Data Note 2

Pregnancy Histories in the Combined NCDS/BCS70 1999/2000 Data

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CLS COHORT STUDIES

DATA NOTE 2

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Introduction

This document has been prepared to accompany the second deposit, with the UK Data Archive at the University of Essex, of data from the most recent follow-ups of two continuing, multidisciplinary, national, longitudinal studies – the National Child Development Study (NCDS) and the 1970 British Cohort Study (BCS70). The follow-ups took place between November 1999 and September 2000, and it is noteworthy that this was the first time that both cohorts had been surveyed at the same time. They were designed and implemented jointly by the Centre for Longitudinal Studies of the Institute of Education, University of London (CLS), and the National Centre for Social Research (NatCen), on behalf of the Joint Centre for Longitudinal Research. The work was mainly funded by the Economic and Social Research Council (ESRC), but important contributions were also made by a number of government departments, and by the Basic Skills Agency.

NCDS and BCS70

The National Child Development Study (NCDS) started life as the Perinatal Mortality Survey and examined the social and obstetric factors associated with stillbirth and infant mortality among over 17,000 babies born in Britain in the week 3-9 March 1958. Since this first study the whole cohort have been surveyed on five other occasions in order to monitor their health, education, social and economic circumstances. These surveys were carried out in 1965 (age 7), 1969 (age 11), 1974 (age 16), 1981 (age 23) and 1991 (age 33). As part of the 1991 survey, a special study was also undertaken of the children of one third of the cohort members, including assessments of the behaviour and cognitive development of approximately 5,000 children. There have also been surveys of sub-samples of the cohort, the recent occurring in 1996 (age 37) when information was collected on the basic skills of a representative sample of 10 per cent of cohort members.

The 1970 British Cohort Study (BCS70) was designed along similar lines to the NCDS, surveying over 17,000 babies born in Britain in the week 5-11 April 1970. Since the birth survey there have been four other major data collection exercises in order to monitor their health, education, social and economic circumstances. These were carried out in 1975 (age 5), 1980 (age 10), 1986 (age 16) and 1996 (age 26). As in NCDS, sub-samples have been studied at various ages: for example at age 21, paralleling the NCDS survey at age 37, a 10 per cent representative sample was assessed for basic skills difficulties.

From their original focus on the circumstances and outcomes of birth, the two cohort studies have broadened in scope to map all aspects of health, education and social development of their subjects as they passed through childhood and adolescence. In later sweeps, the information collected has covered their transitions into adult life, including leaving full-time education, entering the labour market, setting up independent homes, forming partnerships and becoming parents.

The latest rounds of data collection for NCDS and BCS70 took place in 1999/2000 when NCDS cohort members were aged 41/42 and BCS70 cohort members were aged
The main aim of these most recent surveys was to explore the factors central to the formation and maintenance of adult identity in each of the following domains:

- Lifelong learning
- Relationships, parenting and housing
- Employment and income
- Health and health behaviour
- Citizenship and values

**Cohort Studies User Support Group**

This provides advice and guidance on the use of Cohort Studies data; produces documentation; collates and disseminates information on uses of the data, publications, and other developments; produces and distributes a newsletter and working papers; provides access to non-computerised Cohort Studies data; and collects additional information.

**Contacting the User Support Group**

The User Support Group can be contacted by post, 'phone, fax, or email as shown below:

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Background to problem with pregnancy history variables

There are 29 variables relating to each baby ever carried, and 10 others relating to each pregnancy. These variables are structured in such a way as to accommodate 8 possible pregnancies, with up to 5 babies born as a result of each. So each of the 29 ‘baby’ variables are replicated forty times (e.g. birth/termination date prege, prege2, prege3,…, prege40), and each of the ten ‘pregnancy’ variables are replicated eight times (e.g. number of babies carried pregnum, pregnum2,… , pregnum8).

The convention is that the most recent pregnancy is entered first, and the others follow in reverse chronological order. For example the variable prege refers to the date of birth (or other outcome) of the 1st or only baby resulting from the most recent pregnancy, the variables prege2-prege5 would refer to any other babies from that same (multiple-birth) pregnancy; then prege6 refers to a baby resulting from the second most recent pregnancy, prege11 from the third most recent,… etc. We use the terminology ‘outcome date’ rather than birth date, as in the case of non-livebirths, the date of miscarriage/stillbirth/abortion is entered.

An apparent error in the setting up of the CAPI instrument for data collection, or a misunderstanding of the nature of the ‘number of babies carried’ question resulted in the following unforeseen problems:

(A) In a number of both NCDS and BCS70 cases, babies from separate pregnancies were entered as if they were part of a multiple birth: their outcome dates, though clearly more than 9 months apart, were entered, for example, as prege, prege2, prege3,… etc., instead of prege, prege6, prege11,… etc. In these cases the variable pregnum (or in some cases pregnum2-8) appears to have been filled in incorrectly, probably as a result of construing the question ‘how many babies were carried during this pregnancy?’ erroneously as ‘how many babies have you ever carried?’ This pregnum error is probably what caused the automatic CAPI routing to bunch these babies wrongly. See Appendix 1 for a listing of these cases.

(B) Furthermore, in most of these cases, the outcome dates were also in the wrong order, with the oldest first, and the most recent last, or even an irregular order. See Appendix 2.

(C) This reversal or disruption of chronological order also occurred in a number of other cases where there was otherwise no confusion between single and multiple pregnancies. See Appendix 3.

(D) In the case of NCDS respondents, the intention was only to update pregnancy history information since the last full NCDS sweep (NCDS5, 1991), and so the CAPI instrument was set up to enquire about all pregnancies since March 1991. However, for many cases a complete pregnancy history seems to have been entered, with dates prior to March 1991 included. See Appendix 4.

In trying to correct the above errors systematically, a number of factors introduced complications:
(i) In the case of babies wrongly bunched together in the same pregnancy, it is possible in most cases to re-arrange the 29 ‘baby’ variables correctly, with no loss of information. But the same does not apply to most of the 10 ‘pregnancy’ variables. For instance, where three babies from distinct pregnancies have been bunched as though they were a multiple birth, only one set of ‘pregnancy’ variables has been completed. So once the three babies are correctly separated into three distinct pregnancies, there is no way of telling which of these three the questions relate to (e.g. “did you smoke during this pregnancy?”). The two exceptions are pregun (‘How many babies did you carry in this pregnancy?’) and morepreg (‘Have there been other pregnancies before this one?’), which can be re-calculated logically by machine algorithm. A decision was therefore taken during this data cleaning exercise to copy the same pregnancy details into each of the now-separated pregnancy slots, but care should of course be taken when analysing these cases (see list at Appendix 1).

(ii) In the case of all pregnancies not resulting in a live birth, although the date of stillbirth/miscarriage/abortion is still required, only the month and year were asked. The ‘day’ variable (preged, preged2-40) remains system-missing, and consequently the composite date variable prege (prege2-40) also remains system-missing.

(iii) In the case of respondents who were still pregnant at the interview date, no outcome date could be entered, but one would obviously expect the data to be entered in the first (i.e. most recent) birth slot. However, there are cases where the ongoing pregnancy has been entered in birth slots other than the first, and indeed some where the ongoing pregnancy is featured as an apparent multiple birth with another completed pregnancy. See Appendix 5.

(iv) A number of outcome dates contain the missing values 99 or 9999 in one or more of the ‘day’, ‘month’ or ‘year’ fields (preged, pregem, pregey, etc). In these cases, the composite 8-digit date variable prege (or prege2-prege40) remains system-missing. In most cases it seems to indicate the respondent (often a single or separated male) could not remember or did not know the full birth date, but could remember the year and possibly the month (although there are odd cases such as NCDS 385037C where the respondent could apparently remember the month of birth, but not the day or year). If at least the year has been entered, we can in most cases sort out whether the pregnancy outcome has been put in the right order. But of course if the year is entered as ‘9999’, the best one can do is a manual scrutiny of any other dates to hazard a guess as to whether it is likely to be in the right order. See Appendix 6 for the results of this manual scrutiny.

(v) Some successive outcome dates seem questionable. There are many cases where two dates are more than 3 days apart, but less than nine months (see Appendix 7). In the case of miscarriages or abortions this is understandable, although some miscarriages from apparently different pregnancies are entered as being in successive months. One or two live births are separated in time by over a month, but less than eight months, which seems to indicate a data entry error. A surprisingly common feature is a miscarriage followed a few months later by a live birth, which seems to indicate twins where one miscarried, and the other went to full term. But where there is a 7- or 8-month gap it is sometimes hard to tell if perhaps the two outcomes were from different pregnancies. All cases in Appendix 7 were subjected to detailed scrutiny, looking sometimes at whether the live birth was logged as premature, or the
birth weight low, to decide whether to treat it as a separate or multiple pregnancy. The results are logged in the table attached to Appendix 7.

(v) A small number of outcome dates (all in BCS70) look as though they may have been entered erroneously, i.e. the year was before 1970 or when the CM was extraordinarily young. See Appendix 8.

(vi) A small number of respondents answered ‘Yes’ to the question ‘Have you ever been, or got anybody pregnant?’”, but gave no information about any dates or indeed whether the pregnancy went to full term. In these cases, there is no basis for attempting any re-ordering. See Appendix 9.

Algorithm for correcting the errors

Step 1

Create a vector BIRDAT, containing 40 variables, corresponding to each of the forty birth slots, using the SPSS ‘YRMDA’ function, which produces a value equal to the number of days elapsed from a fixed time-point to the date in question. This allows all outcome dates to be compared chronologically, except for cases mentioned in paras (ii)-(vi) above, where there is an incomplete, missing or dubious date.

Step 2

In the case of incomplete dates where at least a valid year has been entered, assign a value for BIRDATn by imputing ‘15’ for a missing day, and ‘6’ for a missing month. Although this might result in two successive outcome dates appearing to be less than nine months apart, it should, to all intents and purposes, be impossible for them to get into the wrong order as a result of the imputation (for another outcome with a specified date to happen in the same year, the other event would have to be in the first three months or the last three months of the year, except in the rare case of a spontaneous miscarriage of one child from a multiple pregnancy). It should be noted that this imputation is only a temporary device for ordering the birth slot data correctly. The values of the actual outcome date variables (prege-40, preged-40, pregem-40, pregey-40) are not altered.

Step 3

In the case of ongoing pregnancies, assign a value for BIRDATn by imputing the date 30th September 2000. As all interviews had been completed by this date, it would be impossible for there to be a subsequent outcome, ensuring the ongoing pregnancy would be placed as ‘most recent’ in the corrected ordering. There were some ongoing pregnancies where two birthslots had been filled in, but one can assume these were cases where it was already known the mother was expecting twins (see Appendix 5). The imputation in these cases would result in two identical outcome dates of 30/9/2000, which would correctly enable them to be flagged up as twins under Step 7 below.
Step 4

Identify cases where any outcome date has the year entered as ‘9999’ (birth year not known/not answered). In these cases, there is no sound basis for imputation, and it is impossible to determine by machine algorithm what order to place that baby in. These cohort members are therefore flagged to be examined on a case-by-case basis. See Appendix 6.

Cohort members with no outcome data are also flagged to be by-passed (see (vi) above, and Appendix 9).

Step 5

Excepting cases eliminated in step 4, flag up all cases where outcomes more than nine months apart have been bunched in adjacent birth slots as though they were part of one pregnancy, and cases where outcomes have been entered in the wrong chronological order (i.e. not putting the most recent pregnancy first).

Step 6

Set up a variable TOTBABY to log which birth slots contain any data at all (i.e. any outcome date, even if entered as ‘9999’, or any outcome code (e.g. livebirth, miscarriage, even if entered as ‘9’), so that we have a check, after the re-ordering process, to ensure no baby was missed out.

Step 7

Implement an iterative procedure to compare all forty possible outcome dates (BIRDAT1-40), producing up to eight ‘KEY’ variables indicating which of the forty slots was the most recent date found (KEY1), the next most recent (KEY2), and so on. For instance, if the third most recent event was found in slot 7 of the forty, KEY3 would be assigned the value 7. We know from a cursory analysis that only one 1999/2000 cohort member ever carried more than eight babies (BCS70 15610009), and a manual analysis confirmed that case had all its pregnancy history data correctly ordered, so it was bypassed by this algorithm.

Step 8

Using this information, compare each successfully-ordered birth date with the adjacent one, to flag up all cases with true multiple births (i.e. births on same day or at least within 3 days), and all cases with a dubious multiple birth (i.e. more than 3 days, but less than nine months apart). As with Step 4, the intention is to look at these manually on a case-by-case basis.
**Step 9**

Having excluded from the algorithm all cases flagged in Steps 4 and 7, prepare to re-order all cases flagged in step 5 as having been wrongly bunched together in the same pregnancy, or wrongly ordered chronologically.

The re-ordering not only has to move each outcome date to a new slot, but also every one of the 29 variables associated with that particular baby (birth weight, outcome, etc), as well as the 10 variables associated with that particular pregnancy (number of babies in pregnancy, whether smoked, whether used contraception, etc). In particular, the corresponding **pregnum** is set to a value of 1, indicating a single, not multiple birth. As documented above, once a bogus ‘multiple’ pregnancy is separated out into two or more single-baby pregnancies it is unfortunately not possible to tell which of these pregnancies these latter variables (smoking/contraception, etc) relate to. A decision was made to copy the same pregnancy data into each of the new pregnancy slots; users should therefore be careful in the way these data are interpreted. The cases affected are all those listed in **Appendix 1**.

A dummy set of variables in vector format of length 40 is set up so that all the 29 ‘baby’ variables can be copied and indexed by the slot in which they erroneously appeared.

Having been first copied to the dummy vectors, the original 29 variables are set to the system-missing value in each of the 40 slots.

Similarly, dummy vectors of length 8 are set up for the ten ‘pregnancy’ variables; the data are copied from the original variables, which are then set to system-missing.

**Step 10**

Complete the re-ordering process. Copy the data for the most recent baby into the ‘slot 1’ versions of all 29 variables, applying the **KEY1** variable from Step 6 as the index for the vector; then copy the data for the next most recent into the ‘slot 6’ versions by applying **KEY2** etc., then ‘slot 11’ by applying **KEY3**, etc. until all babies carried have been accounted for.

We know that all such pregnancies are single outcomes, as the multiples and dubious cases have been excluded from the algorithm. So the pregnancy variables in slots 2-5, 6-10, 12-15, … etc are bound to remain system-missing. It should be noted that for these cases the re-ordering addresses both problems outlined in (A)-(C) above (i.e. the ‘bunching’ as well as the ‘out-of-order’ problem).

Similarly, copy the data for eight of the ten ‘pregnancy’ variables into the correct positions. Of the other two, **pregnum** is set to 1 (as multiple pregnancies have been excluded) and **morepreg** is set to 1 or 2 depending on a machine-check as to whether other earlier pregnancies exist.
Step 11

Create new variable NEWTOTBY to count how many babies are represented in the newly re-arranged data, and check this is the same in total as the number of babies before re-arrangement (see Step 6).

Step 12

Having checked that no outcome data was lost, delete all NCDS outcomes earlier than March 1991, unless cohort member was not contacted at the 1991 survey (see Appendix 4).

Step 13

Do manual scrutiny of cases with any outcome years entered as ‘9999’ (see step 4), true multiple births, dubious multiple births, and those still pregnant but where that pregnancy is not placed in most recent birthslot (see step 8).

Step 14

Implement syntax for case-by-case re-ordering in the light of the manual scrutiny.

Step 15

Save SPSS system file, disposing of all the working variables created during this algorithm, and saving the altered versions of all the original variables.
Appendix 1

NCDS Cases where birth outcomes were wrongly bunched with other outcomes more than nine months apart, as though they were a multiple pregnancy.

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882021J 882051T 933019C 937020J 950123U 950168T
982053E 984024J 985067J 986100J 986250D 986431J
X10020X X25101F X32005A X41020X X60006M X66030R
X71009E X77014E X77016K X77021B X78086N X82347P
Y00078K Y01189Y Y20134D Y20154L Y30150J Y30168D
Y30169F

97 cases in total.

This does not include cases where, although less than nine months apart, outcomes have been bunched together which are almost certainly from two separate conceptions (e.g. two miscarriages seven months apart – see Appendix 7).
Appendix 1 (cont.)

BCS70 cases where birth outcomes were wrongly bunched with other outcomes more than nine months apart, as though they were a multiple pregnancy.

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152 cases in total.

This does not include cases where, although less than nine months apart, outcomes have been bunched together which are almost certainly from two separate conceptions (e.g. two miscarriages seven months apart – see Appendix 7).
Appendix 2

NCDS Cases where birth outcomes were wrongly bunched as though they were a multiple pregnancy, and also out of chronological order.

