational and occupational expectations and aspirations, reasons for leaving school and choosing a job, school absences, self-ratings in school subjects, spare-time work, income and pocket money, intentions about marriage and having children, sex education and preparation for parenthood, leisure activities, family relationships, smoking and drinking and handedness.

COLLECTION OF DETAILS OF EXAMINATION PERFORMANCE, EXAMS (1978)

Details of examination performance by members of the NCDS cohort were obtained in 1978 by writing to schools which study members were known to attend at the time of the 1974 follow-up (NCDS3). Schools were

asked to provide details of all CSE, GCE and (in Scotland) SCE examinations entered up to 1978. They were also asked to indicate when an individual was known to have gone to study elsewhere (eg. another school, Sixth-form College, FE college, etc) and might have taken more such examinations. In such cases the other institutions were also contacted and the relevant results obtained. (Steedman, 1983).

The information collected is available in two forms:

1. **Raw Exam Result Data File** - this contains the exam data as originally coded by NCB. This is in the form in which it was originally supplied by schools, etc. that is a string of information relating to each individual subject entry, identifying the type and level of exam, the board, mode, subject, grade awarded and date and place of examination.
2. **Exam Summary Measures File** - this contains a number of derived variables created by the NCB for use in its own work. These include many summary measures which are likely to be most commonly used such as total number of examination entries, number of 'O' level 'passes', best result in specific subjects and so on. In creating the summary measures special efforts were made to cope with particular problems such as time and place constraints, grade equivalence, retakes and double entries. As a result a number of alternative summary measures of examination entry and performance are provided using the following 'standard' set of time and place constraints:
 - **BY 1974/76, Any place** - includes examinations taken by what can be considered the 'conventional' time (ie. by June 1974 for 'O' levels, CSEs and SCE 'O' grades; and by June 1976 for 'A' levels, SCE 'H' grades and Certificate of Sixth Year Studies - but excluding any retakes in November or December of those years) irrespective of where they were taken.
 - **BY 1974/76, NCDS3 school** - includes only examinations taken in the school attended at the time of the NCDS3 follow-up and within the 'conventional' time.
 - **ANY TIME, Any place** - includes all examinations taken up to when the data were collected in 1978 irrespective of where they were taken.
 - **ANY TIME, NCDS3 school** - includes only examinations taken in the school attended at the time of the NCDS3 follow-up irrespective of when they were taken.

In some instances additional summary measures are provided for 'A' levels or SCE 'H' grades:

- **ANY TIME, Any school** - includes examinations taken in any school attended irrespective of when they were taken.
- **ANY TIME, FE college** - includes examinations taken in any FE college attended irrespective of when they were taken.
- **ANY TIME, Sixth form college** - includes examinations taken in any Sixth form college attended irrespective of when they were taken.

THE NATIONAL CHILD DEVELOPMENT STUDY: THE FOURTH FOLLOW-UP, NCDS4 (1981)

As noted above, the 1981 survey differs from the three earlier NCDS follow-ups in that information was obtained from the subject (who was interviewed by a professional survey research interviewer) and from the 1971 and 1981 Censuses (from which variables describing area of residence were taken).

It is perhaps important to note that this fourth follow-up was preceded by a feasibility study designed to explore the practical problems associated with an adult follow-up; assess the likely level of response; and, in the light of this, and discussions with potential sponsors, prepare proposals for future surveys of the NCDS cohort. This work was sponsored by the Department of the Environment, who approached the National Children's Bureau in 1977, towards the end of the work on the third follow-up in order to examine the possibility of the Study continuing with funding from a number of government departments.

The feasibility study was completed at the end of 1978. Amongst other things it showed, with evidence from a specially commissioned survey, in which an attempt was made to trace, contact and interview a five percent random sample of those involved in one or more NCDS follow-up, that it was possible to find the greater

majority of those who had been involved with NCDS over the years, and that most were happy to continue to provide information on a wide variety of topics. Discussions with government departments revealed that there was a great deal of interest in a fourth and even later follow-ups.

However, it was not until the spring of 1980 that agreement on the funding of the fourth follow-up was reached.

The 1981 Interview Survey

The target sample for the 1981 survey also differed. It consisted of all those who had participated in at least one of the earlier NCDS follow-ups, excluding those known to have emigrated or to have died. There was no attempt to include new immigrants, as there had been with the first three follow-ups.

Following initial tracing by the Bureau, details of names and addresses were passed to NOP Market Research Limited and Social and Community Planning Research who carried further tracing and subsequent interviews. The survey was carried out between August 1981 and March 1982. Each interview took approximately 90 minutes.

Completed questionnaires were visually checked by NOP and SCPR and the data then transferred by them to computer. Following preliminary computer editing by NOP and SCPR more detailed checks were carried out by the Bureau. The majority of open-ended questions were coded by SCPR using coding frames developed by the Bureau research team. The remaining open-ended questions, including all those relating to health and health-related behaviour, were coded by the Bureau.

The cohort members were 23 years old at the time of the 1981 interview, and had reached a stage in their life cycle marked by major transitions - for example, from school or full-time further and higher education to work, from dependent status in their families of origin to independent status as members or heads of new households, from single status to partnership with marriage partners or cohabitantes, and from childlessness to parenthood. During the interview survey detailed information was sought from these young adults about:

- **Employment, unemployment and periods of out of the labour force** (including details of economic status for each month since March 1974; dates and durations; occupation; industry; earnings; training; promotion, hours; job satisfaction; job choice; job behaviour; participation in government special schemes etc).
- **Apprenticeship and training** (including details of dates and durations; trades and skills; courses and qualifications; and reasons for non-completion etc).
- **Post-school education** (including details of dates and duration; courses; subjects; qualifications; failed courses; courses not leading to qualifications; planned courses; finance; literacy and numeracy problems etc).
- **Marriage, cohabitation and children** (including details of dates of marriage(s) and cohabitation(s); age and prior status of partner(s); abortion and miscarriage; dates of birth and birthweight of children and experience of lone parenthood, etc).
- **Housing and household** (including details of household composition; type and tenure of housing; amenities; housing costs; home ownership aspiration; leaving home; homelessness, etc).
- **Family income, savings and investment** (including details of state benefits; other payments from outside the household; savings investments and inheritances).
- **Respondent reported health state and health related behaviour** (including details of smoking, drinking, handicap, migraine, epilepsy, asthma and wheezy bronchitis, other conditions requiring regular medical supervision, accidents, hospital admittances and emotional problems).
- **Voluntary activity and leisure, etc** (including details of the nature and frequency of activities; religion; voting behaviour; trade union membership; and newspaper readership).
- **Malaise Inventory** (a 24-item inventory completed by the respondents at the completion of the interview. This is a measure indicating a tendency towards non-clinical depression developed by the Institute of Psychiatry from the Cornell Medical Index (Rutter and others, 1970)).

