EUROPEAN LONGITUDINAL STUDY OF PREGNANCY AND CHILDHOOD (ELSPAC)

Report on a WHO Meeting

Bristol, United Kingdom
13–18 September 1999
ABSTRACT

The European Longitudinal Study of Pregnancy and Childhood (ELSPAC) was initiated by the WHO Regional Office for Europe in 1985 to identify factors influencing children’s health in European countries. The study is designed to cover various aspects of the life and environment of pregnant women and children. The 1999 meeting of the Principal Investigators was devoted to evaluating the hands-on examinations being carried out at the study centres in the Isle of Man, the Czech Republic and the United Kingdom and planned for those in Slovakia and Ukraine. A secondary aim of the meeting was to consider eight comparative papers, comprising four on the effects of cigarette smoking in the different countries, two relating to symptoms and signs in the first three months of pregnancy, one on factors related to whether or not the pregnancy was planned, and one on the intention to breastfeed.

It had been agreed at the 1998 meeting that the aim of the ELSPAC study and the protocol would be updated and put on the World Wide Web. This had not happened but the new updated version, agreed at the current meeting, will be put on the Web. There was general agreement that children should continue to be followed up, and the next ELSPAC questionnaires are planned for children aged 11 years.

Keywords

LONGITUDINAL STUDIES
PREGNANCY
CHILD WELFARE
DATA COLLECTION – methods
CZECH REPUBLIC
SLOVAKIA
UKRAINE
ISLE OF MAN
RUSSIAN FEDERATION
UNITED KINGDOM
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Introduction

The 1999 meeting of the European Longitudinal Study of Pregnancy and Childhood (ELSPAC) principal investigators was devoted mainly to comparing methodology and experience of the 7/8 year examinations and preparing papers for submission to international journals. Country reports were discussed at the preliminary session and are summarized below. The Meeting was attended by participants from four centres (Annex 1), and reports from two others were discussed. Participants regretted that Dr Vivianna Mangiaterra was unable to attend. Dr Valkyova from Slovakia was also unable to attend due to lack of funding, and Dr Ignatyeva from the Russian Federation did not attend as she felt that she had made no progress in the last two years and consequently would not be able to contribute.

Country reports

Czech Republic

The study in Brno started with expected dates of delivery from 1 March 1991 to 30 June 1992 and in Znojmo from 1 April 1991 to 30 June 1992. Consequently the last children to reach 7 years of age had done so at the end of June 1999. Their 7-year birthday cards were sent 3 weeks before the questionnaires; two of these were based on the child, one being sent to the mother and one to the father. In Brno 3300 families had been contacted and almost 2800 had returned questionnaires (85%). In Znojmo the response rate was not so good due to the lack of funding for follow-up with families, the problem being the distance and the lack of good public transport.

Dr Kukla brought the back translations for all mothers’ questionnaires up to 7 years of age, and promised that the back translations of the fathers’ questionnaires, followed by the children’s questionnaires, would be sent shortly.

All data had been coded and keyed up to and including the 3-year questionnaires, with the exception of the 3-year health condition questionnaire.

The study had had a problem in linking prenatal to postnatal questionnaires, as the family identity had changed. This has now been rectified so that linkage is easy.

The study had been published widely in the Czech Republic in the 10 months since the last meeting, but papers were needed in international publications to convince the Czech funding agencies of the importance of the ELSPAC study.

The team is urgently discussing with government agencies ways to find funding to continue ELSPAC beyond the current contact point. Current plans are to obtain a grant both to prepare questionnaires for age 11 and pilot them and to help with the publication of data already obtained.

Hands-on testing at age 8 started in April in two parts: a psychometric examination and a physical and anthropometric examination.
The psychometric examination is undertaken by Professor Smekal and his team. IQ is measured using the WISC, and the child is also asked to copy a human figure and draw a fruit tree followed by a memory test and an interview on family roles. So far 192 children have taken the whole set of examinations and a further 144 have done just the WISC. The complete set of examinations takes between 2½ and 3 hours.

The physical examination includes a normal paediatric examination, blood pressure, pulse rate, vision, hearing, skin and anthropometry (weight, height, and head, waist, hip, chest and arm circumferences). Blood samples have not been taken as money could not be obtained for this, nor were allergy tests carried out. A fitness step test is, however, being done and it is intended to start motor coordination tests.

The sample invited includes only the families that have responded and completed questionnaires. The psychometric tests are carried out in the mornings and six children are examined every day. The paediatric examinations are carried out on a different day, and the team is able to examine seven children a day.

