



science and policy
for a healthy future

First report on targeted new fieldwork study results

Deliverable Report

D8.3

WP8 Targeted field work surveys and alignment at EU level

Deadline: August 2018

Upload by Coordinator: 29 August 2018

Entity	Name of person responsible	Short name institution	Date [Received]
Coordinator	Marika KOLOSSA-GEHRING	UBA	29/08/2018
Grant Signatory	Ovnair SEPai	DH-PHE	14/08/2018

Entity	Name of person responsible	Short name institution	Date [Approved]
Pillar Leader	Argelia Castaño	ISCIII	28/08/2018
Work Package Leader	Ovnair Sepai	DH-PHE	14/08/2018
Task leader	Ovnair Sepai	DH-PHE	14/08/2018

Responsible author	Ovnair Sepai	E-mail	Ovnair.sepai@phe.gov.uk
Short name of institution	DH-PHE	Phone	+44 1235 825163(Office) +44 7919090066(Mobile)
Co-authors	Lorraine Stewart, Chloe Legg		

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 2

Table of contents

1	Authors and acknowledgements	3
2	Glossary	4
3	Abstract/Summary	5
4	Introduction	6
5	Task Reports	7
5.1	Task 8.1: Alignment of national studies.....	7
5.2	Task 8.2: Use of existing samples from biobanks	7
5.3	Task 8.3: Targeted field work for mixtures	8
5.4	Task 8.4: Targeted field work in combining HES and HBM	8
5.5	Task 8.5: Targeted occupational studies with EU added value	8

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 3

1 Authors and acknowledgements

Lead authors

Ovnair Sepai (DH-PHE)

Lorraine Stewart (DH-PHE)

Chloe Legg (DH-PHE)

Contributors

All task Leaders in WP8:

Task 8.1: Greet Schoeters (VITO), Liese Gilles (VITO)

Task 8.2: Marika Berglund (KI)

Task 8.3: Roel Vermeulen (IRAS), Erik Lebret (RIVM)

Task 8.4: Lorraine Stewart (DH-PHE) plus WP11 Leader Hanna Tolonen (THL)

Task 8.5: Tiina Santonen (FIOH)

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 4

2 Glossary

EEA – European Environment Agency

EFSA – European Food Standards Agency

EU – European Union

HES – Health Examination Survey

HBM – Human Biomonitoring

IC – Internal Call

NHCP – National Hub Contact Points

PAH – Poly aromatic hydrocarbons

WP – Work Package

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 5

3 Abstract/Summary

Work Package 8 aim is to collect new samples and data in order to determine exposure to the priority list of chemicals either in the general population or via an occupational setting. Three strategies are proposed. Firstly, to align current studies in partner countries and collect new samples (both for population and occupational exposures), secondly, access biobanked samples and lastly to collate data which has already been collected.

The aim is to collect human biomonitoring data from across Europe focusing on one time frame and to determine time trends. Partner countries were asked to complete a very detailed questionnaire in year 1 (Task 7.1), in the first half of year 2 the resulting data base was used as a starting point to develop the strategy in Task 8.1 and Task 8.2, alignment of national studies and biobanked samples, respectively. Task 8.1 developed a strategy which would enable geographical coverage as well as population coverage across Europe. Task 8.2 built on this strategy to determine which biobanked samples could be accessed to fill some of the gaps and assess time trends. Task 8.3 aim was to develop a targeted study addressing exposure to mixtures, this has been delayed till 2019 (Year 3). Task 8.4 aim is to combine Health Examination Surveys and Human Biomonitoring Surveys, this was the topic of an Internal Call which will be awarded in the latter half of 2018. Task 8.5 targeted occupational studies addressing exposure to chromium IV via chromium plating and welding this study has started and partners have applied for ethical approval.

In conclusion, there has been a lot of progress overall, it has taken time to develop sampling frames and address some of the issues with regard to identifying national programmes, the age groups, and geographical coverage for the population studies. During the last half of 2018 and into 2019 the studies will be implemented and samples will be collected.

