National Child Development Study
User Support Group

Working Paper
No 17

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*               THE NCDS5 DEVELOPMENT PROGRAMME                         *
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by

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submitted to ESRC in October 1986

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THE NCDS5 DEVELOPMENT PROGRAMME

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PREFACE

The National Child Development Study (NCDS) is a continuing longitudinal study which is seeking to follow the lives of all those living in Great Britain who were born between 3 and 9 March, 1958 (Fogelman, 1983; Shepherd, 1985).

This paper outlines the issues to be considered during an eighteen-month **Development Programme** designed to prepare for a further major survey of the subjects of the National Child Development Study (NCDS). It forms part of the request for funding submitted to the Economic and Social Research Council (ESRC) in October 1986 with a view to the Programme commencing in April 1987.

In 1985 an NCDS User Support Group was established in the Social Statistics Research Unit at The City University, with funding for two years from ESRC. The main role of the Group has been to promote and facilitate the secondary use of NCDS data for both research. Some 90 researchers have made enquiries about using the data, many have resulted in funded projects and a number of publications are now appearing. After a year-long review of the possibilities, which involved numerous discussions with a wide range of researchers both in this country and abroad, it has been decided to build on NCDS as a resource for the research community. Researchers who would be most likely to use NCDS data in the future are to be involved in drawing up plans for the next round of data collection.

If the application to ESRC is successful, funds will be sought for the main survey from outside ESRC, probably from the USA. If that application is, in turn, successful, a further application will be made to ESRC for support for five years for an NCDS Core Team to manage the collection and distribution of data.

INTRODUCTION

The National Child Development Study User (NCDS) Support Group (USG) has been set up in the Social Statistics Research Unit at City University with funding for two years from the Economic and Social Research Council (ESRC). The primary role of the Group is to promote and facilitate the use of NCDS data for both research and teaching (Fogelman, 1985; Shepherd, 1985). However, in collaboration with the NCDS Steering Committee, set up by the National Children's Bureau, the User Support Group is also preparing proposals for a study to develop plans for further surveys of the NCDS birth cohort.

In particular this **NCDS Development Programme** will explore alternative strategies for data collection, survey management and data management appropriate to future surveys of the members of the NCDS cohort.

It is anticipated that the programme will take about eighteen months to complete and it is intended to seek funding from ESRC in order that work can begin in April 1987.

This paper will outline the proposed Study, the aims and background.

BACKGROUND

A FUTURE FOR NCDS - 'gathering information for the research community'

Discussion of the future of NCDS with the National Children's Bureau, the NCDS Steering Committee, leading researchers and potential funders - both in the UK and the US - have emphasised the need for a study of alternative strategies for data collection, survey management and data management.

A feasibility study which considered, alternative data collection strategies, was undertaken in 1977 (with Department of the Environment funding) before the 1981 follow-up (NCDS4) (National Children's Bureau, 1978). However, a further review seems vital, especially in the light of developments since that time, not least in survey methodology and computer hardware and software. This is view is further supported by the demand for access to NCDS data for both research and teaching in the UK and elsewhere revealed by the efforts of the User Support Group and the ESRC Data Archive.

The recent discussions of the future of NCDS have focussed on 'gathering information for the research community'. The paper, prepared by the User Support Group, which formed the basis of these discussions outlined an overall strategy for the future in which there would be an NCDS Core Team based in SSRU and a group of Research Collaborators based in SSRU and outside (NCDS User Support Group, 1986).

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* **The Research Collaborators** would bring practical and research expertise in a number of areas to the design, conduct, analysis and reporting of a further round of data collection. They will be responsible for the validation of the data, the development of derived variables and links to other researchers both within and without the group of collaborators. The research collaborators will have the first opportunity to analyse data from future NCDS surveys.

* **The NCDS Core Team** would co-ordinate and facilitate the work of the collaborators, design and plan surveys, pilot questionnaires, etc, contact the sample, arrange data collection and data processing, check the quality of data, produce documentation, and provide advice. They would also provide a central clearing house of information concerning progress with the preparation and analysis of data in a manner similar to that adopted by the NCDS User Support Group.

A MODEL FOR THE NEXT ROUND OF DATA COLLECTION

The strategy paper suggests that the appropriate model for data collection comprises:

    *   a **Main Survey**; and

    *   **Supplementary Surveys** covering one or more topics in some detail.

The research collaborators would have prime responsibility for specific areas of the core and supplementary surveys and a secondary responsibility for supporting data in other areas which was also useful to them specifically or to the data set as a whole.

MAIN RESEARCH THEMES

A number of **research themes** considered appropriate to the future of NCDS have guided the selection of potential collaborators and the subsequent discussions (see Diagram 1 below).

For each **theme** one collaborator will act as a **Co-ordinator** to convene meetings of those primarily concerned with that theme and to represent their views to other **Co-ordinators** and to the NCDS **Core Team.**

Diagram 1   Research themes for NCDS5

Family and social networks	Occupation and income dynamics	Social mobility	Housing and environment

Reproductive performance	NCDS Core Team	Mental Health

Child rearing, health and education	Health behaviour, beliefs and education	Heart disease	Ageing

3rd Generation
Study

1st Generation
Study
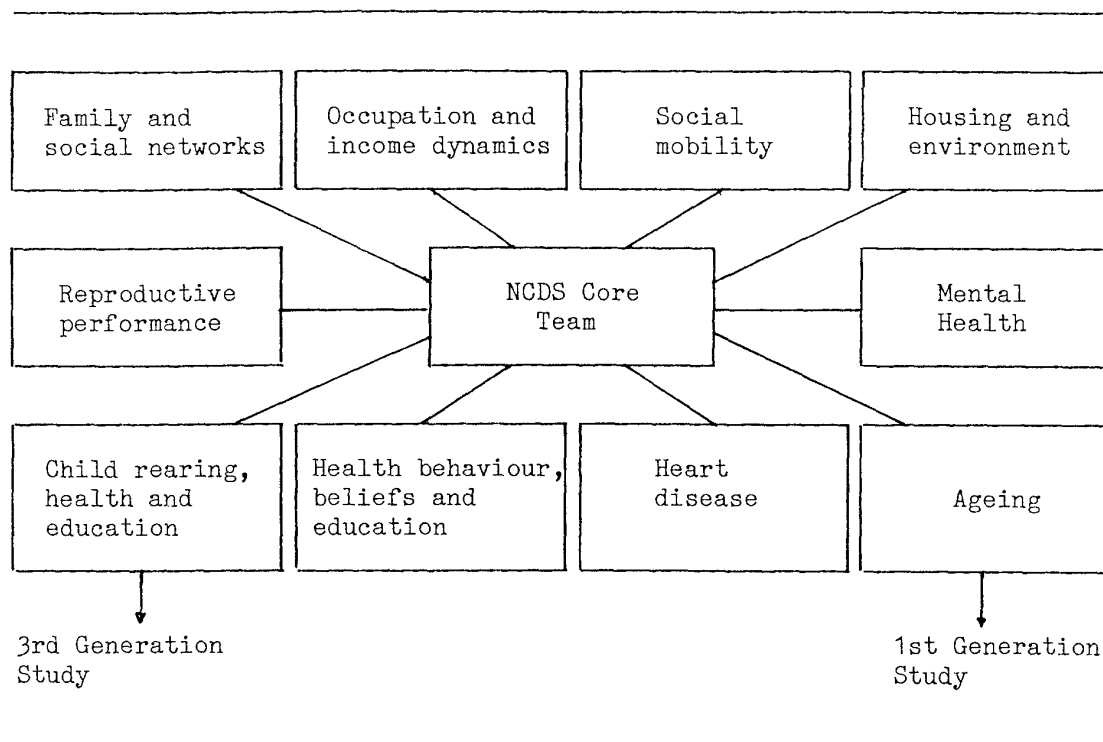
PROGRAMME TASKS

INTRODUCTION

The Development Programme will explore the issues identified below by means of:

  *   **Consultation** with research collaborators and others with relevant expertise in longitudinal studies, data collection, survey management and data management;

  *   **Pilot studies** of alternative approaches to data collection, survey management and data management in order to identify the most practicable strategy for NCDS in the future.