The Czech study was successful as regards contacts at school. The Chief of the Brno Education Office supported the study and told schools to support the survey. In addition, the team had personal discussions with the schools and the teachers’ questionnaires were well completed. No payment was given for this, but teachers were given a card entitling them to discounts from a number of shops. Teachers were also enthusiastic about, and motivated by, a conference held by Professor Smekal for teachers concerning problems with children.

Parents had asked for information regarding the teachers’ review of their children, but the Bristol meeting thought that this would be breaking confidentiality and would not be warranted.

Isle of Man

The programme in the Isle of Man is progressing well. Financial support has been achieved from the government and other sources for the 7-year examination and this funding is sufficient to continue until the year 2001. Further funding will then be required.

At 5 years there was a 70% response rate to questionnaires (i.e. 70% of those who were still on the island). This comprised 725 completed questionnaires. All non-responders have been visited. The 5-year data have been coded and keyed but not yet transferred to Bristol. The clinics are going extremely well with high response rates and enthusiasm. An approach to teachers asking them to complete questionnaires about the strengths and difficulties of children in their classes has also gone very well, with a response rate of nearly 100%.

Physical examinations of the children started in September 1998. So far, of the original birth sample of 1300, 600 have had a physical examination. The physical examination clinic runs on two days per week. All parents eligible for the study have been invited regardless of their response to the questionnaire; 89% of eligible parents have attended and undertaken 9 different tests. The study team is also examining the 350 children that had moved on to the island since the birth date. They expect to have examined 900 children by Easter 2000. Three blood samples are being taken from 65% of the children; one for DNA extraction, one clotted and one in EDTA. Immediate assays determine the full blood counts, the glucose and lipid levels, the iron profile and total IgE. The remaining blood is stored. The samples for DNA are transferred to Bristol for DNA extraction. The study is collecting teeth, hair and nails.
The psychometric measures comprising the WISC and the WORD are taking place in schools. The examination takes between 2 and 2½ hours and 450 children have been tested. Again, there is little sign of any problem.

There is some concern about tightening up the protocol on the Isle of Man, in order to ensure that the examinations are being undertaken in a similar way to those in Avon. For example, a visit from Dr John Henderson of the Bristol study showed that the lung function tests had drifted from the protocol. This has now been rectified. Other ways of cross-validation are important.

Russian Federation

Professor Ignatyeva did not attend the Meeting as she felt that the study in the Russian Federation had not progressed at all since she had attended in 1997. The group considered this a great pity, as the information had been collected up to 3 years of age and would be a wonderful resource if it could be coded and keyed. Unfortunately the report to the 1998 meeting that 2000 completed questionnaires had been coded and keyed was a misunderstanding. The complete data set was only available for 300 families.

Participants suggested that WHO should be asked to become involved in trying to encourage completion of the coding and keying of this important data resource. They also noted that Professor Ignatyeva would be retiring in two years time or so, and it would be important to have a replacement to take on the organization of the study if at all possible.

Slovakia

In Dr Valkyova’s absence, Dr Kukla reported on the Slovakian study. Dr Valkyova had also sent a report and an update for the protocol. (Dr Valkyova had been unable to attend as her Institute was currently without a director and no decisions could be made concerning money for travel.)

A start had been made on sending out the 5-year questionnaires in September 1998, and this task was still continuing. A high migration rate of the respondents was causing problems with the return of questionnaires. The 3-year questionnaires had been completed with 1480 questionnaires returned from parents and 1980 health questionnaires completed.

Ukraine

Unfortunately Professor Shkiriak-Nyzhnyk had to attend a meeting of the Bioethics Committee at the Council of Europe and had only been able to visit Bristol for three days prior to the ELSPAC meeting. Dr Chyslovskia was able, however, to report on the Ukrainian study. All study children are now more than 3 years old and the 5-year questionnaires are being administered in five of the original centres. Only Ivano Frankivsk has stopped and will not do this sweep but aims to continue with the study at age 7 if the money is available.

All data collected in the different centres are sent to the coordinator in the centre in Kiev where they are coded and keyed.

The medical reports are abstracted by paediatricians without payment and sent to the coordinating centre.
The children are not yet 7 years of age, but the Ukrainian team has been checking their addresses so that they have up-to-date information on who is available to be invited. At present, of the 5000 children involved, the study has the addresses of 4000 and knows that approximately 700 have moved out of the study areas.

At the age of 3, responses had been received from approximately 3000 of the families. Medical reports are still being completed and the numbers involved will be greater than 3000.