Area Data Based on the 1971 and 1981 Census

Following the completion of the 1981 survey additional data were obtained which summarise the characteristics of the area in which each cohort member was living, both at the time of the survey and at the time of the 1974 survey. These data, based on the Small Area Statistics (SAS) of both the 1971 and 1981 Census were provided by CACI International (1971 and 1981 Census) and the ESRC Data Archive (1981 Census) and comprise the following:

- **Area data based on the 1971 Census** - this provides for each respondent, both at 16 (1974 address) and 23 (1981 address), the following:
 - **Location codes** - postcode, OPCS enumeration district, OPCS Census district, ward, constituency, pre-1974 district, post-1974 district, pre-1974 county, post-1974 county, standard region.
 - **ACORN type** - a classification of OPCS enumeration districts into 36 residential neighbourhood types. The classification is based on 40 census variable covering demographic structure, household composition, housing, socio-economic structure and residents' employment characteristics. These ACORN neighbourhood types can be classified into 11 ACORN groups. (Webber and Craig, 1978, 1979; CACI no date).
 - **Constituency type** - a classification of the 623 constituencies using the same 40 census variables which are the basis of ACORN. The classification is, however, different. Each constituency is allocated to one of 30 groups which can in turn be combined into 6 larger groupings. (Webber, 1978b).
 - **Census ratios** - these 19 ratios of Census counts, taken from the Small Area Statistics, provide summary area data descriptive of different aspects of the socio-economic structure, employment characteristics and housing environment for each respondent. They are recorded for both 1971 Census enumeration district (the smallest unit for which census statistics are available with an average population of about 460); and pre-1974 local authority.
- **Area data based on the 1981 Census** - this provides for each respondent, and for the 1981 address only:
 - **Location codes** - postcode, ward, district, county, standard region.
 - **ACORN type at ward level** - a classification of residential neighbourhoods into 38 types based on 41 variables from the 1981 Census encompassing demographic, housing and employment characteristics. The 38 neighbourhood types can be aggregated to give 11 neighbourhood groups.
 - **Census counts** - 331 counts taken from the Census Small Area Statistics relating to demographic, socio-economic, employment and housing characteristics which permit the derivation of summary measures describing different aspects of the area in which the respondent lives.

THE NATIONAL CHILD DEVELOPMENT STUDY: THE FIFTH FOLLOW-UP, NCDS5 (1991)

The fifth NCDS follow-up, carried out in 1991, was designed to obtain information from the cohort member; any husband, wife, or cohabitee; from the natural or adopted children of 1 in 3 cohort families; and from the mother of these children. (Ferri, 1993). The mother and child questionnaires are based on instruments used for the US National Longitudinal Survey of Youth, and their inclusion in NCDS5 is designed to permit comparisons to be made. (Baker and Mott, 1988).

NCDS data is not analysed exclusively by SSRU. The data from the study is made available to other researchers in the UK and elsewhere through data archives. NCDS5 or this reason, NCDS5 was funded and conducted as a resource for the research community. Four groups were involved in the design, preparation and conduct of the work:

- **SSRU NCDS5 Research Team** - who were responsible for the overall design and conduct, and analysis of the survey.

- **Scientific Advisors from the research community** - who gave advice on the design and content and undertake some analysis of the data. (SEE APPENDIX 3).
- **Funders** - a consortium headed by the Economic and Social Research Council, and including a number of government departments and the US National Institute of Child Health and Development.
- **Survey Contractors** - a consortium of three survey companies (Social and Community Planning Research, NOP Market Research, and Research Surveys of Great Britain) who provided 600 interviewers and other data collection and preparation resources.

Tracing and Pilot Surveys

Preparation for the survey began in 1985 with the search for funders, and included:

- **Tracing of cohort members.** Following trials designed to identify the most effective way to trace members of the NCDS cohort, SSRU carried out a special tracing exercise. Although efforts have been made to maintain contact with cohort members, the gap between surveys inevitably means that a number are temporarily lost. In 1988 the whereabouts of about 50 percent of the target sample were known. As a result of a special tracing exercise some 75 percent were "found" before the NCDS5 survey began. Subsequently, these efforts were supplemented by interviewers working on the survey who carried out "detective work". More details are provided below.
- **Discussions with funders and advisors** on the design and conduct of the survey.
- **Pilot Surveys** in which the SSRU developed the design, content, and administration of the NCS5 survey. There were 6 separate rounds of piloting involving 11 different pilot surveys. The early pilot surveys were concerned with only one or two topic areas and based on small samples of non-cohort respondents of approximately the same age. Later surveys piloted one or more complete questionnaires on somewhat larger samples, and in January 1990, and again in November of that same year "dress rehearsal" surveys were conducted. The latter were designed to pilot all survey procedures and instruments using samples drawn from the NCDS cohort.

The NCDS5 Survey

The NCDS5 survey was carried during 1991 and involved some 600 interviewers trained in 43 separate briefings: a single briefing of those who were to carry out the briefings; 3 briefings of regional field managers; and 39 interviewer briefings held in major cities throughout the country. There were 2 types of interviewer briefing:

- **One day briefings:** Attended by 400 interviewers working only on the Cohort Member and Partner Surveys.
- **Three day briefings:** Attended by 200 interviewers working on both the Cohort Member and 'Partner Surveys, and on the Mother and Child Survey.

An outline of survey content is given below. (SEE ALSO APPENDIX 2).

COHORT MEMBER SURVEY:

- **"Your Life Since 1974"** - Event History Questionnaire: A self-completion questionnaire designed to recover event/activity history data relating to: marriage/ cohabitation; children; jobs; periods not in a job; and housing.
- **"What Do You Think"** - Attitude Self-completion: A self-completion questionnaire designed to obtain attitude data on marriage (including the Locke-Wallace "Quality of Relationship" battery; women's roles; children and the family; social support; social and political values (left/right, traditional/modern); environmentalism; racism; sexism; political trust/cynicism; orientation towards work; value of work; job control; and perceived skills

- **Interview Questionnaire:** An interview designed to recover data detailed information about: current/last and previous jobs; spouse partner's current job and earnings; unemployment; education and training courses; qualifications held; literacy and numeracy problems; marriages and cohabitations; pregnancies and children; housing circumstances; aspects of housing history (including rent/mortgage arrears, and homelessness); income from state benefits and other sources, savings, investments, inheritance, and debt; health and health history (including asthma and other specific conditions, disability, accidents and assaults, hospital admissions, etc); health behaviour (including smoking, drinking, drink driving); and citizenship (including voting behaviour, religiosity, and ethnicity).
- **Malaise Inventory:** A self-completion questionnaire containing 24 item Malaise Inventory.
- **Cohort Member Height and Weight Measurement:** Using portable measuring equipment.