An important resource in relation to both approaches arises from the association between The City University and **Social and Community Planning Research.** This will give SSRU accesss to advice from the Survey Methods Centre, to SCPR's specific expertise in a number of the substantive areas to be covered, and to qualitative and quantitative interviewing resources.

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Some questions to be answered during the Development Programme

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*   Content of future NCDS survey(s)

*   Whom to approach for what information?

*   What combination of data collection strategies would prove best?

*   Should the NCDS cohort be sampled, and how?

*   What is the optimal means of obtaining different types of information?

*   What will be the best strategy for tracing and contacting the sample?

*   How do we maintain contact, especially given the need to carry out supplementary surveys?

*   How can day to day control of future surveys be ensured?

*   What are the best arrangements for the data management tasks associated with the collection of further data, merging this data with data from previous follow-ups and the export of longitudinal data files to research collaborators?

There will be regular meetings with **Research Collaborators** (at least 6 monthly), and more frequent meetings with the **Co-ordinators** of research themes (at least bi-monthly – see **Timetable** below) in order, for example, to consider survey content, discuss alternative strategies and review progress. Meetings with **Collaborators,** both individually and in groups, will also take place on an ad hoc basis to resolve particular issues. Similarly, there will be ad hoc meetings with those experienced in the problems of longitudinal studies, data collection, survey management and data management and, where appropriate, the services of specialist consultants will be retained.

The aim will be to resolve issues relating to data collection, survey management and data management as far as possible on the basis of existing knowledge. Only where such knowledge was lacking or inadequate would resort be made to practical tests to resolve uncertainty. Uncertainty will, for example, occur because of the scope or scale of the planned study, or because of the risk of relying on knowledge gained in different contexts.

It will also be appropriate to keep the increasing numbers of researchers who are making use of NCDS data for both research and teaching informed of plans and progress. This would be achieved through papers presented at relevant seminars and conferences, through especially organised NCDS seminars, and through the medium of the NCDS Newsletter (the NCDS User Support Group is currently preparing the first issue).

Pilot studies of data collection will rely on small scale surveys of samples of NCDS cohort members, and, if necessary, of other potential respondents. Practical studies survey management and data management will rely in the main on the use of existing NCDS data, although the pilot data collection surveys may also provide the opportunity for testing procedures.

An indication of some of the issues which will need to be considered in each of the main areas is given by the list of questions set out below. Each is briefly reviewed in the remainder of this paper. For each of these we will need to establish costs and benefits.

DATA COLLECTION

Content of future NCDS survey(s)

The issue of content is of prime importance to any consideration of
sources of information and to exploration of **data collection
strategies** and **sampling.** Certainly, it would seem vital that this
issue is substantially resolved before pilot studies of **methods of data
collection,** etc are carried out.

An outline of the topics which might be included in future surveys of NCDS
is included as an Appendix. The topics identified are based on papers
tabled by potential Research Collaborators at the meeting on 18 June 1986.

During the Development Programme, the topics will be further reviewed with
the **Research Collaborators,** and detailed survey instruments and
questions designed, and when appropriate, piloted. It will then be
necessary to assess the extent to which each of these topics can be
covered in the light of the resources available, and their appropriateness
to the **Core Survey** or a **Supplementary Survey.**

Sources of information

Whom to approach for what information?

The suggested content of a further round of data collection reinforces the
need to consider who should be approached for information in the future.
The list of possibilities is long as Tables 1 and 2 reveal.

Table 1   Possible sources of information in future surveys

Individuals	Organisations/Records
Subject	Home Office (prison records, etc)
Spouse/partner	MoD (armed forces)
Children	National Health Service Central
Parents	Register
Employers	UCCA and other education records
Doctors	GP/hospital records
Other individuals (eg. proxy	Other individual records
interviews)	Environment/area characteristics
	(eg. Census, DE area employment
	records)

Table 2 Possible sources of information in future studies of the NCDS
         cohort

Topic	Source(s) of information
* Mental Health	Respondent/Doctor/Records
* Heart Disease	Respondent/Doctor/Records
* Health Behaviour, Beliefs and Education	Respondent
* Reproductive Performance	Respondent/Doctor/Records
* Families and Social Networks	Respondent/Partner
* Housing and Environment	Respondent/Partner
* Occupation and income dynamics	Respondent
* Socio-Economic Mobility	Respondent
* Child Rearing and Child Health	Respondent/Partner/Children
* Ageing	Respondent/Parents
* Methodology	All

Strategies for data collection

*   What combination of data collection strategies would prove best?

The overall strategy adopted for studies of the NCDS cohort since 1965 has
involved studies of the entire cohort and, in the intervening years, ad
hoc studies of sub-samples consisting of such special groups as, for
example, the handicapped, those in the care of the local authority, etc.
This strategy is still perhaps implicit in the data collection model
described above but the Development Programme would seek to explore
alternatives.

The Feasibility Study identified a number of **elementary** and more
complex strategies appropriate to the continuation of NCDS (see Table
3). However, any strategy which involves repeated surveys of a sample or
samples of the NCDS cohort would produce information for individuals who
would not be included in the immediately previous or succeeding surveys.
Diagram 2 below contrasts, schematically, the pattern of data collection
which would result from the adoption of each of these elementary
strategies with the pattern resulting from the birth survey and the NCDS
follow-ups in 1965, 1969, 1974 and 1981 (National Children's Bureau,
1978).

The proportion of cohort members common to successive surveys would depend
upon the sample design adopted (see Table 4).

