Appendix 3

Health Impact Assessment of Outdoor Air Pollution

RESULTS OF THE STUDY TO EVALUATE DATA AVAILABILITY FOR HEALTH IMPACT ASSESSMENT RELATED TO OUTDOOR AIR POLLUTION

Questionnaire on data availability

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1. Introduction

As a previous task to the definition of data to be taken into account to do a HIA in the cities participating in ENHIS-1 Project, WP5 prepared a questionnaire to be sent to all centres, on the basis of APHEIS network experience.

For ENHIS-1 purposes, we prepared the questionnaire paying special attention to HIA for children, according with the directions established by the Conference of Health Ministers held in Budapest on June 2004.

We introduced too new information about ozone exposure data and new health outcomes as proposed by experts collaborating with WP5.

2. The questionnaire

2.1. Exposure indicators

PM10, 24 hours average
PM10, yearly average
Ozone, 8 hours maximum of daily moving average in summer
Ozone, 8 hours maximum of daily moving average
Ozone, 1 hour maximum daily value
PM2.5, 24 hours average [1]
Black smoke, 24 hours average [1]

For each one of this data, was asked for the monitoring station number by types: background, traffic and industrial

Also were asked about data source, if there were a routine source, and about the most recent year for available data.

2.2. Health outcomes

Two sets were differentiated: those related to children and those related to general population. In each set were recorded mortality data and morbidity data.

In all that cases was asked for the routine nature of the source, the delay and the most recent year for available data. Also about the existing information on data validity an about the existence of quality control procedures

Children:

- Mortality data [2]
  - Total number of post neonatal deaths (ICD9<800; ICD10<S00)
  - Total number of post neonatal deaths [Including external causes] (ICD9 0-999; ICD10 A00-T98)
  - Number of respiratory post neonatal deaths (ICD9 460-519; ICD10 J00-J99)
  - Number of post neonatal Sudden Infant Death Syndrome (SIDS) deaths (ICD9 798.0; R95)
- Morbidity data
  - Hospital respiratory admissions <15 years (ICD9 460-519; ICD10 J00-J99)
  - Number of emergency room visits for asthma < 18 Years
  - Cough < 18 Years
  - Lower respiratory symptoms < 18 Years (including wheezing, chest tightness and shortness of breath)

[1] Optional indicator, if available
[2] In all cases, among residents dead on location

General Population:

- Mortality Data [3]
  - Total number of deaths (ICD9<800; ICD10 A00-R99)
  - Number of respiratory deaths (ICD9 460-519; ICD10 J00-J99)
  - Number of cardiovascular deaths (ICD9 390-459; ICD10 I00-I99)
- Morbidity Data
  - Hospital respiratory admissions 15-64 years (ICD9 460-519; ICD10 J00-J99)
  - Hospital respiratory admissions >64 years (ICD9 460-519; ICD10 J00-J99)
  - Hospital cardiovascular admissions 15-64 years (ICD9 390-459; ICD10 I00-I99)
  - Hospital cardiovascular admissions >64 years (ICD9 390-459; ICD10 I00-I99)

3. Results

3.1. Cities and institutions participating in the study

Initially, the questionnaire was sent to 33 cities. At the end of the period of time for receiving the answers, three cities does not sent the information: Celje, Strasbourg and Bucharest