044014L 045002J 045011K 052008M 053003F 056052M 087029S 091017J 092206S 093052W 094028E 099010M 099050Z 100009C 110213J 110244V 180007A 286044X 288051R 481001R 513073R 513143L 528021D 528030C 550188U 650212V 720027P 860001C 986431J X66030R X68001X X78005R X82347P Y01189Y Y20134D Y30169F

72 cases in total.

BCS70 Cases where birth outcomes were wrongly bunched as though they were a multiple pregnancy, and also out of chronological order.

00279065 00312058 00530014 00607090 00785026 01236012 01618019 02294098 02306039 02441045 02454047 02609077 02656070 02914028 02939057 03085020 03251074 03366075 03575030 04046069 04239073 04394031 04452053 05014068 05031072 05096012 05102074 05153072 05201072 05206057 05240072 05455032 05571065 06031073 06123024 06183082 06266032 06305077 06466087 06570089 06959022 07244007 07249011 07494043 08078061 08239086 08302007 08409011 08445015 08901094 09054086 09261091 09300101 09301813 09490099 09605075 09716017 09840026 09891083 10047010 10150086 10265070 10732099 10937029 11023063 11032036 11047089 11212038 11487002 11706049 12155070 12340074 12590013 13538030 13705030 13945090 14671064 14850093 14869044 15093082 15094057 15440084 15455036 15511007 15527035 15577065 15730066 16102076 16152057 16224056 16354062 16568094 16600040 16717092 18013006 20043000 20212000

102 cases in total.
Appendix 3

NCDS Cases where birth outcomes were out of chronological order, although not wrongly bunched.

010004R 041034A 043013C 043058B 044001A 051003V
055013V 055086Z 081002N 083034N 084004J 084015P
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526007Z 529004K 55026R 550534M 561006W 581050N
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821507S 824020C 835013T 845039U 882007Q 910031N
931002Y 9400124W 950135B 950154F 950290Q 960031V
960072L 960080E 986017B 986183R 987048Q
987010P 989011A 986059Q 986117B 987048Q
987010P 989011A 982044M 982084Z 982159E 983020B
X40028K X40036J X67026F X78013Q X78079R X80013W
X82215V X82287X X82344H X84009C X87024Q X87061W
Y00164A Y00173B Y00337F Y01016W Y01018U Y01605L
Y20023U Y20055J Y20078W Y21001P Y30223K Y33089Z

149 cases in total.

BCS70 Cases where birth outcomes were out of chronological order, although not wrongly bunched.

0051056 00103002 00124030 00346088 004001A 00508088
00520038 00620015 00700040 00890995 00813019 00879028
00912021 00913042 01005054 01153062 01266041 01302060
01445068 01576049 01620094 01674076 01695003 01736099
01840000 01859054 01870029 01945054 01949055 01993085
02051012 02126037 02207037 02252042 02478000 02753003
02830002 02896011 02904052 02930080 03121039 03134041
03178047 03279000 03325095 03349048 03379077 03403069
03418021 03520221 03556053 03579031 03600098 03621025
03691059 03735080 03745056 03768052 03793010 03786036
03795037 03880463 03890393 03926033 03956062 03982090
Appendix 3 (cont.)

03997042 04139096 04177050 04361077 04474056 04486083
04498009 05098079 05137023 05227024 05236025 05249027
05313024 05325051 05369057 05425028 05486061 05506028
05531081 05598079 05619027 05661087 05671063 05721207
05749013 05832088 05895071 05910062 05927065 06028023
06057077 06139087 06173005 06195008 06196084 06198034
06226027 06299087 06313002 06393012 06394088 06458061
06467062 06471087 06481063 06507082 06548062 06607059
06612059 06691094 06791071 06880097 06903090 06908066
06982024 06992000 06998052 07019000 07061080 07149006
07191086 07194011 07211053 07326083 07338009 07339037
07391040 08006077 08033080 08039031 08052057 08086092
08086086 08163086 08460092 08467062 10141036 10194032
09725073 10822000 10868056 10927053 10927053 10927053
11130066 11195096 11290032 11290032 12074070 12074070
12124066 12394054 12394054 12394054 12394054 12394054
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13740059 13740059 13740059 13740059 13740059 13740059
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14924040 14924040 14924040 14924040 14924040 14924040
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17267065 17267065 17267065 17267065 17267065 17267065
17456068 17456068 17456068 17456068 17456068 17456068
20322000 20322000 20322000 20322000 20322000 20322000
21740000 21740000 21740000 21740000 21740000 21740000

283 cases in total.
In addition, the following 12 cases had all their dates in chronological order, with no birth outcomes bunched together (and no ‘true’ multiple births) but nevertheless had no data in the first birth slot (i.e. the data were in slots 6, 11, 16, ... etc); so all data had to be pushed back, slot 6 being transferred to slot 1, slot 11 to slot 6, ... etc.

01001053 02182094 03257097 03310042 05984097 09763027 10788031 14101044 14574012 15013072 17015079 20432000
(Case 08052057 also had no data in the first birth slot, but is listed separately in Appx. 6 and Appx.7 because of other complications)
### Appendix 4

**NCDS Cases where birth outcomes prior to March 1991 were recorded, but where cohort member was interviewed at 1991 survey.**

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309 cases in total.

The following had pre-March 1991 pregnancy history data recorded, but they were *not* interviewed at the NCDS5 survey, and so it was correct in those cases to leave that information in the data:

60 cases in total.
Appendix 5

NCDS cases where there was an ongoing pregnancy, but data out of order (i.e. not entered in first slot), or pregnancy was wrongly bunched with another outcome as an apparent multiple.

055086Z 081002N 436010M 501009P 620087A 910031N
X33020B X40036J

[Cases 781048S and 986275W had two ‘still pregnant’ entries, presumably indicating it was already known to be twins. No alteration necessary].

BCS70 cases where there was an ongoing pregnancy, but data out of order (i.e. not entered in first slot), or pregnancy was wrongly bunched with another outcome as an apparent multiple.

The following 52 cases had the ongoing pregnancy not entered in the first birth-slot, and so had to be re-ordered:

00312058 00463092 00785026 01266041 01870029 02126037
02609097 02765030 03191073 03403069 03575030 03786036
03926033 04139096 04452053 04486083 05425028 05749013
05895028 06691094 07020000 08281065 08388069 09027083
09054086 09393047 10393100 10463071 10657050 10868056
10921001 11059015 11414043 11937007 12124066 13074048
13538030 13705030 13741034 14249028 14644061 14924040
14989074 15094057 16093060 16630040 16809043 16860023
17373017 17456068 20097000

The following 7 cases had the data for the ongoing pregnancy correctly entered in the first slot, but other birth outcomes were wrongly bunched in the same pregnancy (i.e. in slots 2, 3, ... etc):

01592000 06896024 09516017 13762136 14228000 14381008
16027027

The following five cases had two ‘still pregnant’ entries, presumably indicating it was already known to be twins, so they were not altered:

00060057 05435004 07460007 10531069 12278025

One ongoing pregnancy was correctly entered in the first slot, with a miscarriage in slot 2. However, the miscarriage was sufficiently recent for it to be plausible that it was from the same pregnancy, so this was not altered:

10723098
Appendix 6.

NCDS cases where one or more outcomes had year entered as ‘9999’, so that chronological order could not be easily ascertained.

We looked at dates of other outcomes: where there were at least two other proper dates entered, we could guess whether the whole lot were put in the wrong order or were wrongly bunched. Sometimes it was possible to get information from the type of outcome. Summary of types:-

(a) No bunching, order seems correct based on at least two other dates entered (or where one other date/type of outcome makes it clear, e.g. ‘still pregnant’). Leave as is.

(b) No bunching, and no way of telling if order correct. Leave as is.

(c) Bunched in same pregnancy as another, but no way of telling if bunching is correct (otherwise chronological order seen to be correct from at least two other dates). Leave as is.

(d) Bunched in same pregnancy as another, but no way of telling if bunching is correct (also no way of telling if chronological order is correct). Leave as is.

(e) Only one baby ever carried, so no question about bunching or order. Leave as is.

(f) Miscellaneous complex cases where no choice but to leave as is. See comment.

(g) No bunching, but order incorrect on at least two other dates (or where one other date is so late as to leave no room). Reverse order.

(h) Bunching, with 2 or more others which should clearly not be bunched because >9 months apart (but correct chronol. order). Spread to slots 1,6,11, etc.

(i) Bunching, with 2 or more others which should clearly not be bunched because >9 months apart (and chronol. order wrong as well). Reverse order and spread to slots 1,6,11, etc.

(k) Bunching, with one other specific date, both live births. Assume order correct but should be two different pregnancies. Spread to slots 1,6.

(l) Miscellaneous complex cases needing alteration.

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<td>Other pre-March 1991 birth event deleted.</td>
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One baby only. Outcome coded as '8' (don't know)

2 '9999' dates bunched, (assume correctly), but order of pregnancies reversed

one live birth (pre-1991). 6 other '9999' dates have outcome='9' and no other data to go on. As live birth is pre-1991, delete that and leave others.

One stillbirth, two double-stillbirths, all dates '9999'. 2 other live births

one other pregnancy is still ongoing, so order must be correct.

miscarriage at date '9999', bunched with live birth. Leave as is.

Two dates '9999' (outcome='9') bunched with pre-March 91 live birth. Delete live birth, leave others.

Birthslot 1 was pre-March 91, slots 6 & 11 '9999'. Delete slot 1, move 6 & 11 to 1 and 6 respec.

Two miscarriages, both dates '9999' bunched together. Leave as is.
BCS70 cases where one or more outcomes had year entered as ‘9999’, so that chronological order could not be easily ascertained.

For key to types of situation, see NCDS table above.

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changed No data in 'most recent' pregnancy. Move other 3 along one slot, reversing slots 7, 6.
changed Slots 1 and 11 both '9999', but slot 6 empty. Move 11 to 6.
Reverse order of the three birth events
changed Two of the other four outcomes out of order, so swap them, leave rest.
changed Two of the other four outcomes out of order, so swap them, leave rest.
Appendix 7.

NCDS cases where two birth outcomes are separated by more than three days, but less than 9 months.

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<td>Y31043N</td>
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</tbody>
</table>

133 cases in total.

On manual scrutiny, 62 of these were plausible, e.g. two miscarriages seven months apart, listed in separate pregnancies.

However, the following 71 cases were problematic in some way or other. The middle column contains a ‘C’ if the case record was changed by this cleaning exercise.

<table>
<thead>
<tr>
<th>serial</th>
<th>Ch?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>041001K</td>
<td></td>
<td>Miscarriage 1992 (no month), abortion July 92, in same pregnancy. Assume OK.</td>
</tr>
<tr>
<td>044001A</td>
<td></td>
<td>Double miscarriage, with single miscarriage &amp; three other livebirths in wrong order</td>
</tr>
<tr>
<td>055086Z</td>
<td></td>
<td>Live birth with miscarriage 6 months later (i.e. OK), also still pregnant, but order wrong</td>
</tr>
<tr>
<td>083034N</td>
<td></td>
<td>Two live births 2 weeks apart, different pregnancies, &amp; order wrong. Move to same pregnancy</td>
</tr>
<tr>
<td>084004J</td>
<td></td>
<td>Chronological order completely confused</td>
</tr>
<tr>
<td>094029H</td>
<td></td>
<td>Two live births a month apart, and wrong order, but both pre-1991 anyway, so delete.</td>
</tr>
<tr>
<td>095006Z</td>
<td></td>
<td>Two live births a fortnight apart, placed in separate pregnancies. Move to same preg.</td>
</tr>
<tr>
<td>095023Z</td>
<td></td>
<td>Stillbirth eight days after live birth. OK, but order wrong</td>
</tr>
<tr>
<td>100023W</td>
<td></td>
<td>Miscarriage, then live birth 6 months later, same pregnancy. Assume OK.</td>
</tr>
<tr>
<td>110304M</td>
<td></td>
<td>Two miscarriages 4 months apart, separate pregnancies. Assume OK, but order is wrong</td>
</tr>
<tr>
<td>120132Q</td>
<td></td>
<td>Order wrong, involving stillbirth and live birth and one separate pregnancy.</td>
</tr>
</tbody>
</table>
181038T  C Miscarriage, then live birth 7 months later, same pregnancy. Assume OK, but order wrong
184008Z   Two miscarriages in consecutive months, down as separate pregnancies. Leave as is*
188030P  C Miscarriage, then twins seven months later, wrong order. Assume same pregnancy
223020B  C Chronological order completely confused
230016B  Miscarriage, then live birth 6 months later, same preg. Assume OK.
233005N   Miscarriage, then live birth 5 months later, same preg. Assume OK.
233008U  C Miscarriage, then live birth 6 months later, same preg. Pre-March 91, so delete.
235018J  C Miscarriage 3 months after live birth, sep.preg. Assume OK, but order wrong.
280041J  C Abortion 4 months after miscarriage, same preg. Assume OK, but order wrong.
280053R  C Miscarriage, then live birth 5 months later, separate pregnancy. Move to same preg.
288016C  Two live births 4 months apart both weighing 9lbs 8 oz, entered as sep.pregs. ?????????
288027J  C Three miscarriages in 7 months, all different pregnancies. Assume OK, but order wrong
31007Z   C Miscarriage, then live birth 8 months later, separate pregnancy. Assume OK, but order wrong
35004V  C Miscarriage, then live birth 5 months later, separate pregnancy. Move to same pregnancy.
382027J  C Two live births 6.5 months apart, order wrong. pregf=3 for the second, i.e. ‘on time’. Puzzling, but leave.
41007C  Two live births 7.5 months apart. But pregf=1 for the second, i.e. premature, so leave as is.
42101T   Two live births 6 months apart. pregf=3 for the second, i.e. ‘on time’. Puzzling, but leave.
430107Z  Miscarriage, then live birth 5 months later, same pregnancy. Assume OK.
500032Z  C Miscarriage, then live birth 2 months later, but pre-March 91 anyway, so delete.
500375L  C Two miscarriages 4 months apart, different pregnancies. Assume OK, but order wrong
509228V  C Miscarriage, then live birth 3 months later, diff.pregnancy. Move to same pregnancy.
510127W  C 3 miscarriages, 1 abortion in 17 months, all diff. pregnancies. Assume OK, but order wrong
513053K  C Four miscarriages 21 months, all different pregnancies. Assume OK, but order wrong
515008Q  Miscarriage, then live birth 8 months later, same pregnancy. Assume OK.
515085K  C Stillbirth five days after live birth. Order wrong.
517006W  Misc. then live birth 6 months later, diff.preg. pregf=1 for the second, i.e. premature, so leave.
524002C  C Two live births 6.5 months apart, order wrong. pregf=3 for the second, i.e. ‘on time’. Puzzling.
528006J  C Two miscarriages in same year. OK, but delete earlier pre-1991 baby.
529009V  C Stillbirth 7 days after live birth, same pregnancy. Leave as is, but delete earlier pre-1991 baby.
565034Y  Misc.then live birth 5 months later, diff.preg. 2nd was v.premature, died after ten days, so leave.
591050U  C Misc. then live birth 5 months later, diff. preg. Second ‘on time’, so move to same pregnancy.
620037K  C Misc. then live birth 2 months later, diff. preg. Second ‘on time’, so move to same pregnancy.
650034X  Miscarriage, then live birth 6 months later, same pregnancy. Assume OK.
684001X  C Miscarriage, then live birth 7 months later, same pregnancy. Assume OK.
730049F  C Miscarriage 2 months after live birth, diff.preg. Assume OK, but order wrong.
823509H  Miscarriage, then live birth 8 months later, same pregnancy. Assume OK.
825073F  Miscarriage, then live birth 8 months later, same pregnancy. Assume OK.
85004E  Two miscarriages in consecutive months, sep.pregnancies. Puzzling, but leave as is*
950123U  C 3 births & miscarriage bunched together, incl. 2 live births 4 months apart(???). Separate out.
950154F  C Chronological order completely confused
950288D  C Two live births 2 weeks apart, entered as sep.pregs. Move to same pregnancy.
98004E  C Miscarriage, then twins seven months later. Assume same pregnancy, but change order
990029K  C Miscarriage, then live birth a month later, down as diff.pregnancy. Move to same pregnancy.
960072L  C Two live births 3 months apart, same pregnancy(??). Wrong order. Reverse order
985067J  C Two miscarriages 8 months apart, same preg. Move to diff.preg. Re-order 4 bunched others
986039J  C Two live births 5 weeks apart, sep. pregnancies. But all pre-1991 anyway, so delete.
986140W  Two miscarriages in consecutive months, sep.pregnancies. Puzzling, but leave as is*
986205Y  C Twins bunched with misc.13 months earlier, but stillbirth 6 days later not entered in same preg.
987040X  Miscarriage, then live birth 7 months later. Pregf=1, i.e. ‘early’, so assume OK.
987100P  C Miscarriage, then live birth 2 months later, diff.preg. Move to same preg, re-order.
989011A  C Miscarriage, then live birth 8 months later. Pregf=3 (‘on time’): assume same preg, re-order.
Miscarriage, then live birth 8 months later. Pregf=3 (‘on time’): assume same preg, re-order.
Chronological order confused
Live birth, then miscarriage 2 months later, different preg. OK, but order needs reversing.
Two live births 3.5 weeks apart, diff.pregs. Move to same preg.
Double miscarriage (same date) entered as though two separate pregnancies
Miscarriage, then live birth 8 months later, different preg. Pregf=1 (‘early’): Assume OK.
Miscarriage, then twins six months later: assume same pregnancy, so leave as is.
Two live births 5 months apart, diff.pregs. (??????). 2 other pregs wrongly bunched.
Miscarriage, then live birth 7 months later, same preg. Pregf=1 (‘on time’): Assume OK.