Table 3 Elementary and Complex strategies for the continuation of NCDS

Strategy	Description
Elementary strategies	
Cohort	Repeated surveys of the entire NCDS cohort, ie. continuing the approach adopted to date
Fixed Sample	Repeated sample surveys of the cohort with the same sample being chosen on each occasion – an approach similar to that adopted by the National Survey of Health and Development
Independent Sample	Repeated sample surveys of the cohort with a new sample being selected on each occasion without regard to the composition of previous samples
Partial Replacement	Repeated sample surveys of the cohort with **part** of the sample being replaced on each occasion
Split Sample	Repeated sample surveys of the cohort with a new sample being chosen on each occasion to exclude individuals from previous samples
Ad Hoc Sample	Irregular sample surveys of groups of individuals who are of particular interest, the cohort being maintained as a form of 'master sample' from which smaller samples of known characteristics can be drawn.
Complex Strategies	
Cohort & Ad Hoc	Repeated surveys of the entire cohort may be combined with ad hoc surveys of groups of special interest
'Sample' & Cohort	Repeated sample surveys may be combined with less frequent surveys of the entire cohort
Fixed & Other samples	Repeated surveys of a **fixed sample** may be supplemented on all or some occasions by **independent, partial replacement** or **split** samples chosen from those members of the cohort not included in the fixed sample
Sampling a Fixed Sample	Repeated **independent, partial replacement** or **split** samples may be selected from a **fixed sample.**

Source: National Children's Bureau, 1978

Diagram 2   Pattern of data collection - elementary strategies and previous studies compared

Strategy	Survey:								
	Birth Survey (1958)	National Child Development Study 1 ('65)	2 ('69)	3 ('74)	4 ('81)	5 (?)	6 (?)	7 (?)	8 (?)
Cohort	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x
Fixed Sample (50% sample)	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x
	x	x	x	x	x				
	x	x	x	x	x				
Independent (50% sample)	x	x	x	x	x		x	x	x
	x	x	x	x	x	x	x	x	
	x	x	x	x	x				
	x	x	x	x	x	x			x
Partial Replacement (50% replaced)	x	x	x	x	x	x			x
	x	x	x	x	x	x	x		
	x	x	x	x	x		x	x	
	x	x	x	x	x			x	x
Split Sample (50% sample)	x	x	x	x	x	x		x	
	x	x	x	x	x	x		x	
	x	x	x	x	x		x		x
	x	x	x	x	x		x		x
Ad Hoc Sample	x	x	x	x	x			x	
	x	x	x	x	x	x	x	x	
	x	x	x	x	x		x		
	x	x	x	x	x			x	x

Note: Each vertical bar represents the NCDS cohort and the crosses ('x') indicate the proportion for which data would be available on the assumption that all can be traced and are willing to provide information.

Source: National Children's Bureau, 1978

Table 4   Elementary strategies and the proportion of cohort included in
          successive sample surveys

Strategy	Initial sample survey %	Follow-up sample surveys: First	Second	Third	Fourth
Independent	50	25	25	12.5	12.5
Partial replacement	50	25	0	0	0
Split sample	50	0	0	0	0

Source: National Children's Bureau, 1978

Sampling

*   Should the NCDS cohort be sampled, and how?

Future studies which do not rely simply on repeated studies of the entire
cohort require that an appropriate sample, or samples, of members of the
cohort be taken.   The decision as to what constitutes an appropriate
sample depends, amongst other things, on the particular strategy adopted,
on the nature of the information required and on the practicalities of
data collection and, ultimately, on considerations of accuracy and cost.

If sampling is required, a number of options are available (see Table 5).
In particular, the large amount of back-data available on members of the
cohort offers the potential of powerful stratification.   This could be
imposed at the selection stage and/or as post-stratification adjustment of
the achieved sample.   Decisions on the variables to be used will depend
upon the priorities for data collection, to be established during the
Development Programme.   Similarly, consideration will be given to
disproportionate sampling of subgroups in the cohort, dependent upon the
emergence of special interest groups.

Finally, the structure of the sample – in particular any use of
multi-stage sampling – will depend upon both data requirements and the
method of data collection adopted.   Personal interviewing would probably
point to the use of multi-stage sampling; telephone interviewing or an
approach by mail would allow the use of single stage sampling, which can
be expected to be desireable on the grounds of statistical efficiency.

Table 5   Seven modifications to simple random sampling to provide more
practical, economical or precise designs.

Modification	Description
1 Sampling Unit	the **sampling units** from which a selection is made on any occasion may be **individual** members of the cohort **OR** they may be **clusters** of members (eg. geographical areas where the object is to reduce tracing costs and the travel element in field costs by restricting the areal coverage of a survey).
2 Stratification	the cohort may be sampled as **one population OR stratified** into sub-populations each of which is sampled (eg. to ensure adequate representation of groups of special interest, or to allow for differences in costs of data collection, etc).
3 Staging	the sample may be chosen in **one stage**, information being obtained for each individual selected, or for all individuals in each cluster, **OR** in **two or more stages**, when further sampling occurs within each selected cluster (eg. to reduce tracing and field costs).
4 Phasing	all information may be obtained in a **single phase** from the whole sample during a single survey, **OR** (eg. when some items are known to be costly or troublesome to collect) in **two or more phases**. In the latter case some information could be collected from the whole sample and additional information from sub-samples either concurrently or subesquently.
5 Probability of selection	members of the sample may be selected with **equal probability OR** (eg. where the cost of including certain population elements is high, or when it is desirable to increase the representation of rare elements) with **unequal probability**.
6 Method of selection	selection of members of the sample may be **random OR**, where selection is based on some other criterion, **non-random**.
7 Number of samples	there may be **one sample** selected OR or a number of **replicated samples** each having the same design and each being an adequate sample of the population. The latter would facilitate the production of preliminary results based on analysis of data from a relatively few replications.

Source: National Children's Bureau, 1978

Methods of Data Collection

* What is the optimal means of obtaining different types of information?

Over the years NCDS has successfully employed a variety of data collection methods. Four methods of obtaining information would seem to be relevant (see Table 6).

Table 6 Four methods of data collection

Method	Comment

1 **Interview**
  face to face
  telephone
	Commercial/NCDS interviewers?
	Most flexible?
	Feasible? Too costly?

2 **Respondent–completed Questionnaire**
  distributed:
    by post
    by interviewer
  returned:
    by post
    by interviewer
	Poor response? Limited size
	
	Improves response?
	
	Better response/data quality?

3 **Independent Documentary Records**	eg. medical, educational, prison, armed forces records
4 **Observation**	eg. medical examinations

The Development Programme will explore the relative merits of the methods available for further data collection, individually and in combination.

Table 7 provides one **general** comparison of postal, face–to–face and telephone survey methods based on experience gained in the US. The **Development Programme** will need to provide a similar comparison on similar criteria in the GB context taking **specific** account the **content** of the **Main Survey.**

Clearly, this judgement can only emerge in the context of the agreed data requirements: how much, of what kind of data are needed, from whom? But it is important to consider alternatives to the "traditional", extremely flexible but relatively expensive face–to–face interview.

With a highly scattered sample as in NCDS, telephone interviewing might yield cost–savings. Telephone coverage of this age group will be high (over 90%) and methodological experiments show that the shortfall can be made up through face–to–face contact. Again, the common problem of refusal to be interviewed might well be less marked in a sample with a high level of prior involvement. The major limitation of a telephone interview would be on its length, implying the need for a mixed methodology employing a mailed supplementary questionnaire.

An entirely postal methodology would yield even greater cost savings. It might also be preferred for questionning on some sensitive topics. There would, however, be worries about the risk of high and unevenly distributed non-response and about the lack of control in the abscence of an interview.