PARTNER SURVEY

- **"Your Life..." - Event History Questionnaire:** A self-completion questionnaire designed to recover event/activity history data relating to: marriage/ cohabitation; children; jobs; periods not in a job; and housing.

MOTHER AND CHILD SURVEY (a sample of one in three cohort families)

- **Mother Interview Questionnaire:** An interview designed to recover data from the mother-figure relating to: family life; and, for each child, details of: pregnancy and birth; health history; separations from mother; experience of being "in care"; pre-school experience; schooling history; and experience of day care.
- **Mother "Your Child" Self-completion Questionnaire:** A self-completion questionnaire completed by the mother-figure for each child and consisting of 4 age specific rating scales, namely: Motor and Social Development; Behaviour Problems Index; Temperament/"How My Child Usually Acts"; HOME-SF (Home Observation for; Measurement of the Environment - Short Form)
- **Child Interview:** Nine age-specific child assessments administered by interviewers, namely: Peabody Picture Vocabulary Test - Revised (PPVT-R); McCarthy Scale of Child Abilities: Verbal Memory Subscale; Peabody Individual Achievement Test (PIAT): Maths, Reading Recognition, and Reading Comprehension Subscales; Weschler Intelligence Scale for Children - Revised: Digit Span Subscale ("Memory for Digits"); Perceived Competence for Children/Self-Perception Profile ("What I am Like"); Interviewer evaluation of Testing Conditions/ Temperament; Interviewer observation of home environment/Home Observation for Measurement of the Environment - Short Form (HOME-SF).
- **Child Height and Weight Measurement:** Using portable measuring equipment.

TRACING AND MAINTAINING CONTACT WITH MEMBERS OF THE NCDS BIRTH COHORT

A prior requirement for any successful longitudinal study is the ability to find the study subjects when data is to be collected. Table 2 summarises the sources of information used to trace NCDS subjects, comparing NCDS1-3 and NCDS4, and NCDS5.

Table 2: Tracing for NCDS1-5

Source of address	NCDS1-3	NCDS4	NCDS5
Schools	yes	no	no
Local health authorities	yes	no	no
Social services departments	yes	no	no
Last known addresses	yes	yes	yes
Media appeals	yes	yes	yes
National Health Service Central Register	yes	yes	yes
Family Practitioner Committees	yes	yes	yes
Earlier addresses (ie. before last known)	no	yes	yes
Local authority housing departments	no	yes	yes
Interviewer detective work	no	yes	yes
Ministry of Defence (Armed Forces)	no	yes	yes
National Insurance Records	no	yes	yes
Driver and Vehicle Licencing Records	no	no	yes

Tracing for NCDS1-3

Until relatively recently no attempt was made to maintain ongoing contact with NCDS cohort members between surveys - they were traced anew for each follow-up. The response rates at NCDS1-3 reveal that this approach was successful. It was based on contacting all schools in Great Britain to establish which pupils were born in the survey week. This had the advantage of identifying immigrants born for inclusion in the target sample.

Where cohort members could not be traced through schools reference was made to local and national health records, and last known addresses? Appeals were also made through local and national newspapers.

Tracing for NCDS4

For the NCDS4 survey in 1981 tracing could not be carried out through schools. The variety of other methods used for the 1981 survey are listed in Table 2 above. Postal tracing was substantially completed before the survey began. The other methods were used throughout the survey period in order to trace those who had not responded to postal contact or could not be found by the interviewers.

National Insurance records and the National Health Service Central Register - the last two methods described - were contacted once other methods had been exhausted and therefore relatively late in the survey period.

Maintaining contact - Birthday Cards

Following the 1981 survey efforts have been made to maintain ongoing contact with members of the NCDS cohort. These are based on the annual mailing of a birthday card accompanied by a reply slip and a reply-paid (FREEPOST) envelope. The reply slip includes a number of questions designed to elicit basic demographic and economic information (see Table 3).

Tracing for NCDS5

Thanks to the annual mailing of birthday cards tracing for NCDS5 began with a confirmed address for some 47 percent of this sample (funds did not enable further tracing where cards were returned endorsed "gone away", etc, or where there is no response of any kind), and following successful trials in 1988/89, a small team of 2 permanent and 3-4 temporary staff was employed to try to find the untraced. Their efforts were based on an attempt to identify members of the sample on the National Health Service Central Register (NHSCR) and a subsequent approach to the appropriate Family Health Service Authority (FHSA, formerly Family Practitioner Committee or FPC) to arrange the mailing of special tracing letters. Work to trace those not found by this means relied on writing or telephoning to last known addresses, earlier addresses, or local authority housing departments, and consulting telephone directories.

Table 3: Information requested on NCDS birthday cards

<i>Year</i>	<i>Information requested</i>
All	Correction or change of name or address; if necessary, contact address(es) of relatives or friends willing to forward mail
1982	Marital status; economic status
1983	Economic status; if changed employer since September 1981; reason for any change of employer; date of birth of any children born to subject since September 1981
1984	Consumer durables, etc (TV, video, home computer, car or van) in household; weight; experience of migraine; date of birth of any children born to subject since February 1983
1985	Marital status; economic status; number of children; housing tenure
1986	As 1985
1987	As 1985
1988	As 1985
1989	As 1985
1990	As 1985
1991	As 1985
1992	Reactions to NCDS5 survey
1993	As 1985
1994	As 1985
1995	As 1985

As a result of all these efforts some 75% of the target sample were traced before the survey began.

Tracing continued during the main fieldwork when it was possible to supplement the efforts of the SSRU tracing team with "detective" work by interviewers. Use was also been made of the DSS Letter Forwarding Service, which is based on identifying individuals from National Insurance records, and a similar arrangement agreed with the Driver and Vehicle Licencing Agency. Following experience with NCDS4, use was also made of appeals through radio, and the local and national press.

RESPONSE TO THE NCDS FOLLOW-UPS

Details of response to the birth survey and later NCDS surveys is given in Table 4. It can be seen that the overall response has remained satisfactorily high, as a percentage of those known to be alive and living in this country, though declining from 98 percent in 1958 to 76 percent in 1981. The explanation for this seems reside in an increasing number of refusals and, especially in the first post-school survey in 1981, difficulties in tracing members of the birth cohort. Generally satisfactory as the response figures are, any element of non-response could introduce problems of bias. One advantage of longitudinal studies is that because those missed at one stage will have data from earlier stages, it is possible to check for response bias by comparing the attained sample at any survey to the target sample.