Although it would obviously be impossible to have a miscarriage from a new conception as soon as one month after a previous pregnancy outcome, the fact that we never know the ‘day’ within the month for miscarriages means that there could possibly be as much as eight weeks between the two events, making it just about plausible.
Appendix 7 (cont.)

**BCS70 cases where two birth outcomes are separated by more than three days, but less than 9 months.**

| 00046056 | 00117080 | 00250035 | 00305007 | 00376016 | 00407035 | 00467093 | 00485095 | 00508088 | 00593098 | 00665097 | 00680073 | 00700040 | 00718018 | 00757048 | 00812044 | 00820070 | 00831021 | 00912021 | 00947026 | 00951051 | 00999058 | 01005054 | 01069012 | 01166064 | 01266041 | 01332089 | 01424040 | 01445068 | 01453094 | 01516092 | 01548071 | 01628096 | 01653048 | 01695003 | 01711070 | 01739024 | 01761051 | 01840000 | 01859054 | 01927052 | 01949055 | 01999036 | 02061089 | 02353095 | 02713099 | 03121039 | 03430072 | 03997042 | 04294054 | 04516026 | 05167052 | 05486061 | 05661087 | 05840013 | 06145027 | 06313002 | 06643063 | 06880097 | 07246058 | 08042081 | 08177063 | 08498271 | 08750047 | 09324089 | 099708046 | 10295096 | 10531069 | 10678078 | 11019010 | 11539049 | 11680030 | 11969087 | 12428099 | 13189078 | 13846088 | 14689042 | 15336082 | 15838018 | 16835071 |
278 cases in total.

On manual scrutiny, 142 of these were plausible, e.g. two miscarriages seven months apart, listed in separate pregnancies.

However, the following 136 cases were problematic in some way or other. The middle column contains a ‘C’ if the case record was changed by this cleaning exercise.

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<tbody>
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<td>00117080</td>
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<td>2 live births separated by 7 months, diff pregs. Pregf=3 (i.e. ‘on time’) for second. Assume OK.</td>
</tr>
<tr>
<td>00250035</td>
<td>C</td>
<td>Miscarriage, live birth 4 months later, diff.preg. Move to same pregnancy.</td>
</tr>
<tr>
<td>00467093</td>
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<td>Two live births 6.5 months apart, diff.prepg. Pregf=1 (i.e. ‘early’) for second. Assume OK.</td>
</tr>
<tr>
<td>00665097</td>
<td>C</td>
<td>Abortion, live birth 5 months later, diff.preg. Pregf=2 (late) for second. Move to same preg.</td>
</tr>
<tr>
<td>00680073</td>
<td></td>
<td>Miscarriage, then live birth 6 months later, same preg. Assume OK.</td>
</tr>
<tr>
<td>00700040</td>
<td>C</td>
<td>Miscarriage, then live birth 7 months later, same preg. Assume OK, but re-order.</td>
</tr>
<tr>
<td>00757048</td>
<td></td>
<td>Two live births 7 months apart, diff.prepgs. Pregf=1 (i.e. ‘early’) for second. Assume OK.</td>
</tr>
<tr>
<td>00820070</td>
<td>C</td>
<td>Abortion, live birth 4 months later, diff.preg. Pregf=2 (late) for second. Move to same preg.</td>
</tr>
<tr>
<td>00831201</td>
<td></td>
<td>Miscarriage, live birth 8 months later, diff. preg. Pregf=3 (‘on time’) for second. Assume OK.</td>
</tr>
<tr>
<td>00912021</td>
<td>C</td>
<td>Miscarriages in consecutive months, same preg. Assume OK, but re-order.</td>
</tr>
<tr>
<td>00947026</td>
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<td>Two live births 8 months apart, diff.prepgs. Pregf=1 (i.e. ‘early’) for second. Assume OK.</td>
</tr>
<tr>
<td>00951051</td>
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<td>Two live births 8 months apart, diff.prepgs. Pregf=3 (‘on time’) for second. Assume OK.</td>
</tr>
<tr>
<td>01005054</td>
<td>C</td>
<td>Abortion 5 months after live birth, diff preg. OK, but re-order.</td>
</tr>
<tr>
<td>01069012</td>
<td></td>
<td>Miscarriage, then live birth 6 months later, same preg. Assume OK.</td>
</tr>
<tr>
<td>01266041</td>
<td>C</td>
<td>Miscarriage, then live birth 6 months later, same preg. Assume OK, but order wrong.</td>
</tr>
<tr>
<td>01445068</td>
<td>C</td>
<td>Miscarriage 3 months after live birth, diff. preg, so OK, but order wrong.</td>
</tr>
<tr>
<td>01453094</td>
<td></td>
<td>Miscarriage, live birth 7 months later, diff. preg. Pregf=1 (‘early’) for second. Assume OK.</td>
</tr>
<tr>
<td>01628096</td>
<td></td>
<td>2 births 3 months apart, diff.pregs. Pregf=2 (i.e. ‘late’) for both. Must be date error. Leave.</td>
</tr>
<tr>
<td>01695003</td>
<td>C</td>
<td>Miscarr, live birth 7 months later, same preg. Pregf=early for second. Assume OK, but re-order</td>
</tr>
<tr>
<td>01739024</td>
<td></td>
<td>Miscarriage, then live birth 7 months later, diff.preg. Pregf=early for second. Assume OK.</td>
</tr>
<tr>
<td>01761051</td>
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<td>Miscarriage, then live birth 7 months later, diff.preg. Pregf=‘on time’ for second. Assume OK.</td>
</tr>
<tr>
<td>01840000</td>
<td>C</td>
<td>2 miscarriages 6 months apart, diff.preg. Assume OK, but re-order.</td>
</tr>
<tr>
<td>01859054</td>
<td></td>
<td>Abortion 3 months after live birth, diff. preg, so OK, but order wrong.</td>
</tr>
<tr>
<td>01949055</td>
<td></td>
<td>Abortion 1 month after live birth, diff. preg, so OK, but order wrong.</td>
</tr>
<tr>
<td>02100033</td>
<td></td>
<td>Miscarr, live birth 5 months later, same preg. Pregf=early for second. Assume OK.</td>
</tr>
<tr>
<td>02346044</td>
<td></td>
<td>Miscarr, live birth 8 months later, same preg. Pregf=late for second. Assume OK.</td>
</tr>
<tr>
<td>02713099</td>
<td></td>
<td>Miscarr, live birth 6 months later, diff. preg. Pregf=late for second. Move to same preg.</td>
</tr>
<tr>
<td>03121039</td>
<td></td>
<td>2 livebths 3 months apart, diff.prepgs. Pregf=on time for both. V.strange. Leave, but re-order.</td>
</tr>
<tr>
<td>03279000</td>
<td></td>
<td>Live birth 15/5/89, two miscar. also in 89 (no stated month). Assume separate preg, re-order.</td>
</tr>
<tr>
<td>03349048</td>
<td></td>
<td>Miscarriage 4 months after live birth, diff. preg, so OK, but order wrong.</td>
</tr>
<tr>
<td>03379077</td>
<td></td>
<td>Miscarr, live birth 6 months later, same preg. Assume OK, but order wrong.</td>
</tr>
<tr>
<td>03735080</td>
<td></td>
<td>Miscarr, same month as live birth(on time). Must be stillbirth, or (probably) date error. Leave.</td>
</tr>
<tr>
<td>03796187</td>
<td></td>
<td>Miscarriage, then live birth 6 months later, same preg. Assume OK.</td>
</tr>
<tr>
<td>03997042</td>
<td>C</td>
<td>2 miscarriages 3 months apart, diff.preg. Assume OK, but re-order.</td>
</tr>
<tr>
<td>04046069</td>
<td>C</td>
<td>3 miscarriages in different years bunched in same pregnancy. Separate, and re-order.</td>
</tr>
<tr>
<td>04222070</td>
<td></td>
<td>2 live births 11 weeks apart, sep. preg. 1st 8lb 4 oz, 2nd ‘early’, 3lb. Must be date error. Leave.</td>
</tr>
<tr>
<td>04277027</td>
<td></td>
<td>2 live births 10 weeks apart, sep. preg. 1st 6lb 9, 2nd ‘late’, 8lb 12. Must be date error. Leave.</td>
</tr>
</tbody>
</table>
04350025 C Miscarriage, then live birth 4 months later, diff. preg. Move to same pregnancy.
04498009 C Miscarriage, then live birth 4 months later, same preg. Assume OK, but re-order.
04502049 Miscarriage, then live birth 5 months later, same preg. Assume OK.
05170001 C Miscarriage, then live birth 3 months later, diff. preg. Move to same pregnancy.
05239051 Miscarriage, then live birth 3 months later, same preg. Assume OK.
05531081 2 live births 3 months apart, sep. preg. Both on time, 10lb 4, 9 lb 14. Must be date error. Leave.
05548084 C Abortion 9 months after live birth, so OK, but order wrong.
05661087 C Miscarriage 7 months after live birth, diff.preg, so OK, but order wrong.
05750001 C Miscarriage, then live birth 7 months later, same preg. Assume OK.
05796069 Miscarriage, then live birth 7 months later,diff. preg. Live birth premature 1lb 7oz. Assume OK.
05806060 C Miscarriage, then live birth 7 months later, diff.preg, ‘on time’ 8lb 5 oz. Move to same preg.
05991047 C Abortion, then live birth 3 months later, diff.preg, ‘on time’ 7lb 14 oz. Move to same preg.
06092005 Miscarriage, then live birth 8 months later, same preg. Live birth ‘late’. Assume OK.
06128000 Miscarriage, then live birth 5 months later, same preg. Assume OK, but re-order.
06145027 C Miscarriage, then live birth 5 months later, same preg. Move to same preg.
06173005 C Abortion 9 months after live birth, diff. preg, so OK, but order wrong.
06177006 C Abortion, then live birth 4 months later, diff.preg, ‘late’ 7lb 3 oz. Move to same preg.
06180130 C Miscarriage, then live birth 2 months later, diff.preg. Move to same preg.
06226027 C Miscarriage 4 months after live birth, diff. preg, so OK, but order wrong.
06313002 C Miscarriage 4 months after live birth, same preg. Move to diff. preg and re-order.
06394088 C Miscarriage, then live birth 5 months later, same preg. Assume OK, but re-order.
06481063 C Miscarriage, then live birth 8 months later, same.preg, on time, 6lb 7 oz. Assume OK, but re-order.
06521083 C Miscarriage, then twins 7 months later, same pregnancy. Assume OK.
06707036 Miscarriage, then live birth 7 months later, same preg. Assume OK.
06872071 2 live births 5 months apart, sep. preg. Both on time, 8lb 8, 9lb 2. Must be date error. Leave.
06880097 C 2 live births 7 months apart, sep. preg. 2nd ‘early’ 6lb 12. Could just be plausible, but re-order.
06922067 C Miscarriage, then live birth 3 months later, diff.preg. Move to same preg.
07051003 C Abortion, then stillbirth 5 months later, diff.preg. Stillbirth ‘early’. Move to same preg.
07246058 2 live births 6 months apart, sep. preg. Both on time, 7lb 11, 9lb 1. Must be date error. Leave.
07342034 C Miscarriage, live birth 7 months later, same preg. Assume OK, but other babies re-ordered.
07405032 C Miscarriage, then live birth 4 months later, diff.preg. Move to same preg.
08039031 C Abortion, then twins 5 months later (each 5lbs 7 oz) 5 months later. Switch to same preg.
08042081 Miscarriage, then live birth 6 months later, diff.preg, early, 3lb 2 oz. Assume OK.
08121030 2 births 5 days apart,sep.preg, 7lb 14, 8lb 2. Later one early, other on time. Assume date error.
08162010 C Miscarriage, then live birth 7 months later, diff, preg, late, 9lb 2 oz. Move to same pregnancy.
08239086 C Miscarriage 6 months after live birth, diff.preg, so OK, but order wrong.
08460092 C Miscarr, then live birth 6 months later, same.preg, early, 7lb 6 oz. Assume OK, but re-order.
08534041 Miscarr, then live birth 6 months later, same.preg, early, 6lb 11 oz. Assume OK.
08716094 C 2 live births 4 months apart, sep. preg. Both on time, 7lb 6, 7lb 9. Must be date error. Re-order.
08930049 C Miscarriage, then live birth 4 months later, same preg. Assume OK.
09002054 C Miscarriage, then live birth 1 month later, same preg, early, 6lb 1oz. Assume OK, but re-order.
09087040 *2 births 4 months apart, sep. preg, 7lb 11, 7lb 9. Later one ‘early’. Must be date error. Leave.
09324089 Miscarriage, then live birth 7 months later, same preg, late, 6lb 9oz. Assume OK.
09681052 C 2 live births 8 months apart, sep. preg, second 2lb 1oz, ‘early’. Assume OK.
09708046 2 births 11 days apart,sep.preg 7lb 12, 7lb 5. Later one early, other on time. Assume date error.
09990076 C Miscarriage, then live birth 6 months later, same preg, on time, 6lb 4oz. Assume OK.
10231037 C Two live births 10 weeks apart, diff.preg. Move to same preg.
10355068 C Miscarriage, then live birth 7 months later, diff.preg, late, 7lb 13 oz. Move to same pregnancy.
10455045 C Miscarriage 8 months after live birth, diff.preg, so OK, but wrongly bunched with another baby.
10517068  C Miscarriage, then live birth 5 months later, diff.preg, late, 6lb 13 oz. Move to same pregnancy.
10643073  Miscarriage, then live birth 8 months later, diff.preg, late, 8lb 2 oz. Assume OK.
10675052  Miscarriage, then live birth 7 months later, same preg, early, 6lb 0 oz. Assume OK.
10678078  2 live births 8 months apart, sep. preg, second 7lb 9 oz, on time. Assume OK.
10723098  Miscarriage Nov 99, in same pregnancy as 'still pregnant' entry. Assume OK.
10928028  2 live births 8.5 months apart, sep. preg, second 7lb 9oz, on time. Assume OK.
11102085  2 live births 3 months apart, sep. preg, 7lb 6, 7lb 5, both 'late'. Must be date error. Leave.
11162042  Miscarriage, then live birth 6 months later, same preg, late, 7lb 6 oz. Assume OK.
11257019  C Miscarriage Jan 2000, in diff.pregnancy from 'still pregnant' entry. Move to same pregnancy.
11519097  C Miscarriage, then live birth 2 months later, diff.preg. Move to same pregnancy.
11539049  C Miscarriage 5 months after live birth, diff.preg, so OK, but re-order.
11541023  2 live births 3 months apart, sep. preg, 6lb 8, 5lb 6, both 'on time'. Must be date error. Leave.
11553050  C Miscarriage, then live birth 5 months later, diff.preg, early, 5lb 8 oz. Move to same pregnancy.
11841055  2 live births 3 months apart, sep. preg, 7lb 13, 8lb 11, both 'late'. Must be date error. Leave.
11871084  C Miscarriage 8 months after live birth, diff.preg, so OK, but re-order.
12263073  C Miscarriage 2 months after live birth, diff.preg, so OK, but re-order.
12619052  Miscarriage, then live birth 5 months later, same preg. Assume OK.
12786037  C Miscarriage, then live birth 3 months later, diff.preg, late, 7lb 14 oz. Move to same pregnancy.
13158074  2 live births 8 months apart, sep.preg, second 'late', 8lb 4oz. Assume OK anyway.
13189078  C Miscarriage, then live birth 7 months later, same preg, late, 7lb 10. Assume OK, but re-order.
13203094  Miscarriage, then live birth 6 months later, same preg, on time, 8 lb 8 oz. Assume OK.
13560057  5th outcome is miscarriage in same month as first (live birth). Assume date error. Leave.
13644083  2 live births 6 months apart, sep.preg, second 'late', 6lb 14oz. Assume date error. Leave.
14137024  C Miscarriage, then live birth 8 months later, same preg, late, 7lb 11. Assume OK, but re-order.
14331027  6 miscarriages within 2 years, all listed sep. pregs, 4 having no stated month. Assume OK.
14414078  C Miscarriage, then live birth 4 months later, diff.preg. Move to same pregnancy.
14812036  C Stillbirth 11 days after live birth, same preg. Assume OK, but re-order.
14978022  C Stillbirth 8 months after livebirth, diff.preg: OK, but wrongly bunched with other birth outcome.
15336082  Miscarriage, then live birth 6-7 months later, diff.preg, early, 7lb 7 oz. Assume OK.
15675043  C Stillbirth 6 days after live birth, same preg. Assume OK, but re-order.
15810064  C 2 miscarriages 6 months apart, diff.preg: OK, but one wrongly bunched with a 3rd miscarriage.
15838018  C Abortion, then live birth 4 months later, diff.preg. Move to same preg.
16051004  2 live births 3 months apart, sep.preg, 11lb 10, 10lb 8, both on time. Must be date error. Leave.
16293014  C Miscarriage a month after livebirth, diff.preg, so OK, but order wrong.
16338010  2 live births 8 months apart, sep.preg, second 9lb 0oz, 'on time'. Assume OK.
16643042  C Miscarriage, then live birth 6-7 months later, diff.preg, late, 7lb 2 oz. Move to same preg.
16835071  2 live births 5 months apart, sep.preg, no weight data on second. Assume date error. Leave.
16957051  Miscarriage, then live birth 4 days later, same preg. Assume OK. (should really be 'stillbirth').
16992080  C Miscarriage, then live birth 7 months later, same preg, early, 10lb 1. Assume OK, but re-order.
17688001  Miscarriage, then live birth 6 months later, same preg, early, 5lb 0 oz. Assume OK.
17795029  2 live births 6 months apart, sep.preg, second 7lb 8oz, 'late'. Must be date error. Leave.
20322000  Miscarriage, then stillbirth 5 months later (diff.preg), then live birth 7 months after that, (same preg as still birth), 6lb 9oz, late. Assume stillbirth date erroneous. Leave.
20503000  C 2 miscarriages 3 months apart, diff.preg, so OK, but re-order.
20527000  Miscarriage, then live birth 8-9 months later, diff.preg, early, 3lb 0 oz. Assume OK.
21644000  2 live births 5 weeks apart, sep.preg, 6lb 14, 8lb 3. Later one 'early', other 'on time'. Must be date error. Leave.
Appendix 8