The main problems for the study are financial, particularly in trying to find different sources of funding. The coordinating centre in Kiev is funded partly by the Medical Academy of Science and, for the computer centre, the Illinois University of Chicago. Some support comes from the city. The study manages to organize various advantages for the teams in the different centres (for example, a trip to Prague).

Validation studies have been carried out on about 10% of the population.

Publications from the Ukraine data have gradually increased both in Ukrainian and in international journals.

Every year the Kiev Institute of Paediatrics, Obstetrics and Gynaecology reports to the President on the status of child health, and this results in the ELSPAC study continuing to be held in high regard.

Sub-studies have included determination of the toxins in breast-milk. A detailed examination of about 200 of the 3-year-old children in Kiev and Mariupol was undertaken for coordination, vision, speech and IQ, as well as a paediatric and otolaryngological examination including the blood, urine, hair and nails. There was a 100% response rate. The results have not yet been linked to the ELSPAC questionnaire data, but this will be a valuable resource for validation of the questionnaire information.

The children in the study will be 7 years old on 1 October 2000. The aim of the Ukrainian team is to examine all 5000.

United Kingdom (Avon)

The study is continuing well in Avon, with good participation from the families. Self completion questionnaire data are available up to the 3-year stage in a clean and edited format. Many analyses are being performed on this data. Data from the Delivery Questionnaire are proceeding more slowly, and to date about 6000 are available for analysis. These are selected from specific cohorts of families in the study so that certain specific analyses can still go ahead. Some 71 peer-reviewed publications have now been accepted or are in print, 19 in the last year.

The children are now aged between 6 years 9 months and 8 years 5 months. As they come to 7 years 6 months, they are invited to the Focus at 7 clinic, where a whole battery of observations are made, mostly physical. The observations are only made with the consent of the child and its parent(s). About 70% are willing to have a blood sample taken. Where this is refused, a saliva sample is requested. The whole set of observations takes half a day per child. The accuracy of the data is validated by re-inviting about 3% of the attenders. After much discussion it was decided to delay the mental/cognitive testing until a year later, and those observations are now being piloted with the first children due to attend in October 1999, at age 8 years 6 months.
Attendance at the clinic appears to have a very positive effect on the families involved, and helps to keep them keen to stay in the study.

The study will be continued (in Avon at least) but with fewer questionnaires: only two mailings per year. This started in September 1999 with a 97-month questionnaire, including a set of questions about the onset of puberty. It is also planned to re-invite those families missed at the time of birth, to join the study now.

At the end of the summer term 1999 the team wrote to all schools in the district likely to have children of the correct age, in school year 3, with a questionnaire to the head teacher about the school facilities, and questionnaires to the class teacher about his/her class, style of teaching and attitude together with a questionnaire for each child in the class of the right age, asking his/her opinion of the child’s abilities. This will be followed at the start of the autumn term with a maths test for each of these children, and then repeated in 2000 and in 2001 as the rest of the cohort goes through this school class.

Following WHO’s request to produce a report on smoking from the ELSPAC data, a programmer was recruited to work on the ELSPAC data and put it all into a common format, thus making analysis much easier. The aim is to produce a set of files, one for each questionnaire but with every country’s data in, similar to the Avon built files. This has already made the extraction and analysis of the datasets that have been received much simpler.

**Report from the ELSPAC coordinating centre**

**Back translations**

The current status of back-translations received by the Bristol office is shown in Table 1. It had been assumed that the Slovak study had used the Czech questionnaires, but apparently the Czech questionnaires had been translated into Slovak. It was therefore agreed that back-translations should be requested from the Slovak version to English.

**Coding and editing**

It was important to ensure that each study centre carried out coding and editing instructions in the way outlined in the coloured sheets attached to each of the original questionnaires, before using the data or transferring them to the Bristol office.

The Czech Republic reported that they were using their own software to do this, and will send their coding and editing instructions to Bristol.

**Data received in Bristol**

An outline of the data received in Bristol is shown in Annex 3.