Table 4 Response to the NCDS follow-ups

Cohort age (years)	Target sample* (n=100%)	Some data (%)	Refused (%)	Others without data
Birth	17,733	98	-	2
7	16,883	91	1	8
11	16,835	91	5	4
16	16,915	87	7	6
20	16,906	85	-	15
23	16,457	76	7	17
33	15,628	70	10	20

* Number from previous stage plus known immigrants, less known deaths and emigrations.

When such analyses have been carried out for NCDS the results have been generally reassuring. Up to the age of 16 differences have generally been found to be small or non-existent in relation to indices such as social class, region, attainment test scores and measures of physical development. However, there is evidence of slight under-representation of those who might broadly be termed 'disadvantage' in relation to family, housing and financial circumstances. (Fogelman, 1976, 1983).

Response patterns for the 1981 survey show a continuation of the same trend with those interviewed being slightly more often from middle class backgrounds and to differ in other characteristics which could have been predicted from that alone; their school attainment was higher; they came from smaller families; and they grew up in slightly better housing circumstances. However, although such biases are statistically significant, they are small.

A more serious bias in response to the 1981 survey has been found in relation to immigrant status and ethnicity. Young people of Caribbean origin are under-represented by about one third, those from the Indian subcontinent by about one quarter, and those from Ireland by about one tenth. The combination of small numbers and the probability of significant bias within these groups for the 1981 survey mean that analyses of data from the follow-up at age 23 designed to investigate specifically the experiences of ethnic minorities are unlikely to be of great value, even allowing for the fact that knowledge of under-representation may permit the estimation of weights for the adjustment of results. (Fogelman and Wedge, 1981).

Analysis of response to NCDS5 reveals a similar pattern to that reported for NCDS4.

This is, of course, only part of the story - it is based on a simple comparison of those with some data and those without any data. Given the methods of data collection, it is quite possible for an individual to have incomplete data at any one stage. In complex analyses drawing upon data from more than one age and several sources the effect is multiplicative, and can lead to a dramatic reduction in the sample available for analysis with complete information on all relevant variables. It is, therefore, vital to investigate response patterns further in the context of each set of analyses in order to check whether any bias is appearing.

Table 5 shows the numbers for whom the survey instruments are available.

Table 5 Numbers of survey instruments available for NCDS follow-ups

Cohort age (years)	At least one survey instrument	Survey instrument/other data:				
		Parental	Educational	Medical	Individual	Area data
Birth	17,414	17,414	-	-	-	-
7	15,414	14,746	15,414	14,398	-	-
11	15,303	13,879	14,205	13,207	13,865	-
16	14,761	11,691	12,762	11,675	12,098	-
20	14,370	-	14,370	-	-	-
23	12,537	-	-	-	12,537	11,767
						12,364*

* The upper figure relates to data based on the 1971 Census and the lower to that from the 1981 Census.

SUB-STUDIES OF THE NCDS INVOLVING ADDITIONAL DATA COLLECTION

The overall strategy adopted for the National Child Development Study since 1965 has involved surveys of the entire cohort, as described above, and in the intervening years ad hoc studies of groups which are of especial interest. These studies have required the collection of additional information for a number of subsamples identified from information gathered during the major surveys. An outline of these studies is given in Table 6 below. They include studies of children in care (Mapstone, 1969), adoptive children (Seglow and others, 1972), gifted children (Hitchfield, 1974), the children of one-parent families (Ferri and Robinson, 1976), handicapped school leavers (Walker, 1982), those suffering from epilepsy (Ross and others, 1980).

Only on two occasions have samples been selected randomly without regard to their known characteristics. The first was for the feasibility study mounted to explore the problems of carrying out adult follow-ups (Shepherd, 1980), and the second was for the purposes of a survey of smoking behaviour (Fogelman, 1980a).

Table 6 NCDS sub-studies based on the collection of additional information

Date	Subgroup studied	Source of information	Method of collection	Sample size	Information collected
1965	Children	Local Authority Children's Departments & Voluntary Children's Societies	Postal survey	314	Details of care career in care
1967	Adopted children	Parents	Interview	145	Views on child's development and the adoption process
1969	Gifted	Parents	Interview	238	Child's schooling, interests & hobbies, friends, personal qualities, genial behaviour. Expectations and hopes about education & employment. Parent's education
			Interview	238	School, teachers, interests, self, friends
			Tests	238	Intelligence, proportional logic, knowledge of science, geography, history & the arts, social reasoning, divergent thinking, artistic ability & attitudes to home and school.
1971	Adopted	Parents	Postal survey	104	Views on adoption process
1973	Children of lone parents	Parents	Interviews	168	Problems and response of adult & child(ren) to loss of parent
1976	Handicapped school leavers	Parents	Interviews	389	Social & economic circumstances, aspirations for child, views on usefulness of careers services, education & training advice
			Interviews	393	Education & work history, views on usefulness of careers services, education & training advice
		Employers	Postal survey	67	Employment of the handicapped
		Schools	Postal survey	53	Parental contact, careers teaching, preparation for adult world, further

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						education and training
1978	Feasibility Study (for NCDS4)	Subjects - random sample	Interview	559		Education, training, labour market history, marriage & family
1978	Smoking survey	Subjects - random sample	Self-completion	709		Smoking behaviour, development of habit, attitudes & beliefs, aspects of health
1979	Epilepsy	Consultants, GPs, etc	Postal survey	346		Diagnosis & treatment
1982	Deaths	National Service Register	Health Central	Extract from records	600	Details of deaths, including date cause
1985	Successful disadvantaged	Subjects	Interview	90		Family, social & economic circumstances and impact of former circumstances
1986	Epilepsy	Consultants, GPs	Postal survey	na		Diagnosis & treatment
		Subjects	Interview	na		Impact of epilepsy on school, work, etc
1993	Respiratory Health, etc	Subjects	Interview	c1,500		Health and other background information
			Tests	c1,500		Lung function, allergy, cotinine
1994	Crohn's Disease	Subjects	Postal survey	31		Confirmation of diagnosis
		Consultants	Postal Survey	26		Confirmation of reported diagnosis
1995	Basic Skills Problems	Subjects - random sample of those living in England and Wales	Assessments	c1,600		Assessments of reading, writing and number work
			Interview	c1,600		Work history, education and training, marriage, family, housing and self-reported problems with basic skills
			Self-completion	c1,600		Health, attitudes, work skills

THE FUNDING OF THE NATIONAL CHILD DEVELOPMENT STUDY

The National Child Development Study has never been funded on a continuing, long-term basis. A search for sponsors has preceded all four major follow-ups, the collection of examination results, and the majority of the sub-studies identified above.