BCS70 cases where an outcome date seems dubious

13235073  Abortion in 1967 – clearly impossible
01620094  Live birth in 1980, when (male) respondent was aged 10
11586004  Abortion in 1982, when (female) respondent aged 12.

[There were no corresponding NCDS cases, as pregnancy history was only asked from age 33 onwards]
Appendix 9

Cases where everpreg=1, but no outcome data or dates are entered for any outcome.

Respondent answered ‘Yes’ to question ‘Have you ever been or got anyone else pregnant?’, but gave no informative data about any pregnancies.

NCDS

| 289155Y | 383020Y | 433043M | 450006B | 509203C | 511019Y |
| 550264J | 565093R | 620103V | 683026K | 750049U | 782126R |
| 950109A | X34002E | X80205F |         |         |         |

15 cases in total.

Also, NCDS cohort member 383032F had one pregnancy, outcome =’8’ (‘don’t know’), no outcome date, no other data at all. Male CM.

BCS70

| 00270088 | 01470020 | 02635024 | 03596058 | 03716002 | 03820004 |
| 04520051 | 05265079 | 05343053 | 05364081 | 05375032 | 05551033 |
| 05863092 | 06017072 | 06217026 | 06524008 | 06618010 | 07111076 |
| 07114001 | 08136083 | 08201055 | 08679000 | 09930027 | 10121084 |
| 10185042 | 10283069 | 10329040 | 10873056 | 10898085 | 10969008 |
| 11495028 | 12141093 | 12373026 | 12461077 | 12589008 | 12590007 |
| 13355002 | 13677037 | 14509055 | 14512004 | 14548085 | 14576063 |
| 14693067 | 15348008 | 15399065 | 16513036 | 16741069 | 17331062 |
| 17535017 | 17575022 | 20025000 |         |         |         |

51 cases in total.
Appendix 10

Result of manual scrutiny of all ‘true’ NCDS multiple births (i.e. where birth outcomes separated by no more than 3 days).

The following 117 cases had ‘true’ multiple outcomes. All were examined manually. 16 were problematic (see table below), of which 13 were altered (column ‘Ch?’=C). All other cases were correctly entered.

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<td>Double miscarriage, with one other livebirth in wrong order</td>
</tr>
<tr>
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<td>Double miscarriage, with single miscarriage &amp; three other livebirths in wrong order</td>
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<td>Twins bunched with single birth, wrong order. Delete pre-March 91 twins.</td>
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<tr>
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<td>Miscarriage, then twins seven months later, wrong order: assume same pregnancy</td>
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<tr>
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<td>Double miscarriage, but placed in separate pregnancies. Move to same pregnancy</td>
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<td>Twins born on separate days entered in wrong order chronologically.</td>
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<td>Twins born on separate days entered in wrong order chronologically.</td>
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<td>Miscarriage, then twins seven months later, wrong order. Assume same pregnancy</td>
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<td>Miscarriage, then twins seven months later. Assume same pregnancy, but change order</td>
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<td>Miscarriage, then twins six months later: assume same pregnancy, so leave as is.</td>
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Appendix 10 (cont).

Result of manual scrutiny of all ‘true’ BCS70 multiple births (i.e. where birth outcomes separated by no more than 3 days).

The following cases had ‘true’ multiple outcomes. All were examined manually. 26 were problematic (see table below), of which 24 were altered (column ‘Ch?’=C). All other cases were correctly entered.

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127 cases in total.

bserial  Ch?  Comments

00508088  C 3 babies in slots 1, 6, 11 had dates 20/7/99, 3/7/99, 20/7/99 respec. Assume triplets.
02706048  C Two babies in slots 1,6 with same birth date. Move 6 to slot 2.
03403069  C Slots 16,21 and 26 all say ‘still pregnant.’ Assume triplets, move to slots 1,2,3.
03783010  C Slots 1 and 11 both say ‘still pregnant’. Assume twins, move to slots 1,2.
03947061  C Slots 1 and 6 have same birth date. Assume twins, move to slots 1,2.
05521004  C Twins bunched in same pregnancy as baby born a year later.
05671063  C Slots 1 and 11 have same birth date. Assume twins, move to slots 1,2.
06196084  C 3 miscarriages in slots 1,6,11 dated Feb 98, Apr 98, Feb 98 respec. Assume twins+1 sep.preg.
06521083  C Miscarriage, then twins 7 months later, same pregnancy. Assume OK.
06548062  C 7 babies (of whom two are twins). The sixth was out of chronol. Order.
06982024  C Twins, plus one other baby, out of chronol. order.
07149006  C Double stillbirth in slots 11 and 12 more recent than other two children. Move to 1,2.
Twins, plus two other babies, out of chronol. order.

Twins placed in slots 26, 27 when 11,16,21 vacant. Move to slots 11-12.

Abortion, then twins 5 months later (each 5lbs 7 oz) 5 months later. Switch to same preg.

Live birth, then double abortion 3 months later, diff.preg. Assume OK.

Two other babies from years earlier bunched in same pregnancy as twins.

Two babies with same d.o.b. in slots 1,11. Move to slots 1,2.

Twins in slots 1,2, then twins in slots 6 & 7 with same birth dates. DELETE 2nd pair*.

Twins, plus three other babies, out of chronol. order.


Twins, plus two other babies, out of chronol. order and all bunched in same pregnancy.

Two abortions, both June 1988, in slots 11 and 26. Assume 26 is coding error, and DELETE.

2 live births, same date, in slots 1, 11. Both 9 lb 2 oz!! Assume 11 is coding error -DELETE.

Twins, plus one other baby, out of chronol.order.

Twins, plus two other babies, out of chronol. order and all bunched in same pregnancy.

* The birth weights of the first two were 4lb 9 oz and 5lb 2oz. The second pair were 4 lb 9oz and unspecified. It seems very unlikely indeed that quads could have such high birthweights. We therefore assumed this was a data entry duplication (the fact that two birth weights are exactly the same also supports this hypothesis).
Appendix 11

Complete list of all cases altered by data cleaning process

**NCDS**

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560008V 560022P 560031Q 561006W 565027B 565036C
565063F 565108B 568025F 568029Q 568037P 568069C
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882061W 910031N 910032J 930013C 930013C 930013C
950114T 950123U 950135B 950135B 950135B 950135B
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960029K 960091V 960046K 960072L 960072L 960072L
982053E 983033D 984024J 985039C 985039C 985039C
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X25029A X25050R X25056D X25057F X25057F X25057F
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X37008K X38005J X38008Q X40028K X40036J X41020X
X60006M X66030R X67026F X67026F X67026F X67026F
X76010R X77014E X77016K X77021B X77021B X77021B
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Y20055J Y20078W Y20134D Y20154L Y20187B Y21001P
Y21037M Y30072Q Y30150J Y30168D Y30169F Y30223K
Y33089Z

511 cases in total.
468 cases in total.
Appendix 12

SPSS Syntax for ‘patch’ to re-order cases with outcomes wrongly bunched or out of chronological order, to examine miscellaneous anomalous cases, and to eliminate pre-March 1991 NCDS pregnancy histories

* 'Undeclare' all missing values for outcome and date of outcome variables, otherwise SPSS 'If' test for values '99', '9999' won't work.

missing values prega prega2 prega3 prega4 prega5 prega6 prega7 prega8 prega9 prega10 prega11 prega12 prega13 prega14 prega15 prega16 prega17 prega18 prega19 prega20 prega21 prega22 prega23 prega24 prega25 prega26 prega27 prega28 prega29 prega30 prega31 prega32 prega33 prega34 prega35 prega36 prega37 prega38 prega39 prega40 preged preged2 preged3 preged4 preged5 preged6 preged7 preged8 preged9 preged10 preged11 preged12 preged13 preged14 preged15 preged16 preged17 preged18 preged19 preged20 preged21 preged22 preged23 preged24 preged25 preged26 preged27 preged28 preged29 preged30 preged31 preged32 preged33 preged34 preged35 preged36 preged37 preged38 preged39 preged40 pregem pregem2 pregem3 pregem4 pregem5 pregem6 pregem7 pregem8 pregem9 pregem10 pregem11 pregem12 pregem13 pregem14 pregem15 pregem16 pregem17 pregem18 pregem19 pregem20 pregem21 pregem22 pregem23 pregem24 pregem25 pregem26 pregem27 pregem28 pregem29 pregem30 pregem31 pregem32 pregem33 pregem34 pregem35 pregem36 pregem37 pregem38 pregem39 pregem40 pregey pregey2 pregey3 pregey4 pregey5 pregey6 pregey7 pregey8 pregey9 pregey10 pregey11 pregey12 pregey13 pregey14 pregey15 pregey16 pregey17 pregey18 pregey19 pregey20 pregey21 pregey22 pregey23 pregey24 pregey25 pregey26 pregey27 pregey28 pregey29 pregey30 pregey31 pregey32 pregey33 pregey34 pregey35 pregey36 pregey37 pregey38 pregey39 pregey40 () .

* Declare vectors corresponding to all 'baby' variables (length 40), and 'pregnancy' variables (length 8).
* so we can process all the slots using loop structures.

vector vpregnu vpregj vcg1prg vcg2prg vcg3prg vcpregb vmorpreg(8, f1.0).
vector vpregk vpregkw(8, f3.0).
vector vpregl(8, f2.0).
vector vprega vpregc vpregd vkilo vpregf vpregh vwhopa vwerkd vwatkd vabspa vabspb vabspc vabskb vabskc vabskd vabske (40, f1.0).
vector vpound vounce vprged vprgem vpregg vwhopb vabska vabsmn(40, f2.0).
vector vgramm vprgey vabsyr(40, f4.0).
vector vprege(40, a8).
vector vpregi(40, a100).

* Declare second copy of the vectors, to facilitate the process of placing everything in new positions after re-ordering
* (as the original variables are unfortunately not consecutive in the data file, it's easier to do it with a fresh lot of vectors.
* It also saves having to have hundreds of 'compute' statements to initialise all the variables to system-missing, as these
* vectors all start off system-missing once declared.

vector xpregu xpregj xcg1prg xcg2prg xcg3prg xcpregb xmorprg(8, f1.0).
vector xpregk xpregkw(8,f3.0).
vector xpregl(8,f2.0).
vector xprega xpregc xpregd xkilo xpregf xpregh xwhopa xwerkd xwatkd xabspa
xabspb xabspc xabskb xabskd xabske(40,f1.0).
vector xpound xounce xprged xprgem xpregg xwhopb xabsk xabsmn(40,f2.0).
vector xgramm xpregy xabsyr(40,f4.0).
vector xprege(40,a8).
vector xpregi(40,a100).

*Declare vector BIRDAT to compare all forty possible outcome dates chronologically.
vector birda(40, f6.0).

*Declare vector 'key' to keep track of which slot the data relating to the nth most recent
pregnancy was originally placed in.
* This is used in the automatic re-ordering of cases with no multiple births, dubious outcomes
or other horrible complications.
vector key(8, f1.0).

*Declare vector 'key' to keep track of which of the 40 'baby' slots the data relating to the nth
most recent baby was originally
* placed in. This is used in the re-ordering of individual cases from the manual scrutiny.
vector key40(40, f1.0).

*Declare vector 'keypreg' to keep track of which of the 8 'pregnancy' slots the data relating to
the nth most recent pregnancy was originally
* placed in. This is used in the re-ordering of individual cases from the manual scrutiny.
vector keypreg(8, f1.0).

*Declare vector 'compdt' to create new composite date variable which includes '99' codes and
imputed figures for missing days and months.
vector compd(40,f8.0).

*Declare vector 'outdat' to keep track of which is the most recent pregnancy outcome, during
the process of re-ordering them.
vector outdat(40, f6.0).

* Don't look at any CM who's never been/got anybody pregnant.
Do if(everpreg=1).

* Define vectors for date and pregnancy outcome variables, needed to sort out wrong
order/bunching problems etc.
* Regrettably these (and later, all the other 35 pregnancy history variables) all have to be
defined/copied in this
* long-winded way, because the 40 versions of each variable are not consecutive on the
compute vprega1=prega.
compute vprega2=prega2.
compute vprega3=prega3.
compute vprega4=prega4.
compute vprega5=prega5.
compute vprega6=prega6.
compute vprega7=prega7.
compute vprega8=prega8.
compute vprega9=prega9.
compute vprega10=prega10.
compute vprega11=prega11.
compute vprega12=prega12.
compute vprega13=prega13.
compute vprega14=prega14.
compute vprega15=prega15.
compute vprega16=prega16.
compute vprega17=prega17.
compute vprega18=prega18.
compute vprega19=prega19.
compute vprega20=prega20.
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compute vprega27=prega27.
compute vprega28=prega28.
compute vprega29=prega29.
compute vprega30=prega30.
compute vprega31=prega31.
compute vprega32=prega32.
compute vprega33=prega33.
compute vprega34=prega34.
compute vprega35=prega35.
compute vprega36=prega36.
compute vprega37=prega37.
compute vprega38=prega38.
compute vprega39=prega39.
compute vprega40=prega40.

compute vprged1=preged.
compute vprged2=preged2.
compute vprged3=preged3.
compute vprged4=preged4.
compute vprged5=preged5.
compute vprged6=preged6.
compute vprged7=preged7.
compute vprged8=preged8.
compute vprged9=preged9.
compute vprged10=preged10.
compute vprged11=preged11.
compute vprged12=preged12.
compute vprged13=preged13.
compute vprged14=preged14.
compute vprged15=preged15.
compute vprged16=preged16.
compute vprged17=preged17.
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compute vprged26=preged26.
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compute vprged28=preged28.
compute vprged29=preged29.
compute vprged30=preged30.
compute vprged31=preged31.
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compute vprged35=preged35.
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compute vprged37=preged37.
compute vprged38=preged38.
compute vprged39=preged39.
compute vprged40=preged40.

compute vprgem1=pregem.
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compute vprgem4=pregem4.
compute vprgem5=pregem5.
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compute vprgem36=pregem36.
compute vprgem37=pregem37.
compute vprgem38=pregem38.
compute vprgem39=pregem39.
compute vprgem40=pregem40.

compute vprgey1=pregey.
compute vprgey2=pregey2.
compute vprgey3=pregey3.
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compute vprgey5=pregey5.
compute vprgey6=pregey6.
compute vprgey7=pregey7.
compute vprgey8=pregey8.
compute vprgey9=pregey9.
compute vprgey10=pregey10.
compute vprgey11=pregey11.
compute vprgey12=pregey12.
compute vprgey13=pregey13.
compute vprgey14=pregey14.
compute vprgey15=pregey15.
compute vprgey16=pregey16.
compute vprgey17=pregey17.
compute vprgey18=pregey18.
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compute vprgey20=pregey20.
compute vprgey21=pregey21.
compute vprgey22=pregey22.
compute vprgey23=pregey23.
compute vprgey24=pregey24.
compute vprgey25=pregey25.
compute vprgey26=pregey26.
compute vprgey27=pregey27.
compute vprgey28=pregey28.
compute vprgey29=pregey29.
compute vprgey30=pregey30.
compute vprgey31=pregey31.
compute vprgey32=pregey32.
compute vprgey33=pregey33.
compute vprgey34=pregey34.
compute vprgey35=pregey35.
compute vprgey36=pregey36.
compute vprgey37=pregey37.
compute vprgey38=pregey38.
compute vprgey39=pregey39.
compute vprgey40=pregey40.