**ELSPAC Protocol**

In the light of developments in the different countries, the ELSPAC Survey Development and Protocol was updated by participants at the meeting to create a 6th edition. It was agreed that this should be put on the World Wide Web as soon as possible.
Table 1. Back-translations of self-completion questionnaires received in Bristol office

<table>
<thead>
<tr>
<th></th>
<th>Czech Republic</th>
<th>Slovakia</th>
<th>Russian Federation</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Partner</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
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<tr>
<td>6 weeks</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>Partner</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Child</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6 months</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>Partner</td>
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<tr>
<td>Child</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>+</td>
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<tr>
<td>18 months</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Partner</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Child</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3 years</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Partner</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Child</td>
<td>−</td>
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<td>+</td>
<td>+</td>
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<tr>
<td>5 years</td>
<td>+</td>
<td>−</td>
<td>N</td>
<td>−</td>
</tr>
<tr>
<td>Partner</td>
<td>−</td>
<td>−</td>
<td>N</td>
<td>−</td>
</tr>
<tr>
<td>Child</td>
<td>−</td>
<td>−</td>
<td>N</td>
<td>−</td>
</tr>
<tr>
<td>7 years</td>
<td>+</td>
<td>−</td>
<td>N</td>
<td>−</td>
</tr>
<tr>
<td>Partner</td>
<td>−</td>
<td>−</td>
<td>N</td>
<td>−</td>
</tr>
<tr>
<td>Child</td>
<td>−</td>
<td>−</td>
<td>N</td>
<td>−</td>
</tr>
</tbody>
</table>

Clinical records

<table>
<thead>
<tr>
<th></th>
<th>Czech Republic</th>
<th>Slovakia</th>
<th>Russian Federation</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Neonatal admissions</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Death questionnaire</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Hospital admissions</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6 month health report</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>18 month health report</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>3 year health report</td>
<td>+</td>
<td>−</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>5 year health report</td>
<td>−</td>
<td>−</td>
<td>−</td>
<td>−</td>
</tr>
</tbody>
</table>

+ = back-translation received; − = no back-translation received
N = questionnaire not being administered.

Assessments at 7 years

The initial aim of the ELSPAC study had been to look at the way in which early events and environmental factors influenced the development of the child as measured at 7 years. The oldest study children reached the age of 7 in 1998.

Timing of 7-Year assessments

The study sample to be tested at 7 should ideally consist of all those who were eligible at the time of birth. Recent immigrants could also be included.

The different cohorts would reach the age of 7 at different time points. It was not, however, necessary to do the study when the child was exactly 7. Indeed, it might be more advantageous to wait for later. The study centres had the following start dates:
Czech Republic March 1999, in Brno, not Znojmo
Isle of Man June 1998, psychometric tests; September 1998, physical tests
Russian Federation Plans abandoned for lack of finance
Slovakia September 2000
Ukraine September 2000
United Kingdom (Avon) September 1998 (for the mainly physical test); the psychometric tests are to start in October 1999

The tests being carried out

The three countries who were in the field or planning to be in the field shortly compared plans and actualities as to the measurements below. Each country is carrying out each test unless indicated to the contrary.

Anthropometric measures

- Standing height
- Weight
- Circumference of head
- Circumference of hip
- Circumference of waist
- Circumference of arm
- Bioelectric impedance (Isle of Man and Avon only)
- Sitting height (only Avon, but the Isle of Man intend to start shortly)
- Flat feet (only Isle of Man)
- Skinfold thicknesses –not being carried out since they are prone to observer bias and bioelectric impedance is far more friendly to the child
- Scoliosis identification (United Kingdom (Avon) and the Isle of Man). Posture and scoliosis (Czech Republic).

Skin observations

- Identification of atopic dermatitis/eczema using the ISAAC protocol
- Melanocytic naevi (not in Avon, although in the Avon area this has been carried out on a 10% sub-sample of children at ages 4 and 5)
- Hair colour (Isle of Man)
- Freckles (Isle of Man).

Blood pressure

Blood pressure is taken using a Dynamap 9301 vital signs monitor (in Czech Republic by digital tonometer if funding available). This records two measures of blood pressure, pulse rate, room temperature. All three will be used by each centre. In the Czech Republic the child is then exercised for 10 minutes and the blood pressure repeated.
It was found that the Isle of Man were measuring blood pressure while the child was lying down. This has been changed to measuring it in a sitting position, to make it comparable with the other centres. The date on which this change was made was recorded.

Dental observations
Each centre has found great difficulty with this aspect of the study. In the Czech Republic it is being done as part of the paediatric examination, and it is proposed to obtain information from the community dental service, which examines each 7-year-old. In Avon funding for the dental side of examinations has proved extremely difficult. In the Isle of Man there is interest in examining the children’s teeth at age 12 but no cooperation from local dentists for examination at this point in time. A dental hygienist speaks to each child, administers a short verbal questionnaire and makes superficial observations.

Lung function
Lung function will be measured using a Fleisch electronic spirometer connected to a computer-based pulmonary function package (Spirotac III, Vitalograph, United Kingdom). An incentive-based system in the package will be used for all children, and American Thoracic Society guidelines will be used to assess the acceptability and reproducibility of the test results.