Given the scale of the major surveys in 1965, 1969, 1974, 1978 and 1981 it is perhaps not surprising that funds have come mainly from public sources although private trusts have funded some of the sub-studies. Further details of sponsors are given in Table 6 below. Needless to say the lack of secure long-term financial support has made it difficult to carry out the kind of forward planning which would most benefit the study.

Table 7 Sources of funds for PMS, NCDS follow-ups and sub-studies

Year	Survey	Source(s) of funding
Major surveys:		
1958	Perinatal Mortality Survey	National Birthday Trust Fund
1965	First follow-up (NCDS1)	Department of Education & Science
1969	Second follow-up (NCDS2)	Social Science Research Council
1974	Third follow-up (NCDS3)	Department of Education & Science & Department of Health & Social Security
1978	Collection of exam results (Exams)	Department of Education & Science
1981	Fourth follow-up (NCDS4)	Department of Health & Social Security, Department of Employment
	Manpower Services Commission	Department of the Environment
1991	Fifth follow-up (NCDS5)	Economic and Social Research Council Department of Health Department of Social Security Employment Department Department of Education and Science Department of the Environment Transport and Road Research Laboratory Health and Safety Executive US National Institute of Child Health and Development
Sub-studies:		
1965	Children in care	Nuffield Foundation
1967	Adopted children	Home Office
1969	Gifted children	Leverhulme Trust
1971	Adopted	Home Office
1973	Children of lone parents	Department of Health & Social Security
1976	Handicapped school leavers	Department of Education & Science
1978	Feasibility Study for NCDS4	Department of the Environment
1978	Smoking survey	Tobacco Research Council
1979	Epilepsy	British Epilepsy Association & Abbott, Bayer, ICI & Parke-Davis
1982	Deaths	Student MSc degree project
1985	Successful disadvantaged	Leverhulme Trust
1986	Epilepsy	Action Research for the Crippled Child
1993	Respiratory Health	Wellcome Trust
1994	Crohn's Disease	British Digestive Foundation Merck Inc
1995	Basic Skills Problems	Adult Literacy and Basic Skills Unit
Birthday Card Exercise:		
1982, 1983, 1984		Included in NCDS4 funding
1985, 1986, 1987, 1988		Department of Health & Social Security
1989, 1990, 1991, 1992, 1993		Included in NCDS5 funding
1994, 1995		Economic and Social Research Council

NCDS DATA ON THE ESRC DATA ARCHIVE

The data from the NCDS follow-ups (including the raw examination results) are held by the **Economic and Social Research Council Data Archive** at the University of Essex, and are available to researchers who wish to specify their own data sets. (Fogelman, 1985b).

Access to the data is open to anyone interested, although intending users are asked to commit themselves to ensuring that confidentiality is observed and to inform the NCDS User Support Group about their proposed use of the data and any resulting publications, etc. Additionally of course it is important that they have access to computing facilities which can handle a data set of this size.

The Data Archive also hold data from a number of the sub-studies identified above namely: the *Study of handicapped school leavers*; the *Feasibility Study for NCDS4*; and the *Smoking Survey*. These are also available for secondary analysis.

A summary of the NCDS data held by the Data Archive is given in Table 8. Full details are available from the Archive at the address given below.

NCDS USER SUPPORT GROUP

In 1985 the NCDS User Support Group was set up in the Social Statistics Research Unit at City University with funding for two years from the ESRC. This funding ended in March 1987. The main role of the Group was, in co-operation with the ESRC Data Archive, to promote and facilitate the use of NCDS data by other researchers. (Fogelman, 1985b).

Among other things, the Group was responsible for the general enhancement of the NCDS database and the improvement of documentation. It was also involved in preparing data for research, and in working with a small group of university and polytechnic teachers to construct data sets on a subsample of cases and containing a small number of variables, for use in teaching.

THE FUTURE

It has always been intended that NCDS should follow the 1958 birth cohort through childhood and adolescence, into adulthood, and through adult life - a survey 'from the cradle to the grave'. It is arguable that the benefits, in terms of increased knowledge, multiply with successive follow-ups. Development does not end at some arbitrary point in childhood, adolescence or adulthood but continues through life. It follows that it is important to have some purchase on answers to questions such as what kind of children become what kind of citizens, workers, or parents? How do adults themselves develop over time and is this related to aspects of childhood? In what ways does one birth cohort of adults differ in these respects from cohorts born earlier or later? (Fogelman and Wedge, 1981).

The surveys described above have indeed tracked the NCDS subjects through childhood and adolescence and into adulthood, and they have done so without the benefit of long-term funding. At the time of writing there are no assured funds for further surveys of the cohort in adult life. There is, however, commitment to seek such funding in order that the National Child Development Study may continue.

Table 8 NCDS data available for secondary analysis from the ESRC Data Archive

<i>Year</i>	<i>Survey</i>	<i>Cohort Age</i>	<i>Survey instrument/other data</i>
Major surveys:			
1958	Perinatal Mortality Survey	Birth	Selection of original birth data held by the National Birthday Trust Fund
1965	NCDS1 (First follow-up)	7	Parental interview Medical examination Schools questionnaire Tests
1969	NCDS2 (Second follow-up)	11	Parental interview Medical examination Schools questionnaire Tests Child's questionnaire
1974	NCDS3 (Third follow-up)	16	Parental interview Medical examination Schools questionnaire Tests Child's questionnaire
1978	EXAMS (Survey of exam performance)	20	Raw survey data supplied by schools and colleges 300 summary measures of exam performance
1981	NCDS4 (Fourth follow-up)	23	Interview survey Summary measures derived during primary and secondary analysis by NCDS4 team & others Area data from 1971 & 1981 Census Small Area Statistics
1991	NCDS5 (Fifth follow-up)	33	Cohort Member "Your Life..." Cohort Member "What Do You Think?" Cohort Member Interview Partner "Your Life..." Mother Interview Mother "Your Child" Child Interview (Assessments)
Sub-studies:			
1976	Handicapped school leavers	18	Interview survey
1978	Feasibility Study for NCDS4	20	Interview survey
1978	Smoking survey	20	Self-completion questionnaire

Integration of NCDS and the 1970 British Cohort Study (BCS70)

Since the Spring of 1991 the Social Statistics Research Unit has also been responsible for another of the British cohort studies based on one weeks births - the 1970 British Cohort Study (BCS70) which is following the lives of all those living in GB who were born in the week 5-11 April, 1970. This study has also been known as the "Child Health and Education Study", and "Youthscan".