* Use variable totbaby to calculate number of babies carried in total, by checking each
* of the 40 possible slots for any date or outcome.

compute totbaby=0.
format totbaby(f1.0).

loop #i=1 to 40.
if (not(sysmis(vprega(#i))) or not(sysmis(vprgey(#i))) or not(sysmis(vprgem(#i))) or
not(sysmis(vprged(#i))))
totbaby=totbaby+1.
end loop.

* Initialise variable 'noyrflag' to log cases where any outcome has a year '9999'.
* These cases must be excluded from the automatic re-ordering, and scrutinised manually.

compute noyrflag=0.
format noyrflag(f1.0).
compute pre91flg=0.
format pre91flg(f1.0).

* Construct date-of-birth variables which can be measured ordinally and subtracted from each
* other, using yrmoda function, which produces number of days elapsed since 15/10/1582.
* Flag up cases where year=9999, or prega (outcome)=9 or 8, for manual scrutiny.
* Impute day and month as 15, 6 respectively if not available, as long as year has been entered sensibly.
* Impute date 30th Sept 2000 for any ongoing pregnancies.

loop #i=1 to 40.
Do if(vprgey(#i) ge 1900 and vprgem(#i) ge 1 and vprged(#i) ge 1 and vprged(#i) le 12 and vprged(#i) le 31).
compute birdat(#i)=yrmoda(vprgey(#i),vprgem(#i),vprged(#i)).
compute compdt(#i)=1000000*vprged(#i)+10000*vprgem(#i)+vprgey(#i).
end if.
Do if(vprgey(#i)=9999 or vprgey(#i)=9998 or vprgea(#i)=9 or vprgea(#i)=8).
compute noyrflag=1.
compute compdt(#i)=99999999.
end if.
Do if(vprgey(#i) ne 9999 and vprgey(#i) ne 9998 and (vprged(#i) ne 99) and (vprgem(#i)=99 or sysmis(vprgem(#i)))).
compute birdat(#i)=yrmoda(vprgey(#i),6,vprged(#i)).
compute compdt(#i)=1000000*vprged(#i)+60000+vprgey(#i).
end if.
Do if(vprgey(#i) ne 9999 and vprgey(#i) ne 9998 and (vprged(#i)=99 or (vprged(#i)=98) or sysmis(vprged(#i))) and (vprgem(#i)=99 or sysmis(vprgem(#i))))).
compute birdat(#i)=yrmoda(vprgey(#i),6,15).
compute compdt(#i)=15060000+vprgey(#i).
end if.
Do if(vprgey(#i) ne 9999 and vprgey(#i) ne 9998 and vprgem(#i) ne 99 and (vprged(#i)=99 or vprged(#i)=98 or sysmis(vprged(#i))))).
compute birdat(#i)=yrmoda(vprgey(#i),vprgem(#i),15).
compute compdt(#i)=15000000+10000*vprgem(#i)+vprgey(#i).
end if.
Do if(vprega(#i)=5).
compute birdat(#i)=yrmoda(2000,9,30).
compute compdt(#i)=30092000.
end if.
end loop.

* Flag up all cases where birth dates are out of order.

compute ordrflag=0.
format ordrflag (f1.0).
loop #i=1 to 39.
loop #j=1 to #i.
if (birdat(#1+#i)>birdat(#j))ordrflag=1.
end loop.
end loop.

* Flag up all cases where outcomes more than nine months apart are bunched as though part of the same pregnancy.

compute bunched=0.
format bunched (f1.0).
loop #i=1 to 8.
loop #j=1 to 4.
if ((birdat(5*#i-4+#j)-birdat(5*#i-4) ge 273) or (birdat(5*#i-4)-birdat(5*#i-4+#j) ge 273))bunched=1.
end loop.
end loop.

*Flag up all cases where there is an ongoing pregnancy.

compute stilpreg=0.
format stilpreg (f1.0).
loop #i=1 to 40.
if (vprega(#i)=5)stilpreg=1.
end loop.

* Get all valid birth dates in chronological order, up to a maximum of 8 births.
* Use 'key' vector to keep track of which birthslot the date was originally placed in, so as to line up all the other pregnancy variables corresponding with this birth into their correct slots.
* After each of the 8 iterations resulting in determining a 'key' number, set the outcome date for the slot that key points to, to zero, so it will no longer be the most recent in the next iteration.

loop #j=1 to 8.
compute outdat(#j)=0.
compute key(#j)=0.
loop #i=1 to 40.
Do if (birdat(#i)>outdat(#j)).
compute outdat(#j)=birdat(#i).
compute key(#j)=#i.
end if.
end loop.
if (key(#j) ne 0)birdat(key(#j))=0.
end loop.

* As a check that everything worked OK, look at whether any birdat values are still non-zero.
compute missdany=0.
format missdany (f1.0).
loop #i=1 to 40.
If (birdat(#i) ne 0)missdany=1.
end loop.

* Create variable truemult to flag up all cases with true multiple births: i.e. those where the outcome date is the same, or no more than 3 days apart.
compute truemult=0.
format truemult (f1.0).
loop #i=1 to 7.
if ((outdat(#i)-outdat(#i+1) le 3) and (outdat(#i+1) ne 0))truemult=1.
end loop.

* Create warning flag variable oddmult to flag outcome dates less than nine months apart, but greater than 3 days apart.
compute oddmult=0.
format oddmult (f1.0).
loop #i=1 to 7.
if ((outdat(#i)-outdat(#i+1) gt 3) and (outdat(#i)-outdat(#i+1) le 273))oddmult=1.
end loop.

* Flag up any NCDS cases with an event prior to March 1991, who took part in the NCDS 5 survey.
* For them we delete this extraneous information, by setting the 'key' variable to 40, so that blank data is copied into that birth slot (we know no-one in NCDS had a birth event in the 40th slot).
* If they weren't interviewed in 1991, we leave the data as it is anyway.

loop #i=1 to 8.
Do if(outdat(#i) gt 0 and (outdat(#i) le yrmoda(1991,03,01)) and (dmpart=1)).
compute key(#i)=40.
compute pre91flg=1.
end if.
end loop.

* Re-arrange all 39 pregnancy history variables so that all the other information about each outcome is
* in the slot corresponding to the re-arranged birth date. Need first to copy variables to their v-prefix vectors, use loop
* structure to copy them to their correct position (x-prefix vectors), then copy them back to their ordinary names from
* the x-prefix vectors.

* Note this process only occurs for cases where we know the outcomes have ben wrongly bunched in the same pregnancy,
* or where the outcomes are in the wrong chronological order. Even if this is the case, we don't proceed if there are any
* outcomes with a year entered as '9999', or where we know there are any true multiple births, or any dubious multiple
* births (i.e. >3 days but less than 9 months apart). All these latter cases are flagged for manual scrutiny.

compute vpregnu1=pregnum.
compute vpregnu2=pregnum2.
compute vpregnu3=pregnum3.
compute vpregnu4=pregnum4.
compute vpregnu5=pregnum5.
compute vpregnu6=pregnum6.
compute vpregnu7=pregnum7.
compute vpregnu8=pregnum8.
compute vpregj1=pregj.
compute vpregj2=pregj2.
compute vpregj3=pregj3.
compute vpregj4=pregj4.
compute vpregj5=pregj5.
compute vpregj6=pregj6.
compute vpregj7=pregj7.
compute vpregj8=pregj8.
compute vcg1prg1=cgprega1.
compute vcg1prg2=cgprega4.
compute vcg1prg3=cgprega7.
compute vcg1prg4=cgpreg10.
compute vcg1prg5=cgpreg13.
compute vcg1prg6=cgpreg16.
compute vcg1prg7=cgpreg19.
compute vcg1prg8=cgpreg22.

compute vcg2prg1=cgprega2.
compute vcg2prg2=cgprega5.
compute vcg2prg3=cgprega8.
compute vcg2prg4=cgpreg11.
compute vcg2prg5=cgpreg14.
compute vcg2prg6=cgpreg17.
compute vcg2prg7=cgpreg20.
compute vcg2prg8=cgpreg23.

compute vcg3prg1=cgprega3.
compute vcg3prg2=cgprega6.
compute vcg3prg3=cgprega9.
compute vcg3prg4=cgpreg12.
compute vcg3prg5=cgpreg15.
compute vcg3prg6=cgpreg18.
compute vcg3prg7=cgpreg21.
compute vcg3prg8=cgpreg24.

compute vcpregb1=cpregb.
compute vcpregb2=cpregb2.
compute vcpregb3=cpregb3.
compute vcpregb4=cpregb4.
compute vcpregb5=cpregb5.
compute vcpregb6=cpregb6.
compute vcpregb7=cpregb7.
compute vcpregb8=cpregb8.

compute vmorprg1=morepreg.
compute vmorprg2=morepre2.
compute vmorprg3=morepre3.
compute vmorprg4=morepre4.
compute vmorprg5=morepre5.
compute vmorprg6=morepre6.
compute vmorprg7=morepre7.
compute vmorprg8=morepre8.

compute vpregk1=pregk.
compute vpregk2=pregk2.
compute vpregk3=pregk3.
compute vpregk4=pregk4.
compute vpregk5=pregk5.
compute vpregk6=pregk6.
compute vpregk7=pregk7.
compute vpregk8=pregk8.

compute vpregkw1=pregkw.
compute vpregkw2=pregkw2.
compute vpregkw3=pregkw3.
compute vpregkw4=pregkw4.
compute vpregkw5=pregkw5.
compute vpregkw6=pregkw6.
compute vpregkw7=pregkw7.
compute vpregkw8=pregkw8.

compute vpregl1=pregl.
compute vpregl2=pregl2.
compute vpregl3=pregl3.
compute vpregl4=pregl4.
compute vpregl5=pregl5.
compute vpregl6=pregl6.
compute vpregl7=pregl7.
compute vpregl8=pregl8.

compute vprega1=prega.
compute vprega2=prega2.
compute vprega3=prega3.
compute vprega4=prega4.
compute vprega5=prega5.
compute vprega6=prega6.
compute vprega7=prega7.
compute vprega8=prega8.
compute vprega9=prega9.
compute vprega10=prega10.
compute vprega11=prega11.
compute vprega12=prega12.
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compute vprega15=prega15.
compute vprega16=prega16.
compute vprega17=prega17.
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compute vprega19=prega19.
compute vprega20=prega20.
compute vprega21=prega21.
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compute vprega31=prega31.
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compute vprega37=prega37.
compute vprega38=prega38.
compute vprega39=prega39.
compute vprega40=prega40.

compute vpregc1=pregc.
compute vpregc2=pregc2.
compute vpregc3=pregc3.
compute vpregc4=pregc4.
compute vpregc5=pregc5.
compute vpregc6=pregc6.
compute vpregc7=pregc7.
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compute vpregc35=pregc35.
compute vpregc36=pregc36.
compute vpregc37=pregc37.
compute vpregc38=pregc38.
compute vpregc39=pregc39.
compute vpregc40=pregc40.

compute vpregd1=pregnad.
compute vpregd2=pregnad2.
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compute vpregd37=pregd37.
compute vpregd38=pregd38.
compute vpregd39=pregd39.
compute vpregd40=pregd40.

compute vkilo1=kilo.
compute vkilo2=kilo2.
compute vkilo3=kilo3.
compute vkilo4=kilo4.
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compute vkilo36=kilo36.
compute vkilo37=kilo37.
compute vkilo38=kilo38.
compute vkilo39=kilo39.
compute vkilo40=kilo40.

compute vpregf1=pregf.
compute vpregf2=pregf2.
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compute vpregf5=pregf5.
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compute vpregf37=pregf37.
compute vpregf38=pregf38.
compute vpregf39=pregf39.
compute vpregf40=pregf40.

compute vpregh1=pregh.
compute vpregh2=pregh2.
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compute vpregh4=pregh4.
compute vpregh5=pregh5.
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compute vpregh37=pregh37.
compute vpregh38=pregh38.
compute vpregh39=pregh39.
compute vpregh40=pregh40.

compute vwhopa1=whopara.
compute vwhopa2=whopara2.
compute vwhopa3=whopara3.
compute vwhopa4=whopara4.
compute vwhopa5=whopara5.
compute vwhopa6=whopara6.
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compute vwhopa34=whopara34.
compute vwhopa35=whopara35.
compute vwhopa36=whopara36.
compute vwhopa37=whopara37.
compute vwhopa38=whopara38.
compute vwhopa39=whopara39.
compute vwhopa40=whopara40.
compute vwerkd1=wherkid.
compute vwerkd2=wherkid2.
compute vwerkd3=wherkid3.
compute vwerkd4=wherkid4.
compute vwerkd5=wherkid5.
compute vwerkd6=wherkid6.
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compute vwerkd36=wherkid36.
compute vwerkd37=wherkid37.
compute vwerkd38=wherkid38.
compute vwerkd39=wherkid39.
compute vwerkd40=wherkid40.

compute vwatkd1=whatkid.
compute vwatkd2=whatkid2.
compute vwatkd3=whatkid3.
compute vwatkd4=whatkid4.
compute vwatkd5=whatkid5.
compute vwatkd6=whatkid6.
compute vwatkd7=whatkid7.
compute vwatkd8=whatkid8.
compute vwatkd9=whatkid9.
compute vwatkd10=whatkid10.
compute vwatkd11=whatkid11.
compute vwatkd12=whatkid12.
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compute vwatkd15=whatkid15.
compute vwatkd16=whatkid16.
compute vwatkd17=whatki17.
compute vwatkd18=whatki18.
compute vwatkd19=whatki19.
compute vwatkd20=whatki20.
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compute vwatkd36=whatki36.
compute vwatkd37=whatki37.
compute vwatkd38=whatki38.
compute vwatkd39=whatki39.
compute vwatkd40=whatki40.

Compute vabspa1=abspara.
Compute vabspa2=abspara2.
Compute vabspa3=abspara3.
Compute vabspa4=abspara4.
Compute vabspa5=abspara5.
Compute vabspa6=abspara6.
Compute vabspa7=abspara7.
Compute vabspa8=abspara8.
Compute vabspa9=abspara9.
Compute vabspa10=abspara10.
Compute vabspa11=abspara13.
Compute vabspa12=abspara16.
Compute vabspa13=abspara19.
Compute vabspa14=abspara22.
Compute vabspa15=abspara25.
Compute vabspa16=abspara28.
Compute vabspa17=abspara31.
Compute vabspa18=abspara34.
Compute vabspa19=abspara37.
Compute vabspa20=abspara40.
Compute vabspa21=abspara43.
Compute vabspa22=abspara46.
Compute vabspa23=abspara49.
Compute vabspa24=abspara52.
Compute vabspa25=abspara55.
Compute vabspa26=abspara58.
Compute vabspa27=abspara61.
Compute vabspa28=abspara64.
Compute vabspa29=abspara67.
Compute vabspa30=abspara70.
Compute vabspa31=abspara73.
Compute vabspa32=abspara76.
Compute vabspa33=abspara79.
Compute vabspa34=abspara82.
Compute vabspa35=abspara85.
Compute \( v\text{abspa36}=\text{abspar88} \).

Compute \( v\text{abspa37}=\text{abspar91} \).

Compute \( v\text{abspa38}=\text{abspar94} \).