Table 1. Cities and Institutions participating

City	Country	Type of institution
1. Athens	Greece	University of Athens
2. Barcelona	Spain	Public Health Agency of Barcelona
3. Bilbao	Spain	Public Health Direction
4. Bordeaux	France	Public Health Institute
5. Brussels	Belgium	Institut Bruxellois pour la Gestion de l'Environnement
6. Budapest	Hungary	Public Health Centre/Environmental Health
7. Copenhagen	Denmark	University of Copenhagen
8. Crakow	Poland	Regional Sanitary Inspection
9. Dublin	Ireland	Dublin University
10. Gothenburg	Sweden	Umeå University
11. Innsbruck	Austria	University of Vienna
12. Le Havre	France	Public Health Institute
13. Hamburg	Deutschland	University of Hamburg
14. Lille	France	Public Health Institute
15. Lisbon	Portugal	Health Ministry
16. Ljubljana	Slovenia	Institute of Public Health of the Republic of Slovenia
17. London	United Kingdom	Medical School
18. Lyon	France	Public Health Institute
19. Madrid	Spain	Consejeria de Sanidad
20. Marseille	France	Public Health Institute
21. Paris	France	Public Health Institute
22. Prague	Czech Republic	National Institute of Public Health
23. Rome	Italy	Agency for Public Health
24. Rotterdam	Netherlands	Municipal Health Service
25. Rouen	France	Public Health Institute
26. Seville	Spain	School of Public Health
27. Stockholm	Sweden	Umeå University
28. Toulouse	France	Public Health Institute
29. Valencia	Spain	School of Public Health
30. Vienna	Austria	University of Vienna

[3] In all cases, among residents dead on location

3.2. Characteristics of exposure data by cities

Exposure indicators

PM10 measurements are available in all the cities except in Valencia.

PM2.5 measurements are available in 19 cities: Bordeaux, Brussels, Crakow, Hamburg, Innsbruck, Le Havre, Lille, Lisbon, London, Lyon, Marseille, Paris, Prague, Rome, Rotterdam, Rouen, Stockholm, Toulouse and Vienna. Only 6 cities have more than one background station.

Black Smoke measurements are available in 15 cities: Athens, Barcelona, Bordeaux, Brussels, Crakow, Dublin, Le Havre, Lille, London, Lyon, Marseille, Paris, Rotterdam, Rouen and Valencia,.

Ozone measurements are available in all the cities.

Number of stations

All the figures are referred to 29 cities, because the information from Prague about exposure data are not clear enough at today's date

In some city, as Rotterdam, it's difficult to classify some monitoring station, because of the winds direction. Their characteristics vary in relation to the main source of pollutants (traffic or industry)

PM10: 20 cities have more than one background station,
16 cities have more than one traffic stations, and 5 have 1 station
1 city have 2 industrial stations and 4 have only 1 station

PM2.5: 6 cities have more than one background stations, and 9 have just 1
1 city have more than one traffic stations, and 6 have 1 station
1 city have 1 industrial station and the other ones have no station

Ozone: 18 cities have more than one background stations, and 9 have 1 station
7 cities have more than one traffic stations, and 2 have 1 station
1 city have more than 1 industrial stations, and 2 have 1 station

Exposure data: Summary

		Last year available	Routine Source						
			PM10 (24h average)	PM10 (yearly average)	PM2.5 (24h average) optional	Black smoke (24h average) optional	O3 (8h max daily moving average-summer)	Ozone (8h max daily moving average)	Ozone (1h max daily value)
		Last year available							
Athens	Greece	2004	Yes	Yes	No	Yes	Yes	Yes	Yes
Barcelona	Spain	2004	Yes	Yes	No	Yes	Yes	Yes	Yes
Bilbao	Spain	2004	Yes	Yes	No	No	Yes	Yes	Yes
Bordeaux	France	2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brussels	Belgium	2002/(2004?)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Budapest	Hungary	2004	Yes	Yes	No	No	Yes	Yes	Yes
Copenhagen	Denmark	2003/2004	Yes	Yes	No	No	No	Yes	No
Crakow	Poland	2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dublin	Ireland	2003	Yes	Yes	No	Yes	Yes	Yes	Yes
Gothenburg	Sweden	2004	Yes	Yes	No	No	Yes	Yes	Yes
Hamburg	Germany	2004	Yes	Yes	Yes	No	Yes	Yes	Yes
Innsbruck	Austria	2004	Yes	Yes	Yes	No	Yes	Yes	Yes
Le Havre	France	2002/2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lille	France	2003/2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lisbon	Portugal	2004	Yes	Yes	Yes	No	Yes	Yes	Yes
Ljubljana	Slovenia	2003	Yes	Yes	No	No	Yes	Yes	Yes
London	UK	2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lyon	France	2003	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Madrid	Spain	2004	Yes	Yes	No	No	Yes	Yes	Yes
Marseille	France	2003/2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Paris	France	2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prague	Czech Republic	2004	Yes	Yes	Yes	No	Yes	Yes	Yes
Rome	Italy	2004	Yes	Yes	Yes	No	Yes	Yes	Yes
Rotterdam	Netherlands	2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rouen	France	2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Seville	Spain	2002	Yes	Yes	No	No	Yes	Yes	Yes
Stockholm	Sweden	2004	Yes	Yes	Yes	No	Yes	Yes	Yes

