



Developing a Child Cohort Research Strategy for Europe

HEALTH-FP7-2009-241604

Annex I

Tables and Figures with

Final Report – Publishable Summary

January 2010 – February 2013



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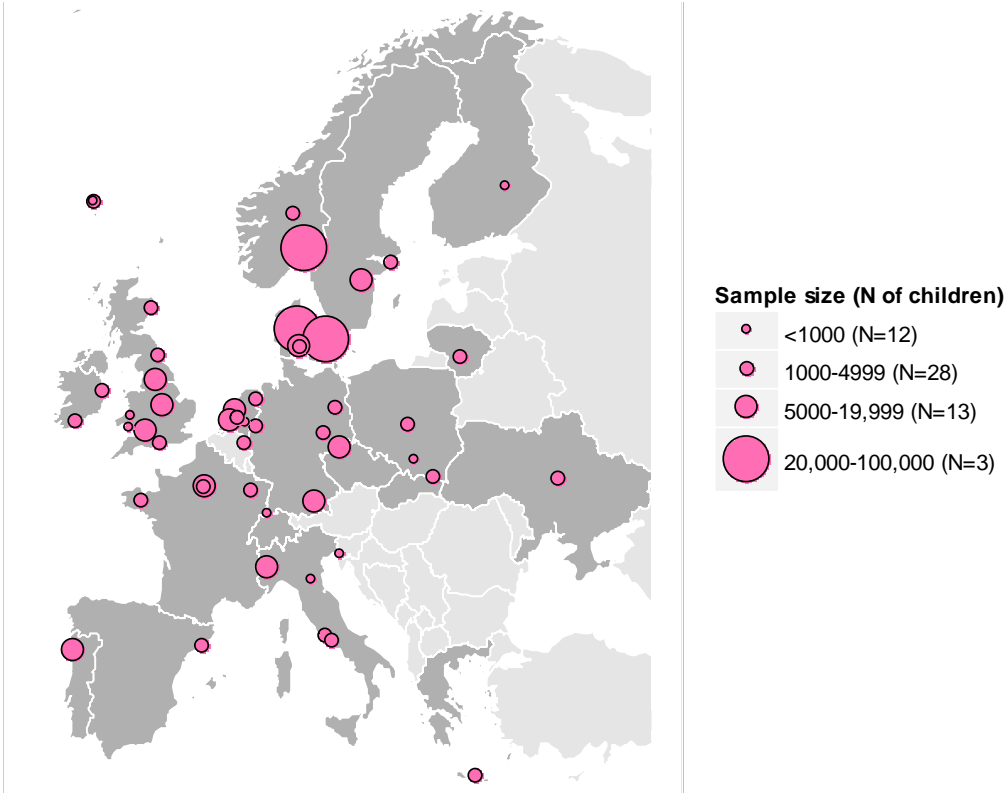


Figure 1 Location and sample size (N of children) of identified birth cohorts in Europe included in the cohort review (WP1).

Table 1 Comparison of different approaches to a European wide Birth Cohort Strategy

Need addressed	Support for continued collaboration between European birth cohorts (Strategy (a))	Support for a <i>new</i> pan-European birth cohort (Strategy (b))	Combination of (a) and (b) – the <i>collaborative</i> European Birth Cohort (Strategy (c))
TIME (especially for providing rapid responses to emerging questions - from the science, politics or the public)	Substantial amounts of policy relevant data already exist and so this could begin now. However, the limitations of the contributing cohorts (eg missing population groups) constrain the results of any such actions	Would take considerable time to plan, obtain relevant funding, pilot data collection and then begin recruitment. Realistically it would be 5-10 years before recruitment began and 10-15 years before data were able to contribute to policy relevant research.	Substantial amounts of policy relevant data already exist in cohorts, but time is needed to build a core database and agree access policies. Strategy (c) would make use of existing data (with all provisions listed under a)), while planning for additional cohorts to complement these (for example by recruiting under-represented groups and regions). Any new data collection will, however, be less extensive than in alternative (b). Alternative (c) would take more time to set up and deliver policy relevant results than (a), but much faster than (b)
FINANCIAL CONSEQUENCES	Least costly, though still requires funding for coordination, maintenance of birth cohorts database, data sharing, harmonisation of data, and completing collaborative research.	Most costly, and would likely require EU level funding and funding from government sources within each country. Some countries may not see this as a spending priority.	A minimum set of information on European child health would require that data collection from groups that are not represented in cohorts today. Existing cohorts and registries will be used as data sources when available. Building of a core database would require funding but less substantial than (b). This approach would require EU level funding. Alternative (c) would be more expensive than (a) but less expensive than (b).
GAPS IN KNOWLEDGE	There are gaps in countries and populations (e.g. minority ethnic groups in Europe) that are currently covered by existing cohorts and this may result in claims that findings are not relevant to these groups.	If it were possible to get agreed funding from all European countries (or a minimum set of countries would provide sufficient coverage of each region) and to develop methods that would ensure adequate numbers of key European minority ethnic groups were recruited and supported to remain participants in the study this would be more representative.	The purpose of the approach is to collect a minimum set of data from existing cohorts and from groups that are not represented in existing cohorts: e.g. minority groups and Eastern European populations. This would minimize the current gaps in knowledge.
STANDARDISATION	Available data have been collected at different ages, using different methods and on different individuals (e.g. mother, father, step- or adoptive- parents, index child, siblings). Resources are necessary to harmonise data for different research questions. However, increasing collaboration (e.g. in genetic analyses) show how this can be done in most cases.	There would be the potential to ensure that data were collected at similar time points, in similar ways and on similar individuals, which would ensure valid comparisons.	Harmonisation of data from different sources would be necessary as under (a).