Compute \( v\text{abspa39}=\text{abspar97} \).

Compute \( v\text{abspa40}=\text{abspar100} \).

Compute \( v\text{vabspb1}=\text{absparb} \).

Compute \( v\text{vabspb2}=\text{absparb2} \).

Compute \( v\text{vabspb3}=\text{absparb3} \).

Compute \( v\text{vabspb4}=\text{absparb4} \).

Compute \( v\text{vabspb5}=\text{absparb5} \).

Compute \( v\text{vabspb6}=\text{absparb6} \).

Compute \( v\text{vabspb7}=\text{absparb7} \).

Compute \( v\text{vabspb8}=\text{absparb8} \).

Compute \( v\text{vabspb9}=\text{absparb9} \).

Compute \( v\text{vabspb10}=\text{abspar11} \).

Compute \( v\text{vabspb11}=\text{abspar14} \).

Compute \( v\text{vabspb12}=\text{abspar17} \).

Compute \( v\text{vabspb13}=\text{abspar20} \).

Compute \( v\text{vabspb14}=\text{abspar23} \).

Compute \( v\text{vabspb15}=\text{abspar26} \).

Compute \( v\text{vabspb16}=\text{abspar29} \).

Compute \( v\text{vabspb17}=\text{abspar32} \).

Compute \( v\text{vabspb18}=\text{abspar35} \).

Compute \( v\text{vabspb19}=\text{abspar38} \).

Compute \( v\text{vabspb20}=\text{abspar41} \).

Compute \( v\text{vabspb21}=\text{abspar44} \).

Compute \( v\text{vabspb22}=\text{abspar47} \).

Compute \( v\text{vabspb23}=\text{abspar50} \).

Compute \( v\text{vabspb24}=\text{abspar53} \).

Compute \( v\text{vabspb25}=\text{abspar56} \).

Compute \( v\text{vabspb26}=\text{abspar59} \).

Compute \( v\text{vabspb27}=\text{abspar62} \).

Compute \( v\text{vabspb28}=\text{abspar65} \).

Compute \( v\text{vabspb29}=\text{abspar68} \).

Compute \( v\text{vabspb30}=\text{abspar71} \).

Compute \( v\text{vabspb31}=\text{abspar74} \).

Compute \( v\text{vabspb32}=\text{abspar77} \).

Compute \( v\text{vabspb33}=\text{abspar80} \).

Compute \( v\text{vabspb34}=\text{abspar83} \).

Compute \( v\text{vabspb35}=\text{abspar86} \).

Compute \( v\text{vabspb36}=\text{abspar89} \).

Compute \( v\text{vabspb37}=\text{abspar92} \).

Compute \( v\text{vabspb38}=\text{abspar95} \).

Compute \( v\text{vabspb39}=\text{abspar98} \).

Compute \( v\text{vabspb40}=\text{abspar101} \).

Compute \( v\text{vabspc1}=\text{absparc} \).

Compute \( v\text{vabspc2}=\text{absparc2} \).

Compute \( v\text{vabspc3}=\text{absparc3} \).

Compute \( v\text{vabspc4}=\text{absparc4} \).

Compute \( v\text{vabspc5}=\text{absparc5} \).

Compute \( v\text{vabspc6}=\text{absparc6} \).

Compute \( v\text{vabspc7}=\text{absparc7} \).

Compute \( v\text{vabspc8}=\text{absparc8} \).

Compute \( v\text{vabspc9}=\text{absparc9} \).

Compute \( v\text{vabspc10}=\text{abspar12} \).
Compute vabspc11=abspar15.
Compute vabspc12=abspar18.
Compute vabspc13=abspar21.
Compute vabspc14=abspar24.
Compute vabspc15=abspar27.
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Compute vabspc34=abspar84.
Compute vabspc35=abspar87.
Compute vabspc36=abspar90.
Compute vabspc37=abspar93.
Compute vabspc38=abspar96.
Compute vabspc39=abspar99.
Compute vabspc40=abspa102.

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Compute vabskb38=abski151.
Compute vabskb39=abski156.
Compute vabskb40=abski161.

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Compute vabskc21=abskid67.
Compute vabskc22=abskid72.
Compute vabskc23=abskid77.
Compute vabskc24=abskid82.
Compute vabskc25=abskid87.
Compute vabskc26=abskid92.
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Compute vabskc32=abski122.
Compute vabskc33=abski127.
Compute vabskc34=abski132.
Compute vabskc35=abski137.
Compute vabskc36=abski142.
Compute vabskc37=abski147.
Compute vabskc38=abski152.
Compute vabskc39=abski157.
Compute vabskc40=abski162.

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Compute vabskd22 = abskidd73.
Compute vabskd23 = abskidd78.
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Compute vabskd27 = abskidd98.
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Compute vabskd29 = abski108.
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Compute vabskd31 = abski118.
Compute vabskd32 = abski123.
Compute vabskd33 = abski128.
Compute vabskd34 = abski133.
Compute vabskd35 = abski138.
Compute vabskd36 = abski143.
Compute vabskd37 = abski148.
Compute vabskd38 = abski153.
Compute vabskd39 = abski158.
Compute vabskd40 = abski163.

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Compute vabske36 = abski144.
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Compute vabske40 = abski164.

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compute vpound7 = pound7.
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compute vpregg40=pregg40.

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Compute vpregi37=pregi37.
Compute vpregi38=pregi38.
Compute vpregi39=pregi39.
Compute vpregi40=pregi40.

* Having copied all the data into manageable v-prefix vectors, use loop structure to copy them to their correct position (x-prefix vectors), then copy them back to their ordinary names from the x-prefix vectors.
* As we can be sure at this stage we are only interested in single-baby pregnancies, the destination slots are numbered 1,6,11,16,21,26,31 and 36 (i.e. 5*i-4).

* Note this process only occurs for cases where we know the outcomes have been wrongly bunched in the same pregnancy,
* or where the outcomes are in the wrong chronological order, or (in the case of NCDS) where a birth event prior to March 1991 is recorded, and we know the member was interviewed at that last sweep in 1991. Even in the above cases, we don't proceed if there are any
* outcomes with a year entered as '9999', or where we know there are any true multiple outcomes, or any dubious multiple
* outcomes (i.e. >3 days but less than 9 months apart). The only exceptions are 26 'dubious' cases referred to specifically by
* serial number, where manual scrutiny revealed they contain no true multiple outcomes, and have no '9999' years, plus a further
* 12 cases where outcomes were not out of chronological order, but where slot 1 wasn't filled in (i.e. data started at slot 6, then
* slot 11,... etc.) So all data had to be moved 'back' by one pregnancy.

* Initiate variable 'changed', which flags up all cases that needed any kind of alteration (automatic or manual). If 'changed'
* remains zero, no need to overwrite existing variables with values of x-prefix vectors (which in any case, won't have been defined).

Compute changed=0.

Do if (((bunched=1 or ordrflag=1 or pre91flg=1) and (noyrflag=0 and truemult=0 and oddmult=0)) or (nserial='055086Z' or nserial='084004J' or nserial='110304M' or nserial='223020B' or
nserial='235018J' or nserial='288027J' or nserial='310017Y' or nserial='310107Z' or
nserial='385025V' or nserial='500375L' or nserial='510127W' or nserial='513053K' or
nserial='524002C' or nserial='950123U' or nserial='950154F' or nserial='985067J' or
nserial='X32084Z' or nserial='X82287X' or
nserial='Y20154L') or
(bserial='01005054' or bserial='01445068' or bserial='01840000' or bserial='01859054' or
bserial='01949055' or bserial='03121039' or bserial='03349048' or bserial='03579031' or
bserial='03997042' or bserial='04046069' or bserial='05548084' or bserial='05661087' or
bserial='06173005' or bserial='06226027' or bserial='06880097' or bserial='08239086' or bserial='08388069' or
bserial='08716094' or bserial='10455045' or bserial='11539049' or bserial='11871084' or bserial='12263073' or bserial='13045095' or
bserial='14978022' or bserial='15810064' or bserial='16293005' or bserial='16930005' or bserial='20432000' or bserial='01001053' or bserial='10788031' or bserial='14101044' or bserial='14574012' or bserial='15013072' or bserial='17015079' or bserial='20432000' or bserial='02182094' or bserial='03257097' or bserial='03310042' or
bserial='05984097' or bserial='09763027')

Compute changed=1.

loop #i=1 to 8.
Do if(key(#i) ne 0).
compute xprega(5*#i-4)=vprega(key(#i)).
compute xpregc(5*#i-4)=vpregc(key(#i)).
compute xpregd(5*#i-4)=vpregd(key(#i)).
compute xkilo(5*#i-4)=vkilo(key(#i)).
compute xpregf(5*#i-4)=vpregf(key(#i)).
compute xpregh(5*#i-4)=vpregh(key(#i)).
compute xwhopa(5*#i-4)=vwhopa(key(#i)).
compute xwerkd(5*#i-4)=vwerkd(key(#i)).
compute xwatkd(5*#i-4)=vwatkd(key(#i)).
compute xabspa(5*#i-4)=vabspa(key(#i)).
compute xabspb(5*#i-4)=vabspb(key(#i)).
compute xabspc(5*#i-4)=vabspc(key(#i)).
compute xabska(5*#i-4)=vabska(key(#i)).
compute xabskc(5*#i-4)=vabskc(key(#i)).
compute xabskd(5*#i-4)=vabskd(key(#i)).
compute xabske(5*#i-4)=vabske(key(#i)).
compute xabsmn(5*#i-4)=vabsmn(key(#i)).
compute xgramm(5*#i-4)=vgramm(key(#i)).
compute xpregey(5*#i-4)=vpregey(key(#i)).
compute xpregi(5*#i-4)=vpregi(key(#i)).
compute xpound(5*#i-4)=vpound(key(#i)).
compute xounce(5*#i-4)=vounce(key(#i)).
compute xprged(5*#i-4)=vprged(key(#i)).
compute xpregm(5*#i-4)=vpregm(key(#i)).
compute xpregg(5*#i-4)=vpregg(key(#i)).
compute xwhopb(5*#i-4)=vwhopb(key(#i)).
compute xabska(5*#i-4)=vabska(key(#i)).
compute xabsmn(5*#i-4)=vabsmn(key(#i)).
compute xgramm(5*#i-4)=vgramm(key(#i)).
compute xpregey(5*#i-4)=vpregey(key(#i)).
compute xpregi(5*#i-4)=vpregi(key(#i)).
compute xpound(5*#i-4)=vpound(key(#i)).
compute xounce(5*#i-4)=vounce(key(#i)).
compute xprged(5*#i-4)=vprged(key(#i)).
compute xpregm(5*#i-4)=vpregm(key(#i)).
compute xpregg(5*#i-4)=vpregg(key(#i)).
compute xwhopb(5*#i-4)=vwhopb(key(#i)).
compute xabska(5*#i-4)=vabska(key(#i)).
compute xabsmn(5*#i-4)=vabsmn(key(#i)).
compute xgramm(5*#i-4)=vgramm(key(#i)).
compute xpregey(5*#i-4)=vpregey(key(#i)).
compute xpregi(5*#i-4)=vpregi(key(#i)).

* set 'pregnum' for the new pregnancy slot (1-8) associated with the new position for this
* baby, to exactly 1, as we know it's not a multiple birth (i.e. we know truemult=0).
* In the case of NCDS pre-March 91 birth events, though, we want 'pregnum' to be zero.
compute xpregnu(#i)=1.
* In the case of NCDS pre-March 91 birth events, though, we want 'pregnum' to be zero,
  as we’re deleting all reference to that event.

If (pre91flg=1 and key(#i)=40)xpregnu(#i)=0.

end if.
end loop.

* Copy the 'pregnancy' variables associated with that baby to the correct pregnancy slot (1-8).
* Note that within the 3-loop structure (#i,#j,#k) the copying is independent of the value of #k.
  i.e. anything up to five babies wrongly bunched in one pregnancy will have identical
  pregnancy data copied to different new pregnancy slots.

* Note also that, in the case of NCDS pre-March 91 birth events, the data for the 'eighth'
  pregnancy *(i.e. that corresponding to the 40th birth event) will be copied, and in all such NCDS cases
  we know this is blank.

loop #i=1 to 8.
  loop #j=1 to 8.
    loop #k=1 to 5.
      Do if (key(#i)=(5*#j+#k-5)).
        compute xpregj(#i)=vpregj(#j).
        compute xcg1prg(#i)=vcg1prg(#j).
        compute xcg2prg(#i)=vcg2prg(#j).
        compute xcg3prg(#i)=vcg3prg(#j).
        compute xcpregb(#i)=vcpregb(#j).
        compute xpregk(#i)=vpregk(#j).
        compute xpregkw(#i)=vpregkw(#j).
        compute xpregl(#i)=vpregl(#j).
      end if.
    end loop.
  end loop.
end loop.
end if.

* Now address every single case that needed a manual alteration.

Do if (nserial='083034N').
  Compute changed=2.
  Compute key40(1)=21.
  Compute key40(6)=11.
  Compute key40(7)=16.
  Compute key40(11)=6.
  Compute key40(16)=1.
  Compute keypreg(1)=5.
  Compute keypreg(2)=3.
  Compute keypreg(3)=2.
  Compute keypreg(4)=1.
end if.

* The following cases all had exclusively pre-March 1991 birth event data, and were
  interviewed at NCDS5, so delete all birthslot information (i.e. make changed=2, but no key
  values).

Do if (nserial='094029H' or nserial='330027Q' or nserial='986039J').
Compute changed =2.
End if.

Do if (nserial='093273P').
Compute changed=2.
Compute key40(1)=1.
Compute keypreg(1)=1.
End if.

Do if (nserial='095023Z' or nserial='181038T' or nserial='960072L').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute keypreg(1)=1.
End if.

Do if (nserial='095006Z' or nserial='509228V' or nserial='950288D' or nserial='960029K').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (nserial='120132Q').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute key40(7)=2.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (nserial='233008U' or nserial='285020B' or nserial='500353Z' or nserial='527001S' or
nserial='565063F' or nserial='650025W').
Compute changed=2.
Compute key40(1)=1.
Compute keypreg(1)=1.
End if.

Do if (nserial='280041J').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(16)=16.
Compute key40(21)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
Compute keypreg(5)=5.
End if.

Do if (nserial='280053R').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=16.
Compute key40(12)=11.
Compute key40(16)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=4.
Compute keypreg(4)=5.
End if.

Do if (nserial='289141M' or nserial='382004V' or nserial='421030K' or nserial='529009V' or nserial='X25050R').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=2.
Compute keypreg(1)=1.
End if.

Do if (nserial='515085K').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=7.
Compute key40(7)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (nserial='581068J').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=11.
Compute key40(11)=16.
Compute key40(21)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
Compute keypreg(5)=5.
End if.

Do if (nserial='591050U').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(16)=16.
Compute key40(21)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
End if.

Do if (nserial='620037K').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.
Do if (nserial='630002V').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(16)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
End if.

Do if (nserial='730049F').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute key40(11)=11.
Compute key40(16)=16.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
End if.

Do if (nserial='730130N').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=7.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (nserial='987100P').
Compute changed=2.
Compute key40(1)=11.
Compute key40(2)=11.
Compute key40(6)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (nserial='989011A').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=7.
Compute key40(6)=7.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (nserial='X25101F').
Compute changed=2.
Compute key40(1)=3.
Compute key40(2)=2.
Compute key40(6)=1.
Compute keypreg(1)=1.
Compute keypreg(6)=1.
End if.
Do if (nserial='X37008K').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=2.
Compute key40(6)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (nserial='X38005J').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=11.
Compute keypreg(1)=2.
Compute keypreg(2)=3.
End if.

Do if (nserial='X82344H').
Compute changed=2.
Compute key40(1)=6.
Compute key40(2)=1.
Compute keypreg(1)=1.
End if.

Do if (nserial='Y21037M').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(16)=16.
Compute key40(21)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
Compute keypreg(5)=5.
End if.

Do if (nserial='041034A').
Compute changed=2.
Compute key40(1)=3.
Compute key40(6)=2.
Compute key40(11)=1.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
Compute keypreg(3)=1.
End if.

Do if (nserial='130007T').
Compute changed=2.
Compute key40(1)=11.
Compute key40(2)=12.
Compute key40(6)=6.
Compute key40(11)=1.
Compute keypreg(1)=3.
Compute keypreg(2)=2.
Compute keypreg(3)=1.
End if.
Do if (nserial='283003R').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=3.
Compute key40(6)=6.
Compute key40(7)=7.
Compute key40(8)=8.
Compute key40(11)=11.
Compute key40(16)=1.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=1.
End if.