These, and other related issues, will have to be resolved through discussion and controlled experimentation during the **Development Programme.**

Table 7   A Comparison of Postal, Face-to-Face and Telephone Survey Methods

Factor	Postal	Face-to-Face	Telephone
Administration			
Cost	1	4	2
Personnel	na	4	3
Supervision	2	3	4
Implementation time	4	4	1
Sampling			
Sample coverage	3	1	1
Response rate	4	2	2
Refusal rate	dk	3	3
Non-contact rate	2	3	2
Response from elites	4	1	2
Correct respondent	4	2	2
Data quality			
Interviewer control	na	3	1
Socially desirable response	1	4	3
Item non-response	3	2	3
Questionnaire length	3	1	2
Confidentiality	4	4	4
Sensitive questions	2	1	2
Probing	4	1	2
Clarification	4	1	2
Complex questions	3	1	3
Open-ended questions	3	1	2
Visual aids	2	1	4
Consultation with others	4	1	1

Key: 1 = Major advantage   2 = Minor advantage
3 = Minor disadvantage   4 = Major diadvantage
dk = Unknown   na = Not appplicable

Source: FREY, J H (1983) pp 27-55 and Table 2.1

Tracing the NCDS cohort

* What will be the best strategy for tracing and contacting the sample?

Until recently, no attempt has been made to maintain ongoing contact with cohort members. They were traced afresh for each survey. The Development Programme will need to explore the available means of tracing and contacting the NCDS cohort in the light of the experience of tracing and response gained during NCDS4 and the state of the address file. In particular, there will be a need to consider ways in which the under-representation of specific groups of the cohort (eg. immigrants) can be minimised.

Table 8 summarises the sources of information used to trace NCDS subjects, comparing NCDS1-3, where the starting point was the school, and NCDS4, where the starting point for tracing was the last known address.

Table 8   Tracing for NCDS1-4

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

Maintaining contact

* How do we maintain contact, especially given the need to carry out supplementary surveys?

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 freepost envelope (see Table 9). The Development Programme will need to establish whether additional efforts are required in order to facilitate **supplementary** surveys of sub-groups of the cohort.

Table 9 Information requested on NCDS birthday cards

Year	Information requested
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

SURVEY MANAGEMENT

*   How can day to day control of future surveys be ensured?

Because of the size of the target sample, and because no follow-up has relied simply on one source of data, the organisation and control of surveys of the NCDS cohort have typically been problematic. The data collection outlined above implies that the Development Programme will need to explore how the preparation and conduct of future surveys can be managed on a day-to-day basis.

For NCDS4 a survey management program was developed by the interview survey subcontractors - NOP Market Research Limited and Social and Community Planning Research - in order to increase the accuracy of survey management information and to reduce the amount of clerical record keeping (with associated errors) and also allow frequent access to survey progress information (see Table 10).

Table 10 Elements of the NOP/SCPR NCDS4 Survey Management Program

Program element	Function
I Fieldwork	Storing and updating of names and addresses Allocation of sample to fieldwork agencies Allocation of sample to interviewers Printing of sample issue sheets Printing of address labels Logging of survey outcome
II Monitoring of DP activities	Data entry Editing Coding

DATA MANAGEMENT

*   What are the best arrangements for the data management tasks
     associated with the collection of further data, merging this data with
     data from previous follow-ups and the export of longitudinal data
     files to research collaborators?

The NCDS follow-ups have generated a large data set (currently c4,000
variables for each of c18,500 cases) and data storage, retrieval and
analysis have frequently been problematic. As a result of the efforts of
NCB DP staff during the last follow-up, the data is currently held as a
SIR data base (SIR - Scientific Information Retrieval) - at the University
of London Computer Centre (ULCC). This has made tasks such as
documentation, maintenance and updating of the data, the creation of
subsets of data for analysis purposes, and the export of data to outside
users for research and teaching much more straightforward.

The prospect of the addition of a further large volume of data, generated
by the **Core** and **Supplementary** surveys, and the need to distribute data
for analysis to the **Research Collaborators**, suggest that a review of the
options for data management will be vital (see Table 11).

Table 11   Data management issues associated with further NCDS survey

Issue	Comment
Computing resources:	What is needed?
Hardware	ULCC/NCDS Computer?
Software	SIR/Other data base?
Data base management/maintenance	Need long-term arrangement
Address file	To facilitate tracing, etc
Computer-aided questionnaire design	Simplify data base updating?
Computer-aided (telephone) interviewing	Too expensive?
Data entry	Bureau/dedicated staff?
Data editing	SIR/data base independent?
Data documentation	Generated from data base?
Data access/security	Separate address & data files
Data distribution/ESRC Data Archive	Need for consultation
Data analysis:	What is needed?
Software	Packages only sufficient?
Hardware	Collaborators machines OK?

These issues are outlined in more detail below.

Computing resources

*   What are the likely computer hardware and software needs, and how are these best met?

The temptation is to continue to maintain the NCDS data base at ULCC as at present. However, there are already data storage problems which result at least in part from the size of the data base. It will be important for the Development Programme to explore the available alternatives (see Table 12).

Table 12   Computer hardware options for the future of NCDS

Option	Problem
Continued use of ULCC	Adequate cuurent/future disc space?
Other 'academic' computers:	Access guaranteed long-term?
City (Honeywell?)	Inadequate storage/software?
Other (eg. where?)	Access guaranteed long-term? Cost?
Commercial computer bureaux	Access long-term? Cost? Security?
A dedicated NCDS machine	Capital/maintenance cost? Which?

Software is an inevitably related problem. A number of 'bugs' have been encountered in using SIR and the Development Programme will need to assess whether there are better alternatives available. Considerable effort has been put into establishing, documenting and maintaining the NCDS SIR data base but this investment should be transferable at the cost of sufficient programming input. Decisions on hardware and software are, of course, not independent.

Data base management/maintenance

* What arrangements need to be made for the management/maintenance of the NCDS data base in the short-term and in the long-term?

The Development Programme will need to ensure that adequate arrangements are made for the management and maintenance of the existing NCDS SIR data base and to identify the most appropriate arrangements for the long term, whatever the hardware and software solutions chosen. The available options would seem to be few (see Table 13).

Table 13 Options for data base management/maintenance

Option	Problem
An NCDS 'Core Team'	Long-term funding?
ESRC Data Archive	Staff with DP/NCDS knowledge? SIR?
Include with NCDS 'projects'	Funding? Staff with DP knowledge

Address file

* How is the NCDS address file best kept up-to-date and accessible?

Currently details of the name and address of NCDS subjects are held in three different forms. As Table 14 indicates, the compterised address file, which was originally prepared for the 1981 survey, is still held at NOP Market Research Ltd. This has been used as the basis of the annual mailing of birthday cards (see above) and updated as necessary by NCB/SSRU via telephone link to the NOP Prime computer.

Table 14 Records of NCDS names and addresses

Form	Location	Content
Card index	SSRU	Names and addresses for the childhood phase of NCDS (ie PMS, NCDS1, NCDS2 and NCDS3)
Birthday card reply slips	SSRU	Names, addresses & other information from annual mailing in 1982 - 1986
Computerised address file	NOP	Names, addresses & other information from annual mailing in 1982 - 1986

The program used to maintain and update the NCDS address file was not designed for this purpose. It was designed to simplify the management of the NCDS4 interview survey (see above) and has had to be modified annually to cope with the additional volume of information generated by the birthday card exercise. It is important that the Development Programme reviews the maintaining and updating of the NCDS address file in order to provide for the tracing of respondents for both future **core** and **supplemetary** surveys. Once again, the available options would seem to be limited (see Table 15).