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 6

4 Introduction

The purpose of this report is to summarise progress within Work Package 8 in year 1 and 2 (2017 and 2018). The report describes the progress within each task and briefly states the forward plan.

Where appropriate other deliverables are referenced in order to avoid repetition. Progress with most tasks in year one was minimal as the initial inventory of studies was collected through Task 7.1. The first half of 2018 (year 2) has seen significant progress.

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 7

5 Task Reports

5.1 Task 8.1: Alignment of national studies

The aim of task 8.1 is to align ongoing/planned studies to collect HBM data of the prioritised chemicals with EU wide coverage. To realise this task a European sampling frame was developed. We started from a theoretical concept describing criteria related to recruitment and sampling to obtain current exposure data across Europe.

Task 8.1 completed Deliverable D8.1 which described the national programmes which could be included in the alignment across the partner countries. Task 8.1 aim is to measure current exposure defined as samples taken between 2014 and 2019 i.e. over the last 5 years. Due to the restraints encountered when evaluating national population representative studies, it was necessary to include regional studies with a large catchment area and to focus on 3 age groups instead of 5. The 3 age groups that were selected are: children (6-11 yrs), teenagers (12-19 yrs) and adults (20-39 yrs). Within each age group the focus was placed on specific chemicals. For children the focus is on the analysis of phthalates/DINCH and flame retardants, for teenagers on phthalates/DINCH and per-poly- fluorinated compounds and for adults on cadmium, bisphenols and Polycyclic aromatic hydrocarbons (PAH's). The drafted proposal of eligible candidate studies was accepted by the Management board and implementation will start from June 2018.

Currently, 21 different countries, representing north, east, south and west Europe will participate in the sampling frame. This will result in chemical exposure data of 2950 children, 2900 teenagers and 3165 adults distributed across Europe. This will be an exciting first step towards a first EU wide HBM survey.

Deliverables

D8.1: Description of National Programs – APPROVED

D8.4: Initial report on strategies adopted to align studies across Europe and preliminary results. Details of the progress made are reported in D8.4, due in August 2018.

5.2 Task 8.2: Use of existing samples from biobanks

In collaboration with Task 8.1, Task 8.2 will evaluate time trends in chemical exposure. Three time-points will be assessed: 2006-2010, 2011-2013 and 2014-2018. The aim is to include one or two age-groups and 4 European geographical areas, depending on availability of data. Time-trends will initially be assessed for DINCH, (and flame retardants if available from the same data sets/studies), followed by phthalates, bisphenols and perfluorinated compounds. For the first time point we will use published exposure data (M20), for the second time point we will use DEMOCOPHES samples (new analyses; M25-27), and for the third time point we will use data from task 8.1 (alignment of studies). A progress report will be written in September 2018 D8.2.

Deliverables

Further details will be published in D8.2 "First report on biobank activities", which will be submitted to the coordinator by the 15th of September 2018

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 8

5.3 Task 8.3: Targeted field work for mixtures

Task 8.3 is to conduct “Targeted new field work with EU added value”. Within AWP2017 Task 8.3A was further refined as “Targeted field work for mixtures”. This activity, which involves “addressing the needs identified in task 15.2 for the assessment of relevant chemical mixtures”, is a shared task with WP15. Preliminary plans for a targeted fieldwork campaign were discussed at a WP15 workshop in Bilthoven (November 2017). In preparation of the plan for the fieldwork for mixtures. WP15 has explored the availability of information from EFSA which maps pesticide usage with active ingredient specific data. The outcome from this investigation is that this data does not exist. RIVM explored access to equivalent data via the NHCP – this too proved to be a challenge as much of this level of information is not readily available. Some knowledge of overall usage, combined with the earlier defined more technical criteria (e.g. vapour pressure) were used to define a top-5 list of candidate pesticides, in addition to the 2nd Round Priority pesticides.