Do if (nserial='422073K').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (nserial='424029S').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(16)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
End if.

Do if (nserial='511159R').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=2.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
End if.

Do if (nserial='561006W').
Compute changed=2.
Compute key40(1)=11.
Compute key40(6)=6.
Compute key40(11)=1.
Compute keypreg(1)=3.
Compute keypreg(2)=2.
Compute keypreg(3)=1.
End if.

Do if (nserial='782013B').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=2.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
End if.

Do if (nserial='Y33089Z').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=11.
Compute key40(11)=6.
Compute key40(16)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=2.
Compute keypreg(4)=4.
End if.

Do if (nserial='043013C').
Compute changed=2.
Compute key40(1)=6.
Compute key40(2)=7.
Compute key40(6)=1.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (nserial='044001A').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=16.
Compute key40(11)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=4.
Compute keypreg(3)=5.
End if.

Do if (nserial='183016T').
Compute changed=2.
Compute key40(1)=3.
Compute keypreg(1)=1.
End if.

Do if (nserial='188030P').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=3.
Compute key40(3)=1.
Compute keypreg(1)=1.
End if.

Do if (nserial='500015C').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (nserial='500219V').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (nserial='509254W').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute keypreg(1)=1.
End if.

Do if (nserial='730084J').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=7.
Compute key40(11)=11.
Compute key40(16)=21.
Compute key40(21)=16.
Compute key40(26)=26.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=5.
Compute keypreg(5)=4.
Compute keypreg(6)=6.
End if.

Do if (nserial='950290Q').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=3.
Compute key40(3)=6.
Compute key40(4)=7.
Compute key40(5)=1.
Compute key40(6)=12.
Compute key40(7)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
End if.

Do if (nserial='980004E').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=3.
Compute key40(3)=1.
Compute keyreg(1)=1.
End if.

Do if (nserial='986100J').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=3.
Compute key40(6)=1.
Compute keyreg(1)=1.
Compute keyreg(6)=1.
End if.

Do if (nserial='X38008Q').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=11.
Compute keyreg(1)=1.
Compute keyreg(2)=2.
End if.

Do if (nserial='Y00174D').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(16)=16.
Compute key40(17)=21.
Compute key40(21)=26.
Compute keyreg(1)=1.
Compute keyreg(2)=2.
Compute keyreg(3)=3.
Compute keyreg(4)=4.
Compute keyreg(5)=6.
End if.

Do if (bserial='05486061').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute key40(11)=12.
Compute key40(12)=11.
Compute key40(16)=16.
Compute key40(21)=21.
Compute keyreg(1)=2.
Compute keyreg(2)=1.
Compute keyreg(3)=3.
Compute keyreg(4)=4.
Compute keyreg(5)=5.
End if.

Do if (bserial='08052057').
Compute changed=2.
Compute key40(1)=7.
Compute key40(2)=6.
Compute key40(6)=11.
Compute keypreg(1)=2.
Compute keypreg(2)=3.
End if.

Do if (bserial='09362043' or bserial='09541070').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=16.
Compute key40(16)=11.
Compute key40(21)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=4.
Compute keypreg(4)=3.
Compute keypreg(5)=5.
End if.

Do if (bserial='00279065').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=2.
Compute key40(11)=1.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
Compute keypreg(3)=1.
End if.

Do if (bserial='05794018').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=2.
Compute key40(11)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
Compute keypreg(3)=2.
End if.

Do if (bserial='07020000').
Compute changed=2.
Compute key40(1)=2.
Compute key40(6)=1.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
End if.

Do if (bserial='08531015').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
End if.
Do if (bserial='09047035').
Compute changed=2.
Compute key40(1)=11.
Compute key40(6)=6.
Compute key40(11)=1.
Compute keypreg(1)=3.
Compute keypreg(2)=2.
Compute keypreg(3)=1.
End if.

Do if (bserial='13799017').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute key40(11)=11.
Compute key40(16)=16.
Compute key40(21)=21.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
Compute keypreg(5)=5.
End if.

Do if (bserial='00508088').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=11.
Compute key40(3)=6.
Compute key40(6)=16.
Compute key40(11)=21.
Compute key40(16)=26.
Compute key40(21)=11.
Compute key40(26)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=4.
Compute keypreg(3)=5.
Compute keypreg(4)=6.
End if.

Do if (bserial='03279000').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=21.
Compute key40(11)=26.
Compute key40(16)=6.
Compute key40(21)=11.
Compute key40(26)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=5.
Compute keypreg(3)=6.
Compute keypreg(4)=2.
Compute keypreg(5)=3.
Compute keypreg(6)=4.
End if.

Do if (bserial='06196084').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute key40(7)=11.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (bserial='07342034').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=7.
Compute key40(11)=26.
Compute key40(12)=27.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=6.
End if.

Do if (bserial='08039031').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=2.
Compute key40(6)=16.
Compute key40(11)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='10231037').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute key40(11)=16.
Compute key40(16)=21.
Compute key40(17)=22.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=4.
Compute keypreg(4)=5.
End if.

Do if (bserial='10822000').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute key40(7)=11.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (bserial='02706048').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='03403069').
Compute changed=2.
Compute key40(1)=16.
Compute key40(2)=21.
Compute key40(3)=26.
Compute key40(6)=1.
Compute key40(11)=6.
Compute key40(16)=11.
Compute keypreg(1)=4.
Compute keypreg(2)=1.
Compute keypreg(3)=2.
Compute keypreg(4)=3.
End if.

Do if (bserial='03783010').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=11.
Compute key40(6)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='03947061').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='05521004').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=2.
Compute key40(7)=3.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
End if.

Do if (bserial='05671063').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=11.
Compute key40(6)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='06548062').
Compute changed=2.
Compute key40(1)=21.
Compute key40(6)=1.
Compute key40(11)=6.
Compute key40(12)=7.
Compute key40(16)=11.
Compute key40(21)=16.
Compute key40(26)=26.
Compute keypreg(1)=5.
Compute keypreg(2)=1.
Compute keypreg(3)=2.
Compute keypreg(4)=3.
Compute keypreg(5)=4.
Compute keypreg(6)=6.
End if.

Do if (bserial='06982024').
Compute changed=2.
Compute key40(1)=6.
Compute key40(2)=7.
Compute key40(6)=1.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (bserial='07149006').
Compute changed=2.
Compute key40(1)=11.
Compute key40(2)=12.
Compute key40(6)=1.
Compute key40(11)=6.
Compute keypreg(1)=3.
Compute keypreg(2)=1.
Compute keypreg(3)=2.
End if.

Do if (bserial='07339085').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=11.
Compute key40(7)=12.
Compute key40(11)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=2.
End if.

Do if (bserial='08995083').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=2.
Compute key40(6)=3.
Compute key40(11)=4.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
Compute keypreg(3)=1.
End if.

Do if (bserial='11155092').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=2.
Compute keypreg(1)=1.
End if.

Do if (bserial='12150094').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=11.
Compute key40(11)=16.
Compute key40(12)=17.
Compute key40(16)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=4.
Compute keypreg(4)=2.
End if.

Do if (bserial='12693010').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='12958013').
Compute changed=2.
Compute key40(1)=3.
Compute key40(2)=4.
Compute key40(6)=2.
Compute key40(11)=1.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
Compute keypreg(3)=1.
End if.

Do if (bserial='14046048').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=16.
Compute key40(16)=21.
Compute key40(21)=26.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=4.
Compute keypreg(4)=5.
Compute keypreg(5)=6.
End if.

Do if (bserial='14989074').
Compute changed=2.
Compute key40(1)=6.
Compute key40(6)=1.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (bserial='15372086').
Compute changed=2.
Compute key40(1)=6.
Compute key40(2)=7.
Compute key40(6)=1.
Compute keypreg(1)=2.
Compute keypreg(2)=1.
End if.

Do if (bserial='16102076').
Compute changed=2.
Compute key40(1)=4.
Compute key40(6)=3.
Compute key40(11)=1.
Compute key40(12)=2.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
Compute keypreg(3)=1.
End if.

Do if (bserial='00250035').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
Compute keypreg(3)=1.
End if.

Do if (bserial='00665097').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=11.
Compute key40(11)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=4.
End if.

Do if (bserial='00700040').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute keypreg(1)=1.
End if.

Do if (bserial='00820070').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='00912021').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=12.
Compute key40(12)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='01266041').
Compute changed=2.
Compute key40(1)=11.
Compute key40(6)=6.
Compute key40(11)=1.
Compute key40(12)=2.
Compute keypreg(1)=3.
Compute keypreg(2)=2.
Compute keypreg(3)=1.
End if.

Do if (bserial='01695003').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=4.
End if.

Do if (bserial='02713099').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='03379077').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=12.
Compute key40(12)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='04350025').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='04494008').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute key40(11)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=4.
End if.

Do if (bserial='04498009').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=7.
Compute key40(7)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='05170001').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='05806060').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
End if.

Do if (bserial='05991047').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute key40(11)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=4.
End if.

Do if (bserial='06145027').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(11)=1.
End if.

Do if (bserial='06177006').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='06180130').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='06313002').
Compute changed=2.
Compute key40(1)=2.
Compute key40(6)=1.
Compute key40(7)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=1.
End if.

Do if (bserial='06394088').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=7.
Compute key40(7)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='06481063').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.
Do if (bserial='06922067').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='07051003').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute key40(12)=16.
Compute key40(16)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
Compute keypreg(4)=5.
End if.

Do if (bserial='07405032').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute key40(11)=12.
Compute keypreg(1)=1.
End if.

Do if (bserial='08162010').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='08460092').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='09002054').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=12.
Compute key40(12)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='10355068').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute key40(11)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=4.
End if.

Do if (bserial='10517068').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='11257019' or bserial='11519097').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(11)=16.
Compute keypreg(1)=1.
End if.

Do if (bserial='11553050').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(11)=16.
Compute key40(12)=16.
Compute key40(16)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='12786037').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=6.
Compute key40(7)=11.
Compute key40(11)=16.
Compute key40(16)=21.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=4.
Compute keypreg(4)=5.
End if.

Do if (bserial='13189078').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=7.
Compute key40(7)=6.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
End if.

Do if (bserial='13930037' or bserial='14137024').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute keypreg(1)=1.
End if.

Do if (bserial='14414078').
Compute changed=2.
Compute key40(1)=6.
Compute key40(2)=1.
Compute keypreg(1)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='14812036').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='15675043').
Compute changed=2.
Compute key40(1)=1.
Compute key40(6)=7.
Compute key40(7)=6.
Compute key40(11)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

Do if (bserial='15838018').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute key40(6)=11.
Compute key40(11)=16.
Compute keypreg(1)=1.
Compute keypreg(2)=3.
Compute keypreg(3)=4.
End if.

Do if (bserial='16643042').
Compute changed=2.
Compute key40(1)=1.
Compute key40(2)=6.
Compute keypreg(1)=1.
End if.

Do if (bserial='16992080').
Compute changed=2.
Compute key40(1)=2.
Compute key40(2)=1.
Compute key40(6)=6.
Compute key40(11)=11.
Compute keypreg(1)=1.
Compute keypreg(2)=2.
Compute keypreg(3)=3.
End if.

* For all manually-altered cases, work out pregnum values for pregnancy slots 1-8.

Do if (changed=2).
loop #i=1 to 8.
do if (key40(5*#i-4) ne 0).
compute xpregnu(#i)=1.
loop #j=1 to 4.
if (key40(5*#i+#j-4) ne 0)xpregnu(#i)=xpregnu(#i)+1.
end loop.
end if.
end loop.

loop #i=1 to 40.
Do if(key40(#i) ne 0).
compute xprega(#i)=vprega(key40(#i)).
compute xpregc(#i)=vpregc(key40(#i)).
compute xpregd(#i)=vpregd(key40(#i)).
compute xkilo(#i)=vkilo(key40(#i)).
compute xpregf(#i)=vpregf(key40(#i)).
compute xpregh(#i)=vpregh(key40(#i)).
compute xwhopa(#i)=vwhopa(key40(#i)).
compute xwhopb(#i)=vwhopb(key40(#i)).
compute xabspa(#i)=vabspa(key40(#i)).
compute xabspb(#i)=vabspb(key40(#i)).
compute xabspc(#i)=vabspc(key40(#i)).
compute xabska(#i)=vabska(key40(#i)).
compute xabskb(#i)=vabskb(key40(#i)).
compute xabskc(#i)=vabskc(key40(#i)).
compute xabskd(#i)=vabskd(key40(#i)).
compute xabspke(#i)=vabspke(key40(#i)).
compute xpound(#i)=vpound(key40(#i)).
compute xwhopa(#i)=vwhopa(key40(#i)).
compute xwhopb(#i)=vwhopb(key40(#i)).
compute xabspa(#i)=vabspa(key40(#i)).
compute xabspb(#i)=vabspb(key40(#i)).
compute xabspc(#i)=vabspc(key40(#i)).
compute xabska(#i)=vabska(key40(#i)).
compute xabskb(#i)=vabskb(key40(#i)).
compute xabskc(#i)=vabskc(key40(#i)).
compute xabskd(#i)=vabskd(key40(#i)).
compute xabspke(#i)=vabspke(key40(#i)).
compute xpound(#i)=vpound(key40(#i)).
compute xwhopa(#i)=vwhopa(key40(#i)).
compute xwhopb(#i)=vwhopb(key40(#i)).
compute xabspa(#i)=vabspa(key40(#i)).
compute xabspb(#i)=vabspb(key40(#i)).
compute xabspc(#i)=vabspc(key40(#i)).
compute xabska(#i)=vabska(key40(#i)).
compute xabskb(#i)=vabskb(key40(#i)).
compute xabskc(#i)=vabskc(key40(#i)).
compute xabskd(#i)=vabskd(key40(#i)).
compute xabspke(#i)=vabspke(key40(#i)).
compute xpound(#i)=vpound(key40(#i)).
compute xwhopa(#i)=vwhopa(key40(#i)).
compute xwhopb(#i)=vwhopb(key40(#i)).
compute xabspa(#i)=vabspa(key40(#i)).
compute xabspb(#i)=vabspb(key40(#i)).
compute xabspc(#i)=vabspc(key40(#i)).
compute xabska(#i)=vabska(key40(#i)).
compute xabskb(#i)=vabskb(key40(#i)).
compute xabspke(#i)=vabspke(key40(#i)).
compute xpound(#i)=vpound(key40(#i)).
compute xwhopa(#i)=vwhopa(key40(#i)).
compute xwhopb(#i)=vwhopb(key40(#i)).
compute xabspa(#i)=vabspa(key40(#i)).
compute xabspb(#i)=vabspb(key40(#i)).
compute xabspc(#i)=vabspc(key40(#i)).
compute xabska(#i)=vabska(key40(#i)).
compute xabsmn(#i)=vabsmn(key40(#i)).
compute xgramm(#i)=vgramm(key40(#i)).
compute xprgey(#i)=vprgey(key40(#i)).
compute xabsyr(#i)=vabsyr(key40(#i)).
compute xprege(#i)=vprege(key40(#i)).
compute xpregi(#i)=vpregi(key40(#i)).
end if.
end loop.

Loop #i=1 to 8.
Do if (keypreg(#i) ne 0).
compute xpregj(#i)=vpregj(keypreg(#i)).
compute xcg1prg(#i)=vcg1prg(keypreg(#i)).
compute xcg2prg(#i)=vcg2prg(keypreg(#i)).
compute xcg3prg(#i)=vcg3prg(keypreg(#i)).
compute xcpregb(#i)=vcpregb(keypreg(#i)).
compute xpregk(#i)=vpregk(keypreg(#i)).
compute xpregkw(#i)=vpregkw(keypreg(#i)).
compute xpregl(#i)=vpregl(keypreg(#i)).
end if.
end loop.
end if.

* Compute new value of morepreg(1-8) from knowledge of whether there are any babies in
the next-most recent pregnancy slot.
Do if (changed=1 or changed=2).

loop #i=1 to 8.
compute xmorprg(#i)=2.
end loop.
loop #i=1 to 7.
If (xpregnu(#i+1) ge 1)xmorprg(#i)=1.
end loop.

