

# The importance of communication in the success of a large biomonitoring study: example of the French dioxin and incinerators study

M. Schmitt<sup>1</sup>, Y. Guillois-Bécel<sup>1</sup>, C. Heyman<sup>1</sup>, N. Lucas<sup>1</sup>, A. Mathieu<sup>1</sup>, U. Noury<sup>1</sup>, J. Pouey<sup>1</sup>,

M. Pascal<sup>2</sup>, J-L. Volatier<sup>3</sup>, N Fréry<sup>2</sup>

<sup>1</sup>Regional Unit of the National Institute for Health Surveillance - 107, rue Servient, 69003 Lyon, France  
<sup>2</sup>French Institute for Public Health Surveillance - 12, rue du Val d'Osne, 94415 Saint-Maurice, France  
<sup>3</sup>French Food Safety Agency - 27-31, avenue du Général Leclerc, 94701 Maisons-Alfort, France

## Introduction

The French dioxin and incinerators study was designed to estimate whether serum dioxin levels were higher in people living exposed or non-exposed to waste incinerators emissions. The study involved 1030 adults (30-65 years) selected through a stratified two stage random sampling, from 8 locations in France. Serum analysis of PCDDs, PCDFs and PCBs were performed, and questionnaire data was collected.

In such a study, the communication between the population and the investigators is a crucial point. Three steps are particularly sensitive:

- the recruitment of the participants
- the blood collection and the interviews
- the communication of the results

This poster analyses the main efforts of communication done at each of these steps.

## Recruitment of participants

Prior to the recruitment, to optimise the participation to the study, several actions of communication were carried out:

- information of the local authorities,
- organisation of public meetings,
- information of the local media,
- edition of brochures, fact sheets and FAQ to answer the main questions on dioxins, available on the website.

Then, the voter's lists of the cities were used to contact people by phone in order to establish a sampling base of eligible households. This phone call consisted in:

- a brief presentation of the study,
- identifying people belonging to the same household,
- identifying people in the household respecting the criteria for inclusion (age between 30 and 65, time of residence in the area above 10 years, no occupational exposure, no significant weight loss in the past 6 months, no breastfeeding in the past 15 years, substantial consumption or no consumption of locally produced food).

Due to the large number of phone calls required (more than 11000 phone calls), the work was performed by a telephonic platform: a good training of the employees is very important because phone calls are not always positively perceived and the first phone contact is the key step to obtain a good sampling base and a good participation rate.

A poorly handled phone contact cannot be counterbalanced by the other communication means subsequently available:

- letters to the people sampled, including a presentation of the study,
- other phone calls for appointments and advice on the blood collection.



FAQ to answer the main questions on dioxins

## Blood collection and interviews

Participants were asked to follow these steps:

- welcoming, ID verification, questions to check the criteria of inclusion,
- presentation of an information note (aim of the study, quantity of blood collected, risks associated, communication of the results, rights of the participants, confidentiality),
- medical examination, informed consent interview and signature (by the participant and the physician),
- blood collection,
- snacks,
- interviews (several questionnaires).

The minimal time required was 2 hours.

Participants often had to take a day or half a day off, and were invited to come under fasting conditions, sometimes until late in the morning (between 7 a.m. and 10.30 a.m.).

To avoid a long waiting time, six investigators, a physician and several nurses were needed.



Interviews: a good opportunity to question and to discuss the topic of the incinerators

The organisation allowed a contact with the people, who sometimes took the opportunity to question and to discuss the topic of the incinerators.

## Communication of results

Communication of the serum levels of PCDD/Fs and PCBs was difficult because:

- no reference value is available,
- it is not possible to provide an interpretation of the health consequences of the individual results.

But:

- the availability of serum levels for population non-exposed to the emissions of waste incinerators provided comparison levels,
- lead in blood and cadmium in urine were also measured during the study: this allowed giving results with a sanitary interpretation when it was possible.

## INDIVIDUAL COMMUNICATION

- Participants were asked whether they wanted to receive or not their serum levels: the majority wanted.
- Participants received their own results with a brochure presenting synthetic results of the study: this allowed the participants to compare their serum levels to the median level of the whole population and of the local population (exposed or non-exposed, from a specific geographical area).
- No recommendation was given to the participants with the highest serum levels, none called the French Institute for Public Health Surveillance to obtain additional advice: it seems that all participants understood that their serum levels did not indicate any health risk.



Summary of the findings of the study

## GENERAL COMMUNICATION

For seven locations among the eight included in the study, the communication was done through oral presentations during public meetings:

- The frequentation rate depended on the location (50 to 350 people),
- The media and several stakeholders (elected representative, NGOs, state services, industrials), usually came.
- One inconvenient is that some people dare not ask questions to "experts" in front of a large assembly, but the whole assembly benefits from the answers to questions asked by a few persons.

For one of the location where other studies had been conducted around the waste incinerator (studies on cancer incidence, cancer mortality and a risk assessment), the communication was organised on a whole day: posters presenting the findings of the different studies were exposed and the people in charge of each study were there to answer questions:

- The objective was to encourage people to ask questions and to obtain answers adapted to their personal concerns and to their understanding capacities.
- Discussions were long, often more than 30mn. Some people came with their individual results to discuss them.
- Some refused to trust the findings of the studies (members of NGOs and complainants) but the majority of the visitors understood the key message: studies were done by independent scientists to answer their questions, and resources were invested.

Whatever the type of communication, the participants appreciated receiving in-depth information on dioxin and on incineration. They also identified some individual behaviours likely to increase their contamination.



Posters presenting the findings in order to encourage people to ask questions

## Conclusion

Communication with the population is a key point during biomonitoring studies. During the recruitment, it allows to sample a population representative of the targeted population. During the blood and data collection, it enables to gather reliable informations. During the communication of the results, people will not question the results if the communication is well processed.

## Acknowledgments

This study was supported by the French Ministry of Health within the framework of the Cancer Plan. The authors would like to acknowledge the scientific committee for its advice, the population for its participation and all the staff from the regional units of InVS and the French National Blood Agency.