Toulouse	France	2002/2004	Yes	Yes	Yes	No	Yes	Yes	Yes
Valencia	Spain	2002	No	No	No	Yes	Yes	Yes	Yes
Vienna	Austria	2004	Yes	Yes	Yes	No	Yes	Yes	Yes

Exposure data: PM10

ANC = Answer Not Clear

City	Country	Sources								
		PM10 (24h average)				PM10 (yearly average)				Last available Year fo PM10
		Routine	Number			Routine	Number			
			Background	Traffic	industrial		Background	Traffic	industrial	
Athens	Greece	Yes	4	4	0	Yes	4	4	0	2004
Barcelona	Spain	Yes	0	5	0	Yes	0	5	0	2004
Bilbao	Spain	Yes	12	0	0	Yes	12	0	0	2004
Bordeaux	France	Yes	4	3	0	Yes	4	3	0	2004
Brussels	Belgium	Yes	6	0	0	Yes	6	0	0	2002
Budapest	Hungary	Yes	6	4	1	Yes	6	4	1	2004
Copenhagen	Denmark	Yes	2	5	0	Yes	5	5	0	2004
Crakow	Poland	Yes	2	1	1	Yes	2	1	1	2004
Dublin	Ireland	Yes	3	3	0	Yes	3	3	0	2003
Gothenburg	Sweden	Yes	1	1	0	Yes	1	1	0	2004
Hamburg	Germany	Yes	9	3	1	Yes	9	3	1	2004
Innsbruck	Austria	Yes	2/1	1/2	0	Yes	2/1	1/2	0	2004
Le Havre	France	Yes	2	0	1	Yes	2	0	1	2004
Lille	France	Yes	4	0	0	Yes	4	0	0	2004
Lisbon	Portugal	Yes	6	2	0	Yes	6	2	0	2004
Ljubljana	Slovenia	Yes	1	0	0	Yes	1	0	0	2003
London	UK	Yes	6	5	1	Yes	6	5	1	2004
Lyon	France	Yes	1	4	0	Yes	1	4	0	2003
Madrid	Spain	Yes	1	26	0	Yes	1	26	0	2004
Marseille	France	Yes	3	0	0	Yes	3	0	0	2004
Paris	France	Yes	10	2	0	Yes	10	2	0	2004
Prague	Czech Republic	Yes	ANC	ANC	ANC	Yes	ANC	ANC	ANC	2004
Rome	Italy	Yes	1	3	0	Yes	1	3	0	2004
Rotterdam	Netherlands	Yes	4	1/0	1/0	Yes	4	1/0	1/0	2004
Rouen	France	Yes	2	1	0	Yes	2	1	0	2004
Seville	Spain	Yes	1	5	0	Yes	1	5	0	2002
Stockholm	Sweden	Yes	1	3	0	Yes	1	3	0	2004
Toulouse	France	Yes	3	1	2	Yes	3	1	2	2004
Valencia	Spain	No	0	0	0	No	0	0	0	2002
Vienna	Austria	Yes	9	1	1	Yes	9	1	1	2004