A nose-clip will be applied and children will be instructed to blow through a mouthpiece. An on-screen incentive will be used to encourage maximum effort. Testers will be instructed in fundamental quality control criteria to ensure adequate reproducibility of results. Five forced expiratory manoeuvres which fulfil these criteria will be measured and the data stored for each child. The flow-volume curves thus generated will be inspected later to ensure that they meet acceptability criteria. The following measurements will then be recorded: peak expiratory flow (PEF), forced expiratory volume in 1 second (FEV\(_{1.0}\)), slow vital capacity (SVC) and forced vital capacity (FVC) and maximal flow at 25%, 50% and 75% of forced vital capacity (V\(_{max}25\), V\(_{max}50\), V\(_{max}75\)). These data will be saved as absolute values and as percentages predicted for the child’s height.

This is being carried out by the Isle of Man at age 7. They also record temperature and humidity at the time of doing the test. Avon will carry out the lung function measure as part of the 8 year tests when it will be combined with the test of bronchial hyper-responsiveness to a methacholine challenge. The Czech Republic have no plans to do lung function.

Motor coordination
The Isle of Man are using the whole ABC at age 7. Avon are using as much of the ABC as they can fit into 20 minutes. The Czech Republic will try to start this.

Allergy tests
These are only being carried out in Avon.

Vision
The following are being carried out in Avon: eye preference; visual acuity (LogMAR) at distance; ocular alignment at near and distance; stereopsis; motor fusion (20D prism); convergence and accommodation; suppression (Worths 4 dot); contrast sensitivity (Pelli-Robson); autorefraction.

In the Isle of Man only half the cohort is being examined by an orthoptist and the other half by a trained nurse who looks at the visual acuity, stereopsis and colour vision and refers to the
orthoptist any children with possible problems. When measurement of the 7-year-olds has been completed in April 2000 it is planned to visit schools and complete the testing of all children who did not undergo the full programme. The Czech Republic are carrying out visual acuity, convergence tests and a colour vision test.

Hearing
Audiometry is being carried out in Avon and the Isle of Man. Both centres are using an audiometer measuring up to 16 000 Hz. In the Czech Republic only a simple screen will be carried out and then children who have not heard a voice spoken softly near either ear are referred for full testing of audiometry. It was pointed out that this will not produce data comparable to the findings from a complete set of tests as being carried out in the Isle of Man and Avon.

Tympanometry is being carried out in both the Isle of Man and Avon. In the the Isle of Man printouts from the tympanograms are assessed by the audiologist as A, B, C₁ and C₂ according to the guidelines given in the ELSPAC protocol. Note is taken as to whether apparently “flat” tracings are accompanied by any detectable hearing loss from the audiometry. All hard copy of tracings of audiometry and tympanometry are assessed monthly by the visiting audiology specialist from Liverpool.

The Isle of Man are also using the Automated Toy Test.

Intellectual development
The WISC is being carried out in full in the Isle of Man. It will be carried out in full in the Czech Republic and in an abbreviated form in Avon (using alternate items). The Czech Republic is using the 10-item WISC, and the Isle of Man uses the 12-item WISC. The Isle of Man report that 450 children have been tested and that the children enjoy it.

Reading tests
The Isle of Man is using the WORD test. Avon is using partly the WORD and is also testing spelling (using tests devised by Peter Bryant for the study) and a phoneme awareness test,

Speech and language
The Isle of Man is using the WOLD but reports that this is not very successful. Avon will be starting specific parts of the WOLD in October. The Czech Republic will rely on the vocabulary subtest of the WISC.

Biological samples
Blood is being taken by the Isle of Man and Avon and a sample of EDTA blood sent to the DNA laboratories in Southmead, Bristol where DNA will be extracted. Two other samples are collected: one EDTA and one clotted sample. These are spun down and serum and plasma, red cells and buffy coats aliquoted and stored (in the Isle of Man serum and plasma only).

Teeth, hair and nail samples are being collected at intervals in Avon and the Isle of Man.

Other tests
- Introductory interview with the child, memory test (including retention after two hours), test of copying different figures and drawing a fruit tree (Czech Republic).
- Questionnaire sent to the children containing a request to draw a man or woman (Avon and the Isle of Man), scored according to the guidelines described for the “Draw a Man Test” (Goodenough, LDA 1976).
- DANVA test (Isle of Man and Avon).
- Locus of control interview (all countries). The Isle of Man reported that the self-esteem interview and strengths and difficulties interview were not acceptable to the child at this age. Teachers and parents will, however, be asked to complete the strengths and difficulties questionnaire in each site.
  N.B. A test of creativity devised by Professor Smekal will be used in Brno at age 10 and may be adapted for use by the other centres.
- In Avon and the Isle of Man a Diet Questionnaire and a 3-day dietary diary comprising one week-end day and two weekdays is completed by the child’s parent and checked by a (dietician) researcher on the day of the 7-year assessment.