Plans are now being developed for the integration of NCDS and BCS70 in order to capitalise on strengths and experience of both studies. The NCDS and BCS70 data sets are of immense value in tracing factors which influence the present circumstances and characteristics of individuals and groups back to earlier conditions and life experiences. It is possible to investigate for example, the factors which encourage and inhibit the development of a condition such as asthma in teenagers or heart disease in adults; what kinds of family background and upbringing accompany educational success and failure; and to trace the origins of advantage and disadvantage in housing, employment and in domestic life. These studies can then extend such analysis to the next generation.

By collecting data on the cohort members' own children, the transmission of social and medical conditions across the generations can be investigated. Are the health consequences of environmental circumstances transmitted from parents to their children? Are parenting practices and their outcomes repeated in subsequent generations and if they are not, are any patterns discernible at all?

The scientific strength of the longitudinal cohort study resides principally in the "internal analysis" of life history data. Inter-cohort comparison is valuable because it enables us to control the age and cohort effects which any single longitudinal study contains. Cohort effects are products of the time-specific qualities of the external environment in which the cohort members grow and with which they interact. Changes in the medical management of childbirth or in social policy towards child rearing, for example, may lie behind differences in outcome.

Longitudinal studies of single cohorts are fundamentally about aetiology: establishing how current functioning relates to past circumstances and life events for a particular sample of individuals. The existence in Britain of three longitudinal cohort studies enables in principle, the control of cohort effects in medical and social outcomes within a specific time period (1946-1970; people born between these dates will of course be subject to general shared cohort effects as well). We can observe how the prevalence of different medical and social conditions varies across the generations. We can also examine whether models linking present functioning with past conditions are stable over the time period that the studies span. Some previously published cross-cohort research is considered in the next section.

Until now, each of the three British cohort studies has been designed and carried out separately following the research interests of the team conducting it, their advisors and the funding bodies who supported them. However, the recent move of BCS70 to SSRU now means that the 1958 and 1970 cohort studies can adopt an integrated framework in their future planning and execution which will maximise the comparability between the two. For example, we plan to contact BCS70 cohort members at similar ages to NCDS members in NCDS4 and NCDS5. BCS70 plans to carry out the next major survey sweep when cohort members are 24/5 years old. It will be possible to include similar topics in the 24/5-year BCS70 sweep to those included in NCDS4, and use the same or similar survey instruments. The resulting databases will be integrated to facilitate cross-cohort analyses.

It can be seen that this development will provide the medical and social science community with a unique set of data comprising information about the lives of over 30,000 individuals, their parents, partners and children, with which to trace not just individual development over time but also changes across cohorts over time.

CONTACT POINTS FOR FURTHER INFORMATION

For further information concerning NCDS data, and NCDS in general, contact:

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Fax: (0171) 477-8583
Email: ncds@ssru.city.ac.uk

For further information about the availability of NCDS data for secondary analysis, contact:

ESRC Data Archive
University of Essex
Colchester CO4 3SQ

Tel: (01206) 872001
Fax: (01206) 872003
Email: archive@essex.ac.uk

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APPENDIX 1: British Birth Cohort Studies

Figure 1: British Longitudinal Birth Cohort Studies:

Birth Cohort Studies

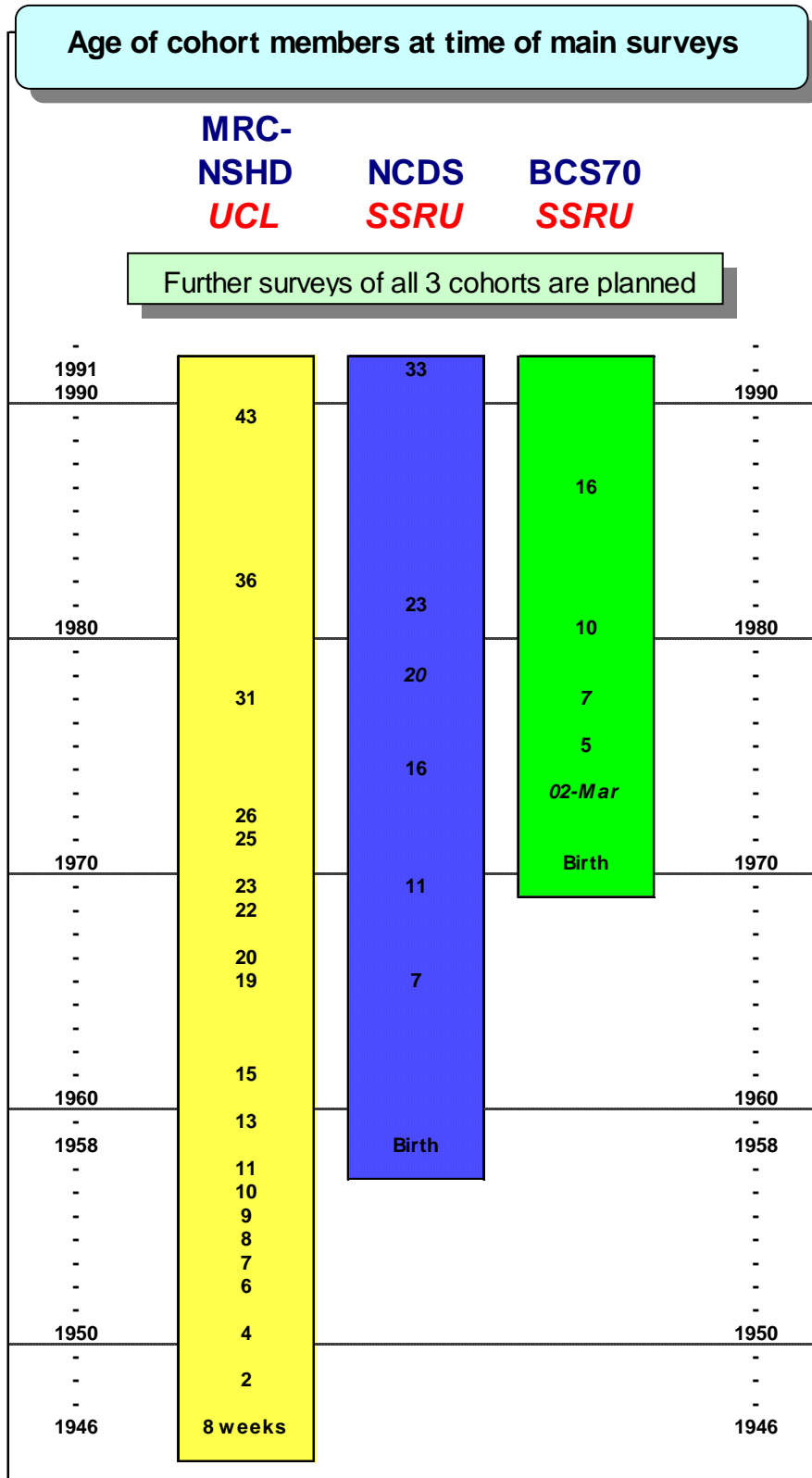
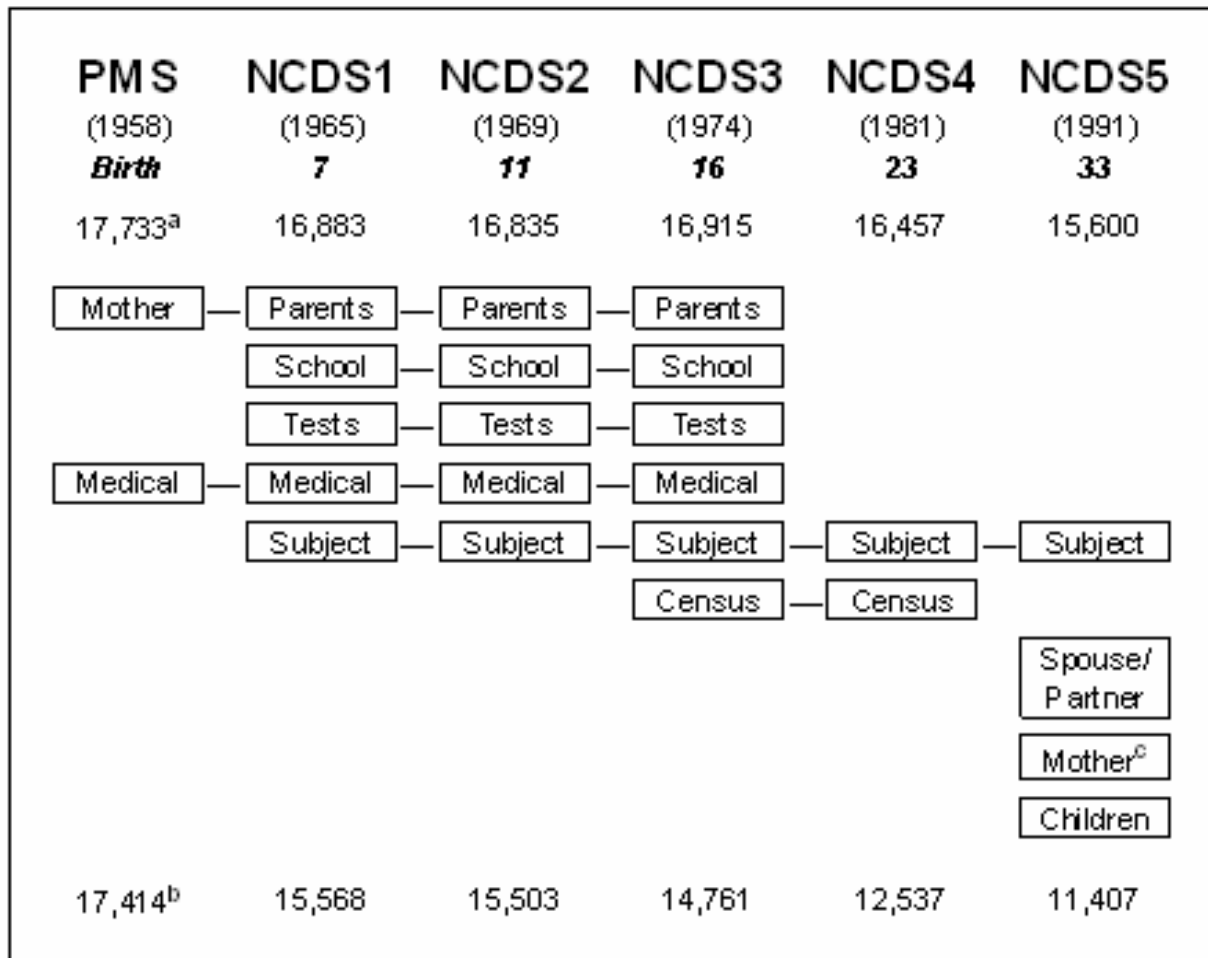


Figure 2 National Child Development Study



Notes:

- a: Target Sample - immigrants with appropriate date of birth included for NCDS1-3.
- b: Achieved Sample - at least one survey instrument partially completed.
- c: This could be the Cohort Member, their Spouse, or Partner.

APPENDIX 2: NCDS: SUMMARY OF DATA COLLECTED 1958-1991

Perinatal Mortality Survey (PMS): 1958

<i>Parents and Medical Records</i>
Social & family background
Obstetric history
Antenatal care
Abnormalities during pregnancy
Length & abnormalities of labour
Analgesia & Anaesthesia
Sex, weight, progress, management & outcome of infant
Mother's smoking during pregnancy

National Child Development Study, First Follow-up (NCDS1): 1965

<i>Parents</i>
Family size
Parental situation
Father's occupation
Father's education
Mother's work
Type of accommodation
Tenure
Number of rooms
Household amenities
Periods 'In Care'
Hospital admissions
Clinic attendance
Medical history
Behaviour
Physical co-ordination
Adjustment to school
Separation from mother
Pre-school experience
Infant Welfare Clinic attendance

<i>Medical</i>
Height and weight
Head circumference
Tests & clinical assessments of motor co-ordination & laterality
Full clinical examination

<i>School</i>
School size and organisation
School and parents
Teachers assessment of child's abilities, attainment & behaviour

<i>Subject</i>
Southgate Reading Test
Copying Designs Test
Goodenough Draw-a-man Test
Problem Arithmetic Test

National Child Development Study, Second Follow-up (NCDS2): 1969

Parents
Family size
Parental situation
Father's occupation
Father's education
Mother's work
Type of accommodation
Tenure
Number of rooms
Household amenities
Periods 'In Care'
Hospital admissions
Clinic attendance
Medical history
Behaviour
Physical co-ordination
Adjustment to school
Separation from mother
Pre-school experience
Infant Welfare Clinic attendance
Financial situation
Housing satisfaction
Satisfaction with neighbourhood

Medical
Height and weight
Head circumference
Tests & clinical assessment
Full clinical examination
Pubertal development

School
School size and organisation
School and parents
Teachers assessment of child's abilities, attainment & behaviour

Subject
Reading comprehension test
Mathematics comprehension Test
General Ability Test
Copying-designs Test
Short questionnaire on interest out of school & educational aspiration
Essay describing their life at age 25