* Copy all the data from the x-prefix vectors to the original variables, overwriting data in wrong
birthslots.
compute pregnum =xpregnu1.
compute pregnum2=xpregnu2.
compute pregnum3=xpregnu3.
compute pregnum4=xpregnu4.
compute pregnum5=xpregnu5.
compute pregnum6=xpregnu6.
compute pregnum7=xpregnu7.
compute pregnum8=xpregnu8.

compute pregj =xpregj1.
compute pregj2=xpregj2.
compute pregj3=xpregj3.
compute pregj4=xpregj4.
compute pregj5=xpregj5.
compute pregj6=xpregj6.
compute pregj7=xpregj7.
compute pregj8=xpregj8.
compute cgprega1 = xcg1prg1.
compute cgprega4 = xcg1prg2.
compute cgprega7 = xcg1prg3.
compute cgprega10 = xcg1prg4.
compute cgprega13 = xcg1prg5.
compute cgprega16 = xcg1prg6.
compute cgprega19 = xcg1prg7.
compute cgprega22 = xcg1prg8.

compute cgprega2 = xcg2prg1.
compute cgprega5 = xcg2prg2.
compute cgprega8 = xcg2prg3.
compute cgprega11 = xcg2prg4.
compute cgprega14 = xcg2prg5.
compute cgprega17 = xcg2prg6.
compute cgprega20 = xcg2prg7.
compute cgprega23 = xcg2prg8.

compute cgprega3 = xcg3prg1.
compute cgprega6 = xcg3prg2.
compute cgprega9 = xcg3prg3.
compute cgprega12 = xcg3prg4.
compute cgprega15 = xcg3prg5.
compute cgprega18 = xcg3prg6.
compute cgprega21 = xcg3prg7.
compute cgprega24 = xcg3prg8.

compute cpregb = xcpregb1.
compute cpregb2 = xcpregb2.
compute cpregb3 = xcpregb3.
compute cpregb4 = xcpregb4.
compute cpregb5 = xcpregb5.
compute cpregb6 = xcpregb6.
compute cpregb7 = xcpregb7.
compute cpregb8 = xcpregb8.

compute morepreg = xmorprg1.
compute morepre2 = xmorprg2.
compute morepre3 = xmorprg3.
compute morepre4 = xmorprg4.
compute morepre5 = xmorprg5.
compute morepre6 = xmorprg6.
compute morepre7 = xmorprg7.
compute morepre8 = xmorprg8.

compute pregk = xpregk1.
compute pregk2 = xpregk2.
compute pregk3 = xpregk3.
compute pregk4 = xpregk4.
compute pregk5 = xpregk5.
compute pregk6 = xpregk6.
compute pregk7 = xpregk7.
compute pregk8 = xpregk8.
compute pregkw =xpregkw1.
compute pregkw2=xpregkw2.
compute pregkw3=xpregkw3.
compute pregkw4=xpregkw4.
compute pregkw5=xpregkw5.
compute pregkw6=xpregkw6.
compute pregkw7=xpregkw7.
compute pregkw8=xpregkw8.

compute pregl =xpregl1.
compute pregl2=xpregl2.
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compute pregl7=xpregl7.
compute pregl8=xpregl8.

compute prega =xprega1.
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compute pregc39=xpregc39.
compute pregc40=xpregc40.

compute pregd=xpregd1.
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compute pregd38=xpregd38.
compute pregd39=xpregd39.
compute pregd40=xpregd40.

compute kilo =xkilo1.
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compute kilo36=xkilo36.
compute kilo37=xkilo37.
compute kilo38=xkilo38.
compute kilo39=xkilo39.
compute kilo40=xkilo40.

compute pregf =xpregf1.
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compute pregf16=xpregf16.
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compute pregf37=xpregf37.
compute pregf38=xpregf38.
compute pregf39=xpregf39.
compute pregf40=xpregf40.

compute pregh =xpregh1.
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compute pregh4=xpregh4.
compute pregh5=xpregh5.
compute pregh6=xpregh6.
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compute pregh14=xpregh14.
compute pregh15=xpregh15.
compute pregh16=xpregh16.
compute pregh17=xpregh17.
compute pregh18=xpregh18.
compute pregh19=xpregh19.
compute pregh20=xpregh20.
compute pregh21=xpregh21.
compute pregh22=xpregh22.
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compute pregh24=xpregh24.
compute pregh25=xpregh25.
compute pregh26=xpregh26.
compute pregh27=xpregh27.
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compute pregh37=xpregh37.
compute pregh38=xpregh38.
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compute pregh40=xpregh40.

compute whopara =xwhopa1.
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compute whopara3=xwhopa3.
compute whopara4=xwhopa4.
compute whopara5=xwhopa5.
compute whopara6=xwhopa6.
compute whopara7=xwhopa7.
compute whopara8=xwhopa8.
compute whopara9=xwhopa9.
compute whopara10=xwhopa10.
compute whopara12=xwhopa11.
compute whopara14=xwhopa12.
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compute whopara20=xwhopa15.
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compute whopara26=xwhopa18.
compute whopara28=xwhopa19.
compute whopara30=xwhopa20.
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compute whopara34=xwhopa22.
compute whopara36=xwhopa23.
compute whopara38=xwhopa24.
compute whopara40=xwhopa25.
compute whopara42=xwhopa26.
compute whopar44=xwhopa27.
compute whopar46=xwhopa28.
compute whopar48=xwhopa29.
compute whopar50=xwhopa30.
compute whopar52=xwhopa31.
compute whopar54=xwhopa32.
compute whopar56=xwhopa33.
compute whopar58=xwhopa34.
compute whopar60=xwhopa35.
compute whopar62=xwhopa36.
compute whopar64=xwhopa37.
compute whopar66=xwhopa38.
compute whopar68=xwhopa39.
compute whopar70=xwhopa40.

compute wherkid =xwerkd1.
compute wherkid2=xwerkd2.
compute wherkid3=xwerkd3.
compute wherkid4=xwerkd4.
compute wherkid5=xwerkd5.
compute wherkid6=xwerkd6.
compute wherkid7=xwerkd7.
compute wherkid8=xwerkd8.
compute wherkid9=xwerkd9.
compute wherkid10=xwerkd10.
compute wherkid11=xwerkd11.
compute wherkid12=xwerkd12.
compute wherkid13=xwerkd13.
compute wherkid14=xwerkd14.
compute wherkid15=xwerkd15.
compute wherkid16=xwerkd16.
compute wherkid17=xwerkd17.
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compute wherkid26=xwerkd26.
compute wherkid27=xwerkd27.
compute wherkid28=xwerkd28.
compute wherkid29=xwerkd29.
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compute wherkid38=xwerkd38.
compute wherkid39=xwerkd39.
compute wherkid40=xwerkd40.

compute whatkid =xwatkd1.
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compute whatkid5=xwatkd5.
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compute whatki40=xwatkd40.

Compute abspara =xabspa1.
Compute abspara2=xabspa2.
Compute abspara3=xabspa3.
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Compute abspara5=xabspa5.
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Compute abspar10=xabspa10.
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Compute abspar16=xabspa12.
Compute abspar19=xabspa13.
Compute abspar22=xabspa14.
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Compute abspar28=xabspa16.
Compute abspar31=xabspa17.
Compute abspar34=xabspa18.
Compute abspar37=xabspa19.
Compute abspar40=xabspa20.
Compute \( \text{abspar}43 = \text{xabspa}21 \).
Compute \( \text{abspar}46 = \text{xabspa}22 \).
Compute \( \text{abspar}49 = \text{xabspa}23 \).
Compute \( \text{abspar}52 = \text{xabspa}24 \).
Compute \( \text{abspar}55 = \text{xabspa}25 \).
Compute \( \text{abspar}58 = \text{xabspa}26 \).
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Compute \( \text{abspar}70 = \text{xabspa}30 \).
Compute \( \text{abspar}73 = \text{xabspa}31 \).
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Compute \( \text{abspar}79 = \text{xabspa}33 \).
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Compute \( \text{abspar}91 = \text{xabspa}37 \).
Compute \( \text{abspar}94 = \text{xabspa}38 \).
Compute \( \text{abspar}97 = \text{xabspa}39 \).
Compute \( \text{abspar}100 = \text{xabspa}40 \).

Compute \( \text{absparb} = \text{xabspb}1 \).
Compute \( \text{absparb}2 = \text{xabspb}2 \).
Compute \( \text{absparb}3 = \text{xabspb}3 \).
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Compute \( \text{abspar}38 = \text{xabspb}19 \).
Compute \( \text{abspar}41 = \text{xabspb}20 \).
Compute \( \text{abspar}44 = \text{xabspb}21 \).
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Compute \( \text{abspar}53 = \text{xabspb}24 \).
Compute \( \text{abspar}56 = \text{xabspb}25 \).
Compute \( \text{abspar}59 = \text{xabspb}26 \).
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Compute \( \text{abspar}65 = \text{xabspb}28 \).
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Compute absparc = xabspc1.
Compute absparc2 = xabspc2.
Compute absparc3 = xabspc3.
Compute absparc4 = xabspc4.
Compute absparc5 = xabspc5.
Compute absparc6 = xabspc6.
Compute absparc7 = xabspc7.
Compute absparc8 = xabspc8.
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Compute abspar15 = xabspc11.
Compute abspar18 = xabspc12.
Compute abspar21 = xabspc13.
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Compute abspar87 = xabspc35.
Compute abspar90 = xabspc36.
Compute abspar93 = xabspc37.
Compute abspar96 = xabspc38.
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Compute abspa102 = xabspc40.

Compute abskidb = xabskb1.
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Compute abskidb5 = xabskb5.
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Compute abskidb7 = xabskb7.
Compute abskidb8 = xabskb8.
Compute abskidb9 = xabskb9.
Compute abskid11 = xabskb10.
Compute abskid16 = xabskb11.
Compute abskid21 = xabskb12.
Compute abskid26 = xabskb13.
Compute abskid31 = xabskb14.
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Compute abskid41=xabskb16.
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Compute abskid96=xabskb27.
Compute abski101=xabskb28.
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Compute abski121=xabskb32.
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Compute abski141=xabskb36.
Compute abski146=xabskb37.
Compute abski151=xabskb38.
Compute abski156=xabskb39.
Compute abski161=xabskb40.

Compute abskidc =xabskc1.
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Compute \( \text{prege17} = x_{\text{prege17}} \).
Compute \( \text{prege18} = x_{\text{prege18}} \).
Compute \( \text{prege19} = x_{\text{prege19}} \).
Compute \( \text{prege20} = x_{\text{prege20}} \).
Compute \( \text{prege21} = x_{\text{prege21}} \).
Compute \( \text{prege22} = x_{\text{prege22}} \).
Compute \( \text{prege23} = x_{\text{prege23}} \).
Compute \( \text{prege24} = x_{\text{prege24}} \).
Compute \( \text{prege25} = x_{\text{prege25}} \).
Compute \( \text{prege26} = x_{\text{prege26}} \).
Compute \( \text{prege27} = x_{\text{prege27}} \).
Compute \( \text{prege28} = x_{\text{prege28}} \).
Compute \( \text{prege29} = x_{\text{prege29}} \).
Compute \( \text{prege30} = x_{\text{prege30}} \).
Compute \( \text{prege31} = x_{\text{prege31}} \).
Compute \( \text{prege32} = x_{\text{prege32}} \).
Compute \( \text{prege33} = x_{\text{prege33}} \).
Compute \( \text{prege34} = x_{\text{prege34}} \).
Compute \( \text{prege35} = x_{\text{prege35}} \).
Compute \( \text{prege36} = x_{\text{prege36}} \).
Compute \( \text{prege37} = x_{\text{prege37}} \).
Compute \( \text{prege38} = x_{\text{prege38}} \).
Compute \( \text{prege39} = x_{\text{prege39}} \).
Compute \( \text{prege40} = x_{\text{prege40}} \).

Compute \( \text{pregi} = x_{\text{pregi1}} \).
Compute \( \text{pregi2} = x_{\text{pregi2}} \).
Compute pregi3=xpregi3.
Compute pregi4=xpregi4.
Compute pregi5=xpregi5.
Compute pregi6=xpregi6.
Compute pregi7=xpregi7.
Compute pregi8=xpregi8.
Compute pregi9=xpregi9.
Compute pregi10=xpregi10.
Compute pregi11=xpregi11.
Compute pregi12=xpregi12.
Compute pregi13=xpregi13.
Compute pregi14=xpregi14.
Compute pregi15=xpregi15.
Compute pregi16=xpregi16.
Compute pregi17=xpregi17.
Compute pregi18=xpregi18.
Compute pregi19=xpregi19.
Compute pregi20=xpregi20.
Compute pregi21=xpregi21.
Compute pregi22=xpregi22.
Compute pregi23=xpregi23.
Compute pregi24=xpregi24.
Compute pregi25=xpregi25.
Compute pregi26=xpregi26.
Compute pregi27=xpregi27.
Compute pregi28=xpregi28.
Compute pregi29=xpregi29.
Compute pregi30=xpregi30.
Compute pregi31=xpregi31.
Compute pregi32=xpregi32.
Compute pregi33=xpregi33.
Compute pregi34=xpregi34.
Compute pregi35=xpregi35.
Compute pregi36=xpregi36.
Compute pregi37=xpregi37.
Compute pregi38=xpregi38.
Compute pregi39=xpregi39.
Compute pregi40=xpregi40.

end if.

* Transfer values of vector compdt to forty permanent variables to facilitate manual scrutiny

compute compda1=compdt1.
compute compda2=compdt2.
compute compda3=compdt3.
compute compda4=compdt4.
compute compda5=compdt5.
compute compda6=compdt6.
compute compda7=compdt7.
compute compda8=compdt8.
compute compda9=compdt9.
compute compda10=compdt10.
compute compda11=compdt11.
compute compda12=compdt12.
compute compda13=compdt13.
compute compda14=compdt14.
compute compda15=compdt15.
compute compda16=compdt16.
compute compda17=compdt17.
compute compda18=compdt18.
compute compda19=compdt19.
compute compda20=compdt20.
compute compda21=compdt21.
compute compda22=compdt22.
compute compda23=compdt23.
compute compda24=compdt24.
compute compda25=compdt25.
compute compda26=compdt26.
compute compda27=compdt27.
compute compda28=compdt28.
compute compda29=compdt29.
compute compda30=compdt30.
compute compda31=compdt31.
compute compda32=compdt32.
compute compda33=compdt33.
compute compda34=compdt34.
compute compda35=compdt35.
compute compda36=compdt36.
compute compda37=compdt37.
compute compda38=compdt38.
compute compda39=compdt39.
compute compda40=compdt40.

compute newtotby=0.
format newtotby(f1.0).
loop #i=1 to 40.
  if(xprega(#i) ne 0)newtotby=newtotby+1.
end loop.
end if.

Variable labels missdany "Warning indicator for birthdates still not picked up".
Value labels missdany
  0 "None missed"
  1 "At least one missed".
fre missdany.

compute babydscp=0.
if(totbaby ne newtotby)babydscp=1.

* temporary.
* select if (changed=1 or changed=2).
* fre babydscp.

* temporary.
* select if (babydscp=1 and (changed=1 or changed=2)).
* fre bserial nserial.

fre pre91flg.
temporary.
select if (pre91flg=1).
fre nserial.
execute.

* re-declare missing values which were 'undeclared' at the start.

missing values prega prega2 prega3 prega4 prega5 prega6 prega7 prega8 prega9 prega10
prega11 prega12 prega13 prega14 prega15 prega16 prega17 prega18 prega19 prega20
prega21 prega22 prega23 prega24 prega25 prega26 prega27 prega28 prega29 prega30
prega31 prega32 prega33 prega34 prega35 prega36 prega37 prega38 prega39 prega40 (9).

missing values preged preged2 preged3 preged4 preged5 preged6 preged7 preged8
preged9 preged10
preged11 preged12 preged13 preged14 preged15 preged16 preged17 preged18 preged19
preged20
preged21 preged22 preged23 preged24 preged25 preged26 preged27 preged28 preged29
preged30
preged31 preged32 preged33 preged34 preged35 preged36 preged37 preged38 preged39
preged40
pregem pregem2 pregem3 pregem4 pregem5 pregem6 pregem7 pregem8 pregem9
pregem10
pregem11 pregem12 pregem13 pregem14 pregem15 pregem16 pregem17 pregem18
pregem19 pregem20
pregem21 pregem22 pregem23 pregem24 pregem25 pregem26 pregem27 pregem28
pregem29 pregem30
pregem31 pregem32 pregem33 pregem34 pregem35 pregem36 pregem37 pregem38
pregem39 pregem40 (99).

missing values pregey pregey2 pregey3 pregey4 pregey5 pregey6 pregey7 pregey8 pregey9
pregey10
pregey11 pregey12 pregey13 pregey14 pregey15 pregey16 pregey17 pregey18 pregey19
pregey20
pregey21 pregey22 pregey23 pregey24 pregey25 pregey26 pregey27 pregey28 pregey29
pregey30
pregey31 pregey32 pregey33 pregey34 pregey35 pregey36 pregey37 pregey38 pregey39
pregey40 (9999).
Youth Factors and Labour Market Experience in Job Satisfaction

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