Publications and authorship

Publications achieved

Each country provided a list of all publications and presentations. These have been included in the 6th edition of the ELSPAC Protocol. All 1998 and 1999 publications are listed in Annex 2 to this report.

Authorship

Some slight changes were agreed concerning the way in which appropriate authors were assigned for collaborative publications in connection with the number of authors from each country.

Publications in the international peer-reviewed press were important for raising funds for the ELSPAC study in each country. The study directors had devoted an enormous amount of work to data collection but had little time themselves to write up the results. Experts in different fields should therefore be encouraged to analyse and write up the data.

For collaborative papers with no assistance from outside the ELSPAC teams, one to three names only from each country whose data are being used should be included in the list of authors, the names to be decided by the director in each country.

Where papers are written by people outside the study teams, the authors’ names should appear first on the paper followed by names of representatives from each country (as detailed above).

Rules for comparative analyses

1. A 1–2 page outline of the study should be submitted to Jean Golding who will fax it to members of the CEC for outline approval.

2. If the CEC approve, the scientist concerned will get approval directly from the study director of each country being compared.
3. With the approval from those study directors willing to cooperate, the scientist will approach Hugh Simmons with a request for the data.

When the paper has been written, it will be sent to each study director of the countries used for (a) comments and alterations, and (b) identification of the named author from each country.

On publication the first author should send each other author and each member of the CEC two copies of the paper.

Planned ELSPAC books

Three books are currently planned.

The Methodology Book

*Chapters 1–8* will be the same as in the Protocol, although Professor Shkiriak-Nyzhnyk has offered to submit the text of a methodology paper that she and Susan Monaghan have written. This has not yet been received. Participants felt that the aims and protocol should be updated and put on the World Wide Web.

*Chapter 9  External environment at the study sites*

Dr Vadim Kagramanov sent an outline in November 1996 and has received data as requested from (almost) all centres. Since Dr Kagramanov has not completed the chapter with what he already has, it was decided that the information already prepared by each country should be put on the web as it stands. It would form subsections of this chapter.

*Chapter 10  Comparative analysis of the demographic situation in participating countries (1970–1994)*

This chapter has been written by Rimma Ignatyeva in Russian and not yet been translated. It was previously agreed that the data for each country should be sent to that country to see if it was satisfied with the information. For clarity, graphs should be in colour, but this had major costing implications. Dr Kukla prepared his own data as he did not think that the WHO version was sufficiently accurate for his country and this has been given to Professor Ignatyeva. The Ukrainian Government has requested that their own demographic data should be prepared as it was a sensitive subject. The Minister of Health wished to receive a copy before the chapter is finalized. Generally, perinatal and other mortality data will be difficult to portray accurately because of varying definitions, and a descriptive analysis only may be used in some areas.

10.1 Birth rate trends (including age-related and fertility trends)
10.2 Mortality trends
10.3 Natural growth (decrease) trends
10.4 Infant mortality trends
10.5 Perinatal mortality trends
10.6 Childhood mortality trends
10.7 Maternal mortality trends
10.8 Induced abortion rate trends
10.9 Use of contraceptive trends
10.10 Life expectancy at birth trends
10.11 Conclusion
In 1998 it had been suggested that the Russian version of this chapter should be sent for comment to the Czech Republic, Slovakia and Ukraine but that an effort should be made to translate it and send it to the other study directors as soon as possible. There was no indication that this had occurred and consequently it was decided to put the information already prepared by each country on the World Wide Web with cross-references to WHO reports where appropriate. These would form sub-sections of this chapter.

Chapter 11 Organization and distribution of health services with particular reference to maternal and child health care (1990-1995)

Oleysha Hulchiy had kindly offered to produce this chapter in 1997, but there had been no sign of progress. The Meeting agreed that the various documents that did exist should be put on the Web, including a paper written by Debbie Baker and Ilona Koupilova.

The following chapters already exist and should be updated annually:

Chapter 12 Acknowledgements (including funders)
Chapter 13 Literature cited
Chapter 14 Publications.