National Child Development Study, Third Follow-up (NCDS3): 1974

Parents
Family size
Parental situation
Father's occupation
Father's education
Mother's work
Type of accommodation
Tenure
Number of rooms
Household amenities
Periods 'In Care'
Hospital admissions
Clinic attendance
Medical history
Behaviour
Physical co-ordination
Adjustment to school
Separation from mother
Pre-school experience
Infant Welfare Clinic attendance
Financial situation
Child's future education and employment

Medical
Height and weight
Head circumference
Tests & clinical assessment
Full clinical examination
Pubertal development

School
School size and organisation
School and parents
Teachers assessment of child's abilities, attainment & behaviour, future education and development

Subject
Reading comprehension test
Mathematics comprehension test
Questionnaire covering: School; Education; Further & higher education; Future employment; Relationships with the family; Marriage & family plans; Leisure activities

Survey of Public Examination Entry and Performance (EXAMS), 1978

Schools (and colleges)

Details of entry and performance in public examinations

National Child Development Study, Fourth Follow-up (NCDS4): 1981

Subject

Employment & Unemployment
 Apprenticeship & training
 Education & qualifications since school
 Literacy & numeracy
 Periods out of the labour force
 Attitudes to school & work
 Number, age & sex of all natural children
 Children's health
 Marriage & cohabitation
 Characteristics of partners
 Marriage/family plans
 Contraceptive use
 Housing

Subject (continued)

Family income & savings
 Health, accidents & hospital admissions
 Height & weight
 Leisure & voluntary activities
 Economic status of parents
 Experience of 'Care' as a child
 Malaise Index

Area Data

These data provide details of the location and characteristics of the area the subject was living at NCDS4 and NCDS3. They are based on the Small Area Statistics of the 1971 and 1981 Census.

National Child Development Study, Fifth Follow-up (NCDS5): 1991

Cohort Member Survey

"Your Life Since 1974"

Self-completion event history questionnaire covering:
 Marriage/ cohabitation
 Children
 Jobs
 Periods not in a job
 Housing

"What Do You Think"

Self-completion attitude questionnaire covering:
 Marriage (including the Locke-Wallace "Quality of Relationship" battery)
 Women's roles
 Children and the family
 Social support
 Social and political values (left/right, traditional/modern)
 Environmentalism
 Racism
 Sexism
 Political trust/cynicism
 Orientation towards work
 Value of work
 Job control
 Perceived job-related skills

Interview Questionnaire

Current/last and previous jobs
 Spouse partner's current job
 Spouse/partner's earnings
 Unemployment
 Education and training
 Qualifications held
 Literacy and numeracy problems
 Marriages and cohabitations
 Pregnancies and children
 Housing circumstances
 Aspects of housing history (including rent/mortgage arrears, and homelessness)
 Income from state benefits
 Income from other sources
 Savings and investments
 Inheritance and debt
 Health and health history (including: asthma and other specific conditions, disability, accidents and assaults, hospital admissions, etc)
 Health behaviour (including: smoking, drinking, drink driving)
 Citizenship (including: voting behaviour, religiosity)
 Ethnicity.
 Malaise Inventory: 24 items derived from the Cornell Medical Index

Cohort Member Height & Weight Measurement

Using portable measuring equipment.

Partner Survey

Partner "Your Life..."

Self-completion event history questionnaire covering:
Marriage/ cohabitation
Children
Jobs
Periods not in a job
Housing

Mother and Child Survey

(All natural/adopted children in a sample of one in three cohort families)

Mother Interview Questionnaire

Gathering the following details for each child:
Family life
Pregnancy and birth
Health history
Separations from mother
Experience of being "in care"
Pre-school experience
Schooling history
Experience of day care

Mother "Your Child"

Self-completion questionnaire giving for each child:
Motor and Social Development
Behaviour Problems Index
Temperament
Home Environment

Child Height and Weight Measurement

Using portable measuring equipment.

Child Assessments (children 4 years and older)

Peabody Picture Vocabulary Test
McCarthy Scale of Children's Abilities: Verbal Memory Subscale
Peabody Individual Achievement Tests:
- Math Subscale
- Reading Recognition Subscale
- Reading Comprehension Subscale
Wechsler Intelligence Scale for Children:
- Digit Span Subscale
Perceived Competence Scale
Self-Perception Profile
Plus, an interviewer evaluation of:
Testing Conditions
Child Temperament
Home Environment

APPENDIX 3: NCDS5 Advisory Groups

Child Rearing and Child Health

Co-ordinator: Professor Ken Fogelman

Collaborators: Dr Ronald Davie, Dr Elsa Ferri, Mr Alan Gibson, Professor Harvey Goldstein, Mr Dougal Hutchison, Dr Barbara Maughan, Professor Catherine Peckham, Dr Michael Wadsworth.

Citizenship and Participation

Co-ordinator: Dr Alan Marsh

Collaborators: Professor Hugh Berrington, Professor Ronald Inglehart, Professor Hans Dieter Klingemann.

Families and Social Networks

Co-ordinator: Dr Kath Kiernan

Collaborators: Professor John Hobcraft, Dr Gill Jones, Mr Michael Murphy.

Health Behaviour, Beliefs and Education

Co-ordinator: Dr Michael Calnan

Collaborators: Dr Mildred Blaxter, Dr Sally McIntyre, Dr David McQueen, Dr Roisin Pill.

Health Continuities

Co-ordinator: Dr Michael Joffe

Collaborators: Professor Ross Anderson, Dr Mildred Blaxter, Dr Derek Cooke, Dr David Jones, Professor Michael Marmot, Dr Anne Oakley, Professor Catherine Peckham, Dr Chris Power, Professor Aubrey Sheiham

Housing and Environment

Co-ordinator: Mr Alan Holmans

Collaborators: Dr Moira Munro.

International Comparisons

Co-ordinator: Professor Robert Michael

Collaborators: Dr John Ermisch, Mark Rosensweig, Professor Nancy Tuma, Professor Bob Willis, Professor Ken Wolpin.

Mental Health

Co-ordinator: Dr Barbara Maughan

Collaborators: Professor Tom Aschenbach, Professor George Brown, Mr John Done, Dr Andrew Pickles, Dr David Quinton, Dr Bryan Rogers, Professor Michael Rutter.

Occupation and Income Dynamics

Co-ordinator: Professor Peter Dolton

Collaborators: Professor John Bynner, Dr Shirley Dex, Mr Peter Elias, Dr John Ermisch, Mr Alan Gibson, Dr Anthony Heath, Ms Heather Joshi, Dr Malcolm McGuire, Ms Joan Payne, Professor Ken Roberts.

Reproductive Performance

Co-ordinator: Professor Eva Alberman

Collaborators: Dr Ian Chalmers, Professor Irvin Emanuel, Dr Michael Joffe, Ms Alison MacFarlane, Dr Michael Wadsworth.