Tabel 1 continued...

Need addressed	Support for continued collaboration between European birth cohorts (Strategy (a))	Support for a <i>new</i> pan-European birth cohort (Strategy (b))	Combination of (a) and (b) – the <i>collaborative</i> European Birth Cohort (Strategy (c))
POLICY NEEDS	The varying data available in existing cohorts may be an advantage for emerging policy / scientific questions. For example, a well maintained and updated database of existing cohorts and the data contained within them could be searched to identify any with relevant data. Having had different investigators involved in each study is likely to have increased the potential for some 'unusual at the time' measurements to have been undertaken.	Potential to ensure that collected data are relevant to identified key areas of scientific and policy need. However, the gap between agreeing this is the way forward and beginning recruitment may mean some of this potential is lost. Also if all data collection are standardized this cohort may be less able to respond to newly emerging areas.	The minimum set of data from a European cohort would provide basic and representative health information for monitoring child health in Europe, whereas more detailed information on specific topics/scientific questions can be collected from smaller cohorts.
COLLABORATION	Persuading scientists from different countries to effectively collaborate with each other and share data can be difficult, because of time-constraints, lack of resources for such work, a sense of data-ownership, and real ethical/governance issues that restrict this type of work. Approaches to overcome these barriers are increasingly available, but if this strategy is adopted there would need to be investment in methods to overcome them.	Having a Pan-European cohort would engage relevant researchers in a collaborative way from the start. Though efforts would still be necessary to ensure that all relevant researchers did have a sense of ownership and were keen to input and that data were made widely available within an appropriate governance framework.	Efforts to support collaboration would be necessary. See (a) and (b)

Table 2 CHICOS case studies, pooling data from European birth cohorts (number of cohorts; estimated number of participating mother-child pairs):

1. Alcohol consumption during pregnancy and birth weight (9 cohorts; >100,000 participants)
2. Socioeconomic inequalities in preterm delivery (12 cohorts; >100,000 participants)
3. Maternal occupation during pregnancy and adverse birth outcomes (12 cohorts; >200,000 participants)
4. Persistent organic pollutants (measured in blood during pregnancy) and birth outcomes (12 cohorts; 8,000 participants)
5. Fish consumption during pregnancy and fetal growth (20 cohorts; 152,000 participants)
6. Adiposity and vascular and metabolic health in children (17 cohorts; 47,000 participants)
7. Early infant growth and childhood asthma (31 cohorts; 147,000 participants)
8. Maternal complications during pregnancy and childhood wheezing (14 cohorts; 114,000 participants)
9. Persistent organic pollutants (measured in blood during pregnancy) and respiratory infections and wheezing at early ages (0-2 years) (12 cohorts; 8,000 participants)



Figure 2 CHICOS Logo



Figure 3 CHICOS website: www.chicosproject.eu



Figure 4 Publicly available brochure detailing the CHICOS recommendations



Developing a Child Cohort Research Strategy for Europe

www.chicosproject.eu

Coordination and Support Action: HEALTH-FP7-2009-241604



CHICOS set out to **develop an integrated strategy for birth cohort research in Europe for the next 15 years through coordination of the most important European birth cohorts**. It was launched in January 2010 and reached its official conclusion on February 2013

CONCLUSIONS

- More than 70 birth cohorts across Europe are prospectively studying more than 500,000 mothers, fathers and children
- Considering existing European birth cohorts, CHICOS found a lack of data from minority groups, Southern and Eastern European countries, and older children and adolescents
- CHICOS proved that pooling cohort data across countries is possible and valuable, but has also highlighted substantial practical obstacles in international collaborative initiatives
- Harmonizing existing data collections, improving the use of existing resources, filling data gaps, and increasing availability of registry data that can be combined with cohort data have also proved extremely beneficial



Cohorts included in CHICOS overview

Sample size (N of children)

- <1000 (N=12)
- 1000-4999 (N=26)
- 5000-19,999 (N=13)
- 20,000-100,000 (N=3)

Partners

Centre for Research in Environmental Epidemiology (CREAL), Spain
 University of Copenhagen, Denmark
 University of Crete, Greece
 University of Turin, Italy
 Erasmus University Medical Center Rotterdam, The Netherlands
 The Norwegian Institute of Public Health, Norway
 University of Bristol, United Kingdom
 National School of Public Health, Greece

RECOMMENDATIONS

CHICOS recommends establishing a collaborative European Birth Cohort, using data from existing and new cohorts. It should include support for:

- Establishing the infrastructure for a European-wide database – this should include a core database platform, data sharing and data harmonisation rules, biobank access guidelines, exchange of methodology and expertise
- Including groups of the population that are underrepresented in birth cohort research today
- Continuing follow-up of existing European cohorts to obtain information on health and disease in older children, adolescents, and adulthood
- Combining data from birth cohorts, routine registries, and other data sources.
- Integrating knowledge translation and public and policy engagement

Project coordinator

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For further information and documents
www.chicosproject.eu, www.birthcohorts.net

Figure 5 Draft project summary poster

Table 3 CHICOS Beneficiaries and PIs

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