Table 15 Options for maintaining and updating the NCDS address file

Option	Comment
Continue with NOP arrangement	Program nearing limits of modification? Cost? Long-term arrangement with NOP?
Maintain address file at SSRU:	
* purpose-written program	Specification exists. Significant DP input?
* package program	Need to modify specification? Micro or mainframe?
Use outside 'bureau'	Could be NOP or other agency. Long-term arrangement? Security?

Computer-aided questionnaire design

* Can computer-aided questionnaire design simplify the task of
  questionnaire production and subsequent transfer of data to computer
  and data documentation?

Traditionally the production of draft, pilot and final questionnaires, the
computer programming required to define new data inputs, and the
preparation of coding frames and associated documentation have each
involved substantial elements of essentially **clerical** effort.
Questionnaire structure, question wording and filtering, and interviewer
instructions define the structure of the data and must be comprehensively
and comprehensibly documentated. Each task has been treated separately
and clerical errors at each stage have been duplicated and compounded.

Computer-aided questionnaire design has been employed in order to overcome
problems in these related areas and the Development Programme will explore
the contribution that can be made to future NCDS surveys. Much of the
existing effort in these areas has been made in order to meet the needs of
market research and typically deals with relatively short questionnaires
with simple structures. Nevertheless, there has been work of a more
'academic' form which may have relevance to the needs of NCDS (eg.
QUESTMAST). Yet again, however, the options are few (see Table 16)

Table 16 Options for computer-aided questionnaire design

Option	Comment
Existing 'commercial' programs	Limited on questionnaire size & complication? Cost?
Existing 'academic' programs	Limited availability? Implementation problems?
Purpose-written program	Cost? Time?

Computer-aided (telephone) interviewing

* Can the use of the computer for survey management be extended to aid
  face-to-face or telephone interviewing?

The use of the computer to assist survey management is discussed above.
The Development Programme will also need to explore the use of the
computer as an aid in the interview process. In particular it will
examine the potential of computer-aided telephone interviewing (CATI).

Data entry

* What is the best method of data entry?

Large scale NCDS surveys result in a major data entry task. Hithertro, data for all NCDS follow-ups has been key-punched into cards - the 1981 interview questionnaire, for example, required some 27 punched cards. The Development Programme will need to examnine the alternatives available for future data collection. There are very few alternatives (see Table 17) but there will be a need to consider the quality of service available. The standard of key-punching by the bureaux employed during the main data preparation phase of NCDS4 was notably low and served to increase the burden of data editing. It may be appropriate for the Development Programme to examine arrangements for data entry by staff directly employed and supervised by SSRU.

Table 17   Options for data entry

Option	Comment
Punched card	Unlikely?
Key to disc	Most likely?
Optical character recognition (OCR)	Most problematic?

There is also a need to explore the advantages of using text processing software to store verbatim responses to open-ended questions. If employed, this would serve to minimise the need to code these responses clerically. However, there would still be a need to prepare coding frames as the basis of programming to enable the allocation of responses to categories to facilitate analysis.

Data editing

* What is the best approach to data editing?

The visual and computer editing is a vital part of adding new data to the NCDS data base. For the 1981 survey both the survey subcontractors and NCB were involved in this task (see Table 18). The cycle of checking, correcting and checking again is inevitably labour intensive - up to 12 temporary staff were employed by the subcontractors for this and related tasks, and seven researchers/statisticians and one programmer at NCB. It is also time consuming - the six rounds of editing carried out by NCB took some 21 months to complete.

Table 18 Summary of the editing of data from the NCDS fourth follow-up

Edit	Data edited	Content
Essential visual edit	Questionnaire	Check major filters followed & dates consistent
NOP edit	Pre-coded data	Checks for: valid serial numbers; all items contained valid codes and values; major filters followed
SCPR edit	Open-coded data	Occupation coding – valid combinations; Other coding – basic range checks
NCB edit		Six rounds of editing:
	Pre-coded data	1. All items contained valid codes and values; major filters followed (essentially a repeat of the NOP edit as a check on their work and to incorporate the checking routines within SIR)
	Pre-coded data	2. Consistency of: * all dates and time sequences * answers between questionnaire sections
	Pre-coded & open-coded data	3. Comprised: * Repeat of stages 1 & 2 in order to establish that changes had been implemented correctly and that further errors had not been introduced by the changes made; * Consistency between open-ended & pre-coded data
	Pre-coded & open-coded data	4. Penultimate edit to ensure that all changes had been correctly implemented and no new inconsistencies introduced.
	Open-coded data	5. Final edit runs to ensure that all changes had been correctly implemented and no new inconsistencies introduced.
	All NCDS data	6. Longitudinal edit to ensure consistency with data from previous NCDS follow-ups.

The Development Programme will need to explore the options available for the editing of future NCDS data. It will be particularly important to establish what the role of the **Research Collaborators** should be in relation to data editing, and what impact this might have on the task.

Data documentation

*   What is the best way to ensure that the data is comprehensively and
comprehensibly documented?

A major task of the NCDS User Support Group has been to improve the
documentation of NCDS data and it will be important to ensure that future
data is properly documented. It is likely that this will require the
involvement of the **research collaborators,** and the Development Programme
will need to explore how this might best be ensured.

The work so far undertaken to document existing data has been mostly an
essentially clerical task. As noted above in the discussion of
computer-aided questionnaire design, it is possible to employ software to
minimise the risk of clerical error and an essential task of the
Development Programme would be to investigate how this might apply to
documentation. The User Support Group is currently employed in updating
the documentation included on the NCDS SIR data base in order to establish
this as a comprehensive source of information on NCDS data (see Table 19).

Table 19   Documentation to be included on the NCDS SIR data base

Element	Content
Variable name	Unique identifier
Standard variable label	Source identifier Summary description <Identifier for variables derived from an originally multicoded variable>

Extended variable label	Details of source:
	    Survey
	    Page no.
	    Question no.
	Question wording
	<Comment on:
	    Coding;
	    Problems;
	    Interpretation;
	    Derivation of recodes>

Value label	Summary description of codes

<> - Optional elements

It is hoped to derive future documentation on NCDS directly from the augmented data base in a form which may be circulated on paper, microfiche, magnetic tape or floppy disc.

Data access/security

*   How can the security of the data be assured whilst ensuring access to **research collaborators?**

Notwithstanding the requirements of recent data protection legislation, the confidentiality of NCDS data has always been of prime concern. Access to the NCDS SIR data base is controlled through the ULCC 'Access Control Facility' and by means of passwords. Data are anonymised to the extent that individuals are identified only by serial number, details of names and addresses are held on a separate computer. The Development Programme will need to investigate ways of ensuring that the security of NCDS data is maintained whilst permitting access to **Research Collaborators** according to need. Once again the options would seem limited (see Table 20).