The collected information has resulted in a proposal for the design of a fieldwork campaign which combines a hotspot strategy in alignment with the general survey. The exact design will be decided on by the coordinators during the management board meeting of 3 September 2018 on the basis of a decision memo. In case of a favourable decision the design of the fieldwork campaign will be further developed in close collaboration between WP8 (Task 8.3), WP15 (Task 15.2) and WP16 and will be described in Deliverable 15.2.

Because of above complexities the design and implementation of the targeted fieldwork study for mixtures was delayed and no task 8.3A was included in AWP2018. The current proposal aims at implementing the survey in 2019, as such task 8.3A is included in AWP2019. The results will be incorporated into a deliverable in 2019 (M32).

Deliverables

AD15.1 Development of case studies on mixture effects

D15.2 Protocol joint survey sampling campaign, which will be submitted to the coordinator by November 2018 and will contain further details.

5.4 Task 8.4: Targeted field work in combining HES and HBM

Task 8.4 aim is to combine Health Examination Surveys and Human Biomonitoring Surveys, this was the topic of an Internal Call (IC) which will be awarded in the latter half of 2018.

5.5 Task 8.5: Targeted occupational studies with EU added value

The study on occupational chromate exposure was planned in 2017 and the research plan was published as a deliverable in December 2017. The aim is to collect EU-wide data on chromium (VI) exposure in chromium (VI) surface treatment (plating in baths, surface treatment by spraying, painting etc) and stainless steel welding. New methods, namely analysis of chromium in exhaled breath condensate and red blood cells, for the biomonitoring of chromium will be tested.

During the first quarter of 2018, SOPs for the collection of chromate samples have been drafted. These have been organised into a fieldwork manual. In collaboration with WP2, a training course on occupational studies was organised in Slovenia, 22nd of June 2018. The course concentrated on the chromate study and the procedures developed to ensure the harmonised conduct of the study in participating countries. Eight countries have confirmed their participation in the occupational chromate study (Table 8.5). The information materials, informed consent forms and

D8.3 - First report on targeted new fieldwork study results	Security: Public
WP8 - Targeted field work, surveys and alignment at EU level	Version: 1.1
Authors: Ovnair Sepai, Lorraine Stewart, Chloe Legg	Page: 9

questionnaire to the workers have been translated by EEA to the relevant languages and responsible partners in each country have already applied or are currently in the process of applying for ethical permission and recruiting companies for the study. Some countries have already received positive response from their local ethics committees (Table 8.5).

Table 1: List of participating countries, Summary of Progress

Country	Partner	Ethical permission	Recruitment of companies
France	INRS SP-France	Applied, waiting for a response	Recruitment on-going
Finland	FIOH	Yes	Required number of companies recruited
UK	HSL IOM	Applied, waiting for the response	Recruitment on-going
Germany	IPASUM	<i>Delayed: may not get approval in time may have to delete Germany from this study</i>	<i>Recruitment on-going but delayed</i>
Portugal	ESTeSL INSA	Yes	Two companies already accepted to participate in the study.
Italy	DPH ISS	Yes	Required number of companies already recruited
Poland	NIOM	Yes	Recruitment on-going
Belgium	KU Leuven	applied, waiting for the response	Recruitment on-going –first preliminary confirmations obtained
Netherlands	RUMC	not yet available	Recruitment on-going

Progress has been made also on the development of the collection and analysis of EBC samples which are a novel HBM matrix. A SOP has been written for sample collection and analyses in collaboration with WP9 (Task 9.3). Laboratories are being identified which are capable of the chemical analysis of hexavalent chromium and development of method for its analysis from EBC samples in collaboration with WP9.

More detailed reports will be written in February 2019 when the samples will have been collected and in December 2019 where the preliminary results will be described.

Deliverables

AD8.1 Report on access to occupational data - APPROVED

AD8.2 Detailed research plan for chromates – APPROVED

D8.5 Initial report on occupational studies - originally due in August 2018, postponed to February 2019.

D8.9 Report on progress targeted occupational studies, due in December 2019.