Giving Birth in the Nineties

This book will be written by Stephanie Goodfellow, Ilona Koupilova and Thalia Dragonas and will use data from the Antenatal, Delivery and 6-week questionnaires. At this Meeting Drs Goodfellow and Koupilova discussed in detail the analyses to be carried out and identified the variables to be used.

The proposed structure of the book is shown below:

I. Attitudes and expectations
   1. Reactions to becoming a parent
   2. Expectations of labour
   3. Components of antenatal care

II. Labour
   1. Circumstances surrounding delivery (including social support)
   2. The partners’ reactions to labour and delivery

III. The post-partum period
   1. Social and domestic circumstances
   2. Infant care
   3. Emotional wellbeing of mother and partner
   4. Maternal morbidity
   5. Paternal morbidity
   6. Coping at home
   7. Breastfeeding (including time to first feed) and early attachment.

Analyses will use individually linked data and will take account of parity, mother’s age, marital and educational status, obstetric history, and the course and outcome of the index pregnancy.
These topics will first be developed as papers for publication in peer-reviewed journals and then be adapted to a chapter format.

Delivering a Baby in the 90s
This book will be devoted to the medical aspects of pregnancy, labour, delivery and the neonatal period, using data derived mainly from the Delivery, Neonatal Admissions and Death questionnaires.

Dr Kukla will coordinate the preparation of the book and edit it, in collaboration with Dr Crha and Professor Ventruba from the obstetric clinic, and with Ida and Jozef Války.

A list of chapter headings is as follows:

1. Complications of late pregnancy
2. Problems with labour and delivery
3. Mode and circumstances of delivery
4. Third phase of delivery and problems
5. Mortality (Fetal and neonatal)
6. Birthweight, birth length, gestation
7. Apgar and other signs of birth asphyxia and trauma
8. Multiple pregnancies
9. Neonatal admissions
10. Morbidity of the young infant

These topics will first be developed as papers for publication in peer-reviewed journals and then be adapted to a chapter format for possible publication as a supplement to a journal.

Papers prepared
The group drafted and agreed the following papers:

1. Similarity of factors predicting smoking at the start of pregnancy in five European centres of different social and cultural backgrounds.
2. Factors predicting which women smoking at the start of pregnancy will then stop.
5. Comparison of the time to conception and exposure to tobacco smoke in two centres of the ELSPAC study.

Other papers for which data were analysed but for which the text has yet to be written include:

2. Factors associated with intention to breastfeed: a cross-cultural analysis.
Collaborative projects completed

The research commissioned on smoking effects, funded by WHO headquarters, had been completed on time and a final report agreed.

The Meeting discussed five papers. Versions of these were agreed and prepared ready for submission to peer-reviewed international journals (see 1–5 above).

Planned grant proposals

Three different collaborative projects were planned and approved at the Meeting.

Family transitions

Dr Tom O’Connor (Institute of Psychiatry, London) had attended the 1998 meeting to describe the project that he would like to undertake with the ELSPAC data. This would comprise the effects of changes of family type on emotional problems in childhood and adult life. There is a lot of research in the United States regarding features of family break-up and change but very little internationally. He would like to carry out such research using our data and would be setting out in more detail the project envisaged and the data that would be required. He proposed asking the Wellcome Trust for funding for this project, which would involve data from pregnancy through to 18 months. The countries that would be included, provided they agreed, would be the Czech Republic, the Isle of Man, Slovakia and the United Kingdom (Avon). Ukraine would not be able to participate since the 18-month questionnaires had not been administered, although the 3-year data might be appropriate.

When more details were available Professor Golding would write to each study centre to ask them for a costing towards the amount of extra work that providing this information to the Bristol study centre might involve.

Accidents and injuries

Dr Koupilova presented the plans for a study of injuries in children up to 3 years of age using the ELSPAC data. The importance of this topic had been emphasized recently by a project in which she was involved highlighting the difference in childhood mortality rates from accidents and injuries across Europe. It was suggested that data from the Czech Republic, the Isle of Man, the Russian Federation, Slovakia, Ukraine and the United Kingdom (Avon) would be ideal for this, with data collected at 6 months, 18 months and 3 years being the bases of the analyses.

Funding would be requested from the British Department for International Development. A draft application was discussed and agreed. If successfully shortlisted, the final decision would be made by January 2000.