Table 20   Options for ensuring security of and access to NCDS data

NCDS Core Team	Research Collaborators	Comment
* Access to data base Create analysis files	No access to data base Specify analysis files only	Most secure
* Access to data base	Access to parts of data base only	Complicated?
* Access to data base	Access to data base	Least secure

NCDS data is,of course, available from the ESRC Data Archive. However, experiment has shown that is is possible to combine certain location and census data to create a situation where the probability of identifying an individual is high. As a result, certain location and census data has not been lodged with the Archive.

Data distribution/ESRC Data Archive

* What is the most efficient way to distribute NCDS data among research collaborators?

The model for future NCDS data collection outlined above requires that **Research Collaborators** have quick and easy access to newly collected NCDS data for cross-sectional analysis and to an NCDS data base augmented with the new data for longitudinal analaysis. Previously, primary analysis of NCDS data has been carried out by a single research team working in the National Children's Bureau. In consequence there has not, in general, been a need to arrange for the transfer of data to outside researchers, or from ULCC, until some time after the initial data collection. Indeed much of this task has been left to the ESRC Data Archive at the completion of the primary analysis phase.

It is only on relatively rare occasions that data has been 'exported' directly by the NCDS team. The recent activities of the NCDS User Support Group have, however, resulted in an increase in the number of transfers – sometimes of large data sets for research purposes, but perhaps most commonly of small subsets of data for teaching purposes. Such transfers have most commonly been accomplished by 'dumping' data and data-defining information on to magnetic tape and mailing this to the customer (ie. the ESRC Data Archive, researcher or teacher). More recently, however, the User Support Group has been making tentative use of machine-independent file transfer protocols to make such data transfers. Although this has on occasion proved problematic (often because of the slow diffusion of innovation and knowledge), it is potentially much more efficient.

The Development Programme will need to examine the options for the distribution of NCDS data amongst **Research Collaborators** (see Table 21). In particular, there would be advantage in considering the options in collaboration with the ESRC Data Archive in order to clarify the role that it might play during the primary analysis phase and later. Once again, it will be important to examine the impact of the large size of the data sets involved.

Table 21   Options for the distribution of NCDS data amongst **Research Collaborators**

Option	Comment
Magnetic tape	Significant preparation time
Machine-independent file transfer protocols	Quick if available
Floppy disk	Only very small data sets?
Direct transfer between user accounts	Where **Collaborator** uses same computer as **Core Team**

/

Data analysis software and hardware implications

* What computer software will be needed for analysis and what are the implications for computer hardware if any?

For previous NCDS follow-ups the primary analysis of data undertaken by the NCB has tended to rely on a number of software packages available to researchers and statisticians through ULCC. Table 22 gives an indication of the statistical techniques employed in the analysis of NCDS data and the software packages employed.

Table 22 Statistical techniques and software used in the NCDS analysis

Method	Software
Descriptive statistics	SIR, SPSS, SAS
Cross-tabulations	SIR, SPSS, SAS
Log-linear analysis	SAS, GLIM
Analysis of variance/covariance	SPSS, GLIM
Analysis of proportions	PLUM, ECTA
Survival analysis	SPSS, ?
Event History Analysis	?

Given the **Research Collaborator** model outlined above, it will be important for the Development Programme to explore the range of statistical software potentially available for the analysis of NCDS data and their specific data requirements. It will be necessary to ensure that data can be extracted from the NCDS data base in an appropriate format an entered into the software package. It will also be important to ensure that the computer hardware available to the **Research Collaborators** and the **Core Team** can support the chosen software and that sufficient data storage is available for the potentially large NCDS data sets.

OTHER ISSUES

There are a number of other issues which will need to be explored in the course of the Development Programme. Examples are listed in Table 23.

Table 23   Other issues to be explored during the Development Programme

Issue	Comment
Feedback:	
Respondents	Important to keep them informed!
Media/general public	Help tracing, publicise results
Academic	Important to plan publication
Record storage	
Paper/fiche/computer	Shortage of space - all on fiche?
Maintaining/storing	All in one place? Collaborators?
Other cohorts	Need to improve collaboration?
NCDS User Support	Long-term provison needed?
Access to NCDS data	
ESRC Data Archive	New data available a.s.a.p.
Research data sets	Who provides?
Teaching data sets	Need to build on current activity
Interactive access - Quantime	The future for access & analysis?
Personnel (research/DP/stats/admin)	What blend?
Access to records	Need to negotiate?
Access to services/help:	
Telephone time/equipment	Will BT give cheap/free?
Postcoding of addresses,etc	Will PO give cheap/free?
Medical examinations/records	Will BMA/RCGP endorse?

These issues are explored in more detail below.

Feedback

* How should NCDS results be reported?

One of the common criticisms of longitudinal studies like NCDS is that they are slow to report the results of the major surveys. Whilst this may be argued to be unfair, given the publication record of NCDS, it will be important for the Development Programme to consider how the Study will be reported in the foreseeable future.

Over the years efforts have been made to keep those who provide information, and especially the members of the NCDS cohort, informed about progress and future plans for the Study. These efforts have included the mailing of copies of Sunday newspaper colour supplements featuring NCDS, the distribution of a speccially prepared booklet during the 1981 survey, and information included with the annual birthday card mailing. Efforts at 'feedback have also included the provision of reprints of published papers to local authorities who helped with data collection and survey organisation. The Development Programme will need to consider how such feedback might best be achieved in the future.

It will also need to consider the role of the media, both in assisting the tracing of respondents and in reporting results, and explore whether the publication of findings should be planned or left to ad hoc arrangement (see Table 24).

Table 24 Feedback on the findings of NCDS

Audience	Method
Respondents	Special booklets Birthday card Meetings
Media/general public	Tracing appeals Newspaper/magazine exclusives Prepared 'features' Book giving a popular account
Academic	Working paper series Special NCDS conferences/seminars Contributions to relevant conferences/seminars Journal papers Book of collected papers

Record storage

* What arrangements need to be made to ensure the secure storage of NCDS records?

The volume of paper which records the data collected and the process of collection, analysis and reporting is already substantial and relatively expensive to store. A relatively small, but important, fraction (the completed questionnaires for the surveys in 1958, 1965 and 1969) has been transferred to microfiche and further work is currently under way to ensure that the coding frames and other documentation of NCDS data are also stored on this medium. The completed questionnaires for the 1974 and 1981 follow-ups and the 1978 survey of exam results alone consist of nearly 2.5 million pages of information and occupy over 30 cabinets of hanging-files, whilst associated documentation, and the survey instruments relating to other ad hoc surveys of the NCDS cohort, occupy a further two dozen filing cabinets, etc.

A further data collection exercise is likely to significantly add to the storage problem and the Development Programme will need to explore how this may be minimised. The transfer of all current and future records to microfiche would certainly be one answer. However, this would be a major undertaking and there would need to be careful consideration given to how this might be best achieved, and especially to the relative merits of employing a specialist agency or arranging for the work to be undertaken within SSRU.

Careful consideration will also need to be given to the secure storage of the records of any **supplementary** data collection exercises undertaken by the **Research Collaborators.**

Other cohorts

Need to improve collaboration?

* What can be learned from the experience of other longitudinal studies and, in particular, how can collaboration between the GB cohort studies (NCDS, NSHD and CHES) be improved?