Markers of coronary heart disease

This project would look at the blood pressure levels and lipid levels of 10–11-year-olds in the Czech Republic, the Isle of Man and the United Kingdom, with the possibility of extending it to Slovakia and Ukraine. The project would be a 5-year programme with funding hopefully from the Wellcome Trust. Only the countries doing the 10–11 year tests could be included in this. Dr Koupilova would prepare the grant proposal.
Report from the previous Coordinating and Executive Committee

As only two members of the Committee were present there was no formal meeting. Points made at previous meetings were, however, reiterated and emphasized. It had previously agreed that the Coordinating Centre should be funded through a fee of £4000 per centre per year. For 1999 only the Isle of Man had paid this fee. Neither the Czech Republic nor Ukraine can provide financial support for work based in other countries. It was suggested that Dr Mangiaterra be asked to write to the Czech and Ukraine funders in this regard.

Lack of funding makes it extremely difficult for the Bristol office to provide an adequate service. It had been suggested and agreed in 1996 that future grants from national and international funders should include a 10% fee to be given directly to Bristol, and all participants were encouraged to remember this. It is also important that requests for comparative analysis include requests for funding of this aspect.

The matter of confidentiality was stressed. The study rules must be such that no one can link the name of a parent or child to the information given in the self-completion questionnaires.

Other matters

There was general agreement that the study should be continued beyond 7 years of age, and indeed to follow the children into adulthood, if possible.

A number of different topics for analysis were suggested. These included:
(a) The relationship (if any) between nausea in the first trimester and maternal weight gain.
(b) Hyperemesis and weight gain.
(c) Gestational age and the date the mother first felt the baby move.
(d) Babies of <10th centile birthweight – where are they on the centile charts at 7?
(e) The long-term outcome of shoulder dystocia.
(f) The long-term outcome of SCBU admission.
(g) Is there any association between bleeding in the 1st and 2nd trimester and asthma in children?
(h) Birthweight and bleeding in pregnancy.

Next meeting

It was agreed to ask WHO to continue to fund meetings of collaborators. It was suggested that the next meeting should be in Bristol from 18–22 September and should discuss the publications in progress or completed, grant applications and plans for 11-year questionnaires and hands-on examinations at 10 years.
Annex 1

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Annex 2

PUBLICATIONS AND PRESENTATIONS USING ELSPAC DATA 1998–1999

Papers in peer-reviewed journals


**Articles in other journals**


Hulchiy, O. Pregnancies in women who lived in different environments. *Social medicine, health care delivery and history of medicine, 1998*.

Hulchiy, O. Risk factors of selected pregnancy outcomes. *Social medicine, health care delivery and history of medicine, 1998*.


**Chapters in books**


**Unpublished reports**


Golding, J. *Smoking in pregnancy and exposure of the child to smoke in early infancy: a report to WHO from the ELSPAC study*. April 1999.

**Conference presentations** (Talks and posters)


Bouchalová, M. & Kukla, L. Body size, maturity and functional characteristics of newborns in relation to the anthropological measures of their mothers. 4th International Anthropological Congress of Aleš Hrdlička, Prague, 31 August – 4 September, 1999.


Chyslovska, N. Family and Children of Ukraine Study. (Preliminary results). Healthy Children in Healthy Families: meeting of the working group of the CINDI program, Kaunas, 1999.
Farrow, A. et al. Factors associated with measured cadmium levels from 2685 umbilical cords. XVth International Scientific Meeting of the International Epidemiological Association, Florence, August, 1999 (Poster).

Farrow, A. et al. Symptoms of mothers and infants, levels of measured volatile organic compounds and use of aerosols and air fresheners. Proceedings of the 8th International Conference on Indoor Air Quality and Climate, Edinburgh, August, 1999, 2: 286–291


Kukla, L. Background of the ELSPAC project: risk factors in the life of children and youth. IDV PZ Brno, invited lecture for the course ‘News on the Subject of Children and Youth Hygiene’, 1 September, 1998.


North, K. et al. Types of diet among 3-year-old children and the associations with social and demographic variables. XVth Scientific Meeting of the International Epidemiological Association, Florence, August, 1999 (Poster).


Válkyová, I. et al. Factors of maternal work influencing birthweight. The Fifth International Congress of Behavioural Medicine, Copenhagen, Denmark, August, 1998.


Winkler, J. The maternal bonding of pregnant women. 3rd Czech Paediatric Congress (with international participation), Brno, 9–12 September 1998.

Winkler, J. & Hrdinová, J. Social network of the child in own and foster family. 6th Conference on Foster Family Care, Olomouc, June 1999.
## Annex 3

### ELSPAC Information Availability from the Coordinating Centre, Bristol

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<th>Czech Republic (Brno)</th>
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*The Czech Republic divided this report into two parts.
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<sup>a</sup>The Czech Republic divided this report into two parts.
<sup>b</sup>Excludes Avon.