Large scale longitudinal studies are undoubtedly rare but there are a number, especially in the US as well as GB, from which lessons may be learnt for future surveys of NCDS. There are obvious parallels with the 1946 GB cohort (NSHD) and it is important that the Development Programme examines the data collection, survey management and data management strategy for NCDS in the light of the experience gained during the early adult phase of this study.

However, it is also important that account is also taken of the experience of other major longitudinal studies in this country and in the US, such as the National Longitudinal Survey of Labor Market Experience (NLS) and the Panel Study of Income Dynamics (PSID).

There will also be a need for the Development Programme to seek ways in which a greater collaboration between the three GB national birth cohorts can be promoted.

NCDS User Support

*   What provision for helping users of NCDS data is needed?

The NCDS User Support Group has been funded for two years (until April 1987) by the ESRC in order to promote and faciltate the use of NCDS data for both research and teaching. In order to accomplish this USG has been involved in a number of activities to inform and help existing and potential users and to improve the quality and documentation of the data (see Table 25).

By April 1987 much will have been achieved to improve the quality and documentation of the data. However, it is important to recognise that the task of maintaining the NCDS data base is not finite. There is a continuing need to correct errors identified by users and to add derived variables created by users. There is also a continuing need to provide advice on the use and analysis of NCDS data.

During the Development Programme there will be a need to ensure that there is staff time available for these purposes and it will be important that consideration is given to the best way to provide such a service in the long term

Table 25 Activities of the NCDS User Support Group

USG Task	Activity
Promote use of NCDS data for research	Organise NCDS seminars/ workshops; Attend appropriate seminars/ workshops; Maintain working paper series; Circulate newsletter; Provide advice on data available, analysis and interpretation of data Provide data to ESRC Data Archive Supply data to users where this is not possible for Archive
Promote use of NCDS data for teaching	Provide advice on data available, Prepare data sets to specification of user Provide documentation
Improve quality of data	Maintain & update NCDS data base: Identify & correct data errors; Add new data (eg. derived variables, new data from ad hoc surveys, etc)
Improve documentation	Improve labels on NCDS data base; Prepare general introduction; summaries of data; & detailed coding frames;

Access to NCDS data

*   How shall access to NCDS data be organised in the future?

As noted above, a copy of the NCDS data base is lodged with the ESRC Dtata
Archive and it is to this source that potential research users are
directed inorder to obtain data (see Table 26). When the current work of
the User Support Group is completed an updated version of the data set
will be lodged with the Archive. It is also expected that the current
work on teaching data sets will culminate in the availability of
documented data sets for distribution to those interested in using NCDS
for teaching purposes (see Table 27).

Data gathered during the proposed further follow-up would also be made
available to researchers through the Data Archive. It is important that
the impact of this is considered in consltation with the Archive during
the the Development Programme.

Equally, the Development Programme should explore the extension of the
initiative with regard to the use of NCDS data for teaching to incorporate
elements from newly acquired data. It might also consider the provision
of NCDS data for teaching in schools.

Work is currently under way in the User Support Group, in collaboration
with the software company Quantime, to explore the potential for
interactive access to the NCDS data base. Such a facility would oprovide
at least an opportunity for potential NCDS users to assess the value of
the data set for their needs ,for example, by examining frequency
distributions and potential derived variables, and sample sizes. At best,
as software is developed, it may provide the opportunity for rapid data
analysis. It is important that the Development Programme explore the cost
and potential of this facility further.

Table 26   NCDS data available for secondary analysis through the ESRC
           Data Archive at the University of Essex

Year	Survey	Cohort age	Survey instrument/Other data
	Major surveys;		
1958	Perinatal Mortality Survey	Birth	Selection of original birth data which are 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 as supplied by schools and colleges 300 summary measures of exam performance
1981	NCDS4 (Fourth follow-up)	23	Interview survey Summary measures derived during primary & secondary analysis by NCB & others Area data from 1971 & 1981 Census
	Sub-studies:		
1976	Handicapped school leavers	18	Interview survey
1978	Random sample (Feasibility study)	20	Interview survey
1978	Smoking survey	20	Self-completion questionnaire

Table 27 NCDS teaching data sets

Eight teaching data sets have been created to date and one other is in preparation. These have been made available to those listed below and represent a first attempt to meet specifications prepared by those indicated in bold type:

1.	**Arthur Renshaw**	**City University**
	Henry Wynn	City University
	Hilary Winchester	Plymouth Polytechnic
	Stuart Toole	Birmingham Polytechnic (In preparation)
2.	**Myfanwy Morgan**	**St Thomas's Hospital Medical School**
3.	**Jenny Head**	**UCL & Middlesex Hospital Medical School**
	Hazel Inskip	**London School of Hygiene**
	Dave Leon	London School of Hygiene
4.	**Mike Murphy**	**London School of Economics**
	Heather Joshi	**London School of Hygiene**
5.	**Jennifer Waterton**	**Survey Methods Centre, SCPR**
6.	**Steve Miller**	**City University**
	James Hampton	City University
7.	**Gill Jones**	**Surrey University**
8.	**Sarah Curtis**	**Queen Mary College** (In preparation)
9.	**Cathie Marsh**	**Cambridge University**

In two instances specifications were combined to produce a single teaching data set.

NCDS Core Team Personnel

*   What blend of research, data processing, statistical and
    administrative staff will be required in the **NCDS Core Team**?

Typically, a major survey of the NCDS cohort has required a sizeable team
of research, data processing, statistical and administrative staff based
at NCB in addition to those retained as interviewers or subcontractors,
etc. Table 28 gives an indication of the gross picture for the 1981
follow-up.

The NCDS **Core Team** described above will be composed of far fewer people
to the extent that specific tasks are undertaken by the **Research
Collaborators**. Although the general lines of responsibility between the
two groups have been discussed, and are indicated above, it will be
important for the detailed arrangements to be negotiated during the
Development Programme. Only then can a realistic assessment be made of
the size and composition of the NCDS **Core Team**.

Table 28 NCDS team for the 1981 follow-up (NCDS4)

Team member	Number
RESEARCH STAFF	
Assistant Director (Research)	Part
Senior/Principal Research Officer	1
Senior Research Officer	1
Research Officer	3
Research Assistant	2
DATA PROCESSING STAFF	
Senior Programmer	1
Programmer	1
Assistant Programmer	1
STATISTICS STAFF	
Principal Statistician	Part
Statistician	2
ADMINISTRATIVE STAFF	
Administrative Assistant	1
Secretary	1
Temporary tracing/coding staff	Hundreds of hours

Access to records

* Will access to 'records' be given to NCDS?

The discussion of **Sources of information** above identified a number of
organisations who maintain records relating to various aspects of the life
of the NCDS subject and other potential respondents. Clearly, any
consideration of the use of these 'records' as potential sources of
information for future NCDS surveys needs to balance a number of practical
considerations (eg. availability and cost, nature and quality of data,
ease of access and linkage to NCDS, etc) against the less tangible
concerns with the longer-term future of the Study and the ethics of record
linkage, the impact on public opinion, and the reaction of cohort members
(see Table 29).

These issues must be an important element of the Development Programme.
However, a vital the vital first steps must be to clarify which 'records'
are relevant and whether access to these can be obtained at all.

Table 29 Issues concerning the use of 'records'

Issue	Problem
Availability and cost	What 'records' can NCDS access/afford?
Nature and quality of data	Form suitable for NCDS/analysis?
Ease of access and linkage to NCDS	Reliance on clerical effort problematic
Issues of confidentiality, ethics, public relations, etc	Impact on respndents?

Access to services and/or help

* What services and/or help are available to NCDS?

The birth survey in 1958 and the subsequent NCDS follow-ups throughout childhood (1965, 1969 and 1974) would not have been possible without the active help provided through the NHS, LEAs, etc. An important element of the Development Programme will be to explore the nature and extent of assistance which might be available at any and all stages of data collection, survey management and data management. See Table 30 for some eaxmples.

Table 30 Services or help available to NCDS

Service/help	Comment
DATA COLLECTION	
Telephone time/equipment	BT give cheap/free?
Postcoding of addresses,etc	PO give cheap/free?
Medical examinations/records	BMA/RCGP endorse?
SURVEY MANGEMENT/DATA MANGEMENT	
Computer software/hardware	Industry give cheap/free?

TIMETABLE

As indicated above, it is anticipated that the Development Programme will take about 18 months to complete. A draft timetable for that year and a half is presented below.

Draft timetable for the Development Programme

Month	Activity		
1	Meeting of all collaborators	) Plan & design alternative	
2		) strategies for data collection,	
3	Meeting of co-ordinators	) survey mangement & data manage-	
4		) ment	
5	Meeting of co-ordinators	)	) Implement alternative
6		)	) strategies to aid
7	Meeting of all collaborators		) assessment of alternative
8			) strategies
9	Meeting of co-ordinators		)
10			)
11	Meeting of co-ordinators		)
12			)) Assess alternative
13	Meeting of all collaborators		)) strategies
14			))
15	Meeting of co-ordinators		))
16			))
17	Meeting of co-ordinators		)
18	Meeting of all collaborators	DECISION ON STRATEGIES	

A crucial element will be the meetings with the **Research Collaborators.** As the timetable shows, it is planned that the majority of such meetings will be open only to the **Co-ordinators** who are responsible for each of the **Research Themes** (see above). However, there will be meetings to which all **Collaborators** are invited. These will be held at critical points in the Development Programme and at least every 6 months.

STAFFING

The proposed Development Programme has 3 elements:

I **Consultation with research collaborators** and others with
relevant and expertise in longitudinal studies, data collection,
survey management and data management.

II **Pilot studies** of alternative approaches to data collection,
survey management and data management in order to identify the
most practicable strategy for NCDS in the future.

III **Continuation of some of the activities of the User Support
Group** to update and maintain the NCDS data base, provide advice
to those using the data for research and teaching and facilitate
the continuation of the NCDS Working Paper series and the NCDS
Newsletter.

The staffing required for these elements comprises 4 people:

* One **Senior Research Fellow** with NCDS experience to take day to
day charge of the Programme

* One **Senior Research Fellow/Research Fellow** with data processing
experience to help with the DP elements of I, II and III

* One **Research Assistant** to help particularly with elements I and
III

* One **Secretary/Administrative Assistant** to provide secretarial
help to the Programme as a whole, and assist with advising users
and preparing Working Papers and the NCDS Newsletter.

In addition, provision will need to be made for the employment of
specialist consultants in the fields of:

* Data collection, survey management and data management.

* Data processing

REFERENCES

FREY, J H (1983) Survey research by telephone (Sage).

FOGELMAN, K R (Ed) (1983) Growing Up in Great Britain: Collected papers from the National Child Development Study (Macmillan)

FOGELMAN, K R (1985) NCDS User Support Group ESRC Data Archive Bulletin 32 (September) pp 6-7

NATIONAL CHILDREN'S BUREAU (1978) The future of the National Child Development Study: Report on a feasibility Study (Unpublished final project report to the Department of the Environment)

NATIONAL CHILD DEVELOPMENT STUDY USER SUPPORT GROUP (1986) Future directions of the National Child Development Study (NCDS): Outline structure after discussions with British Academics (Available from NCDS User Support Group)

SHEPHERD, P M (1985) The National Child Development Study: An introduction to the background to the Study and the methods of data collection NCDS User Support Group Working Paper No. 1

1. **NCDS member**

   (a) economic activity

        i)   economic activity since school (incl. occupation and
                industry
        ii)   training and education since school
        iii)   earnings
        iv)   household income

   (b) housing

        i)   household formation
        ii)   housing history
        iii)   housing aspirations
        iv)   influences on inter-tenural movement
        v)   housing costs

   (c) family formation and breakdown

        i)   cohabitations
        ii)   marriages
        iii)   separations/divorces
        iv)   reasons for changes
        v)   future marriage plans

   (d) geography

        i)   location
        ii)   migration history
        iii)   reasons for moves
        iv)   environment (quality of)

   (e) fertility history (women only?)

        i)   number and timing of children
        ii)   future child bearing plans (childlessness)
        iii)   lone parenthood
        iv)   contraceptive history

   (f) reproductive performance (women only?)

        i)   pregnancy histories
        ii)   delivery histories
        iii)   birth outcomes (eg birthweight)
        iv)   infant survival

Preliminary list of topics to be included in NCDS5 Core Survey (continued)

(g) health

  i)   psychiatric disorders
  ii)   psychosocial functioning
  iii) hospital admissions
  iv) GP consultations
  v)   chronic illness
  vi) disabilities
  vii) inherited conditions
  viii) height and weight
  ix) accidents
  x)   specific medical conditions

(h) health behaviour

  i)   smoking history
  ii)   alcohol history
  iii) drugs history
  iv) diet?
  v)   exercise?

(j) health knowledge (prevention, services, treatment)

  i)   child health
  ii)   adult health
  iii) health of the elderly

(k) parenting (behaviour, attitudes and aspirations

  i)   education
  ii)   health
  iii) social
  iv) child care arrangements

(l) social networks

  i)   household structures
  ii)   family networks
  iii) community involvement
  iv) division of labour in household
  v)   financial control in household

(m) criminal records

(n) net worth

  i)   savings
  ii)   investment
  iii) indebtedness

Preliminary list of topics to be included in NCDS5 Core Survey (continued)

2. **Parents of cohort member**
      (sex, names and dates of birth)

      (a) survival
      (b) death when and fom what cause
      (c) marriage dissolution
      (d) location
      (e) economic activity
      (f) relationship with
            (contact, financial, caring)
      (g) future expectations

3. **Partners**
      (sex, names and dates of birth)

      (a) economic activity
      (b) ethnic origin
      (c) social background
      (d) physical characteristics
      (e) childhood and current health
      (f) education
      (g) marriage history
      (h) housing history prior to marriage/cohabitation

4. **Current partner's parents**
      (sex, names and dates of birth)

      (a) survival
      (b) death when and fom what cause
      (c) marriage dissolution
      (d) location
      (e) economic activity
      (f) relationship with
            (contact, financial, caring)
      (g) future expectations

5. **Children**
      (sexes, names, dates of birth)

      (a) type (natural, adopted, step, half)
      (b) physical development
      (c) health history
      (d) education
      (e) behaviour
      (f) mental health