Exposure data: PM2,5 and Black Smoke

ANC = Answer Not Clear

City	Country	Sources									
		PM2.5 (24h average) optional				Last available Year for PM2,5	Black smoke (24h average) optional				Last available Year for BS
		Routine	Number				Routine	Number			
			Background	Traffic	industrial			Background	Traffic	industrial	
Athens	Greece	No	0	0	0	-	Yes	2	3	0	2004
Barcelona	Spain	No	0	0	0	-	Yes	0	5	0	2004
Bilbao	Spain	No	0	0	0	-	No	0	0	0	-
Bordeaux	France	Yes	2	0	0	2004	Yes	1	0	0	2004
Brussels	Belgium	Yes	3	0	0	2002	Yes	3	0	0	2002
Budapest	Hungary	No	0	0	0	-	No	0	0	0	-
Copenhagen	Denmark	No	0	0	0	-	No	0	0	0	-
Crakow	Poland	Yes	1	0	0	2004	Yes	11	0	0	2004
Dublin	Ireland	No	0	0	0	2003	Yes	3	3	0	2003
Gothenburg	Sweden	No	0	0	0	2004	No	0	0	0	-
Hamburg	Germany	Yes	0	0	1	2004	No	0	0	0	-
Innsbruck	Austria	Yes	1	0	0	2004	No	0	0	0	-
Le Havre	France	Yes	2	0	0	2002	Yes	3	0	2	2004
Lille	France	Yes	2	0	0	2004	Yes	2	0	0	2003
Lisbon	Portugal	Yes	0	1	0	2004	No	0	0	0	-
Ljubljana	Slovenia	No	0	0	0	-	No	0	0	0	-
London	United Kingdom	Yes	1	1	0	2004	Yes	3	0	2	2004
Lyon	France	Yes	1	1	0	2003	Yes	0	1	1	2003
Madrid	Spain	No	0	0	0	-	No	0	0	0	-
Marseille	France	Yes	1	0	0	2004	Yes	2	0	0	2003
Paris	France	Yes	4	1	0	2004	Yes	2	0	0	2004
Prague	Czech Republic	Yes	ANC	0	0	2004	No	0	0	0	-
Rome	Italia	Yes	0	1	0	2004	No	0	0	0	-
Rotterdam	Netherlands	Yes	1	0	0	2004	Yes	2	1/0	0	2004
Rouen	France	Yes	2	0	0	2004	Yes	3	0	0	2004
Seville	Spain	No	0	0	0	-	No	0	0	0	-
Stockholm	Sweden	Yes	1	3	0	2004	No	0	0	0	-
Toulouse	France	Yes	1	1	0	2002	No	0	0	0	-
Valencia	Spain	No	0	0	0	-	Yes	4	10	0	2002
Vienna	Austria	Yes	1	0	0	2004	No	0	0	0	-

Exposure data: Ozone

ANC = Answer Not Clear

City	Country	Sources												
		O3 (8h max daily moving average-summer)				Ozone (8h max daily moving average)				Ozone (1h max daily value)				Last year available for O3
		Routine	Number			Routine	Number			Routine	Number			
			Background	Traffic	industrial		Background	Traffic	industrial		Background	Traffic	industrial	
Athens	Greece	Yes	9	4	2	Yes	9	4	2	Yes	9	4	2	2004
Barcelona	Spain	Yes	1	3	0	Yes	1	3	0	Yes	1	3	0	2004
Bilbao	Spain	Yes	10	0	0	Yes	10	0	0	Yes	10	0	0	2004
Bordeaux	France	Yes	7	0	0	Yes	7	0	0	Yes	7	0	0	2004
Brussels	Belgium	Yes	7	0	0	Yes	7	0	0	Yes	7	0	0	2002
Budapest	Hungary	Yes	5	2	1	Yes	5	2	1	Yes	5	2	1	2004
Copenhagen	Denmark	No	0	0	0	Yes	5	2	0	No	0	0	0	2003
Crakow	Poland	Yes	1	0	0	Yes	1	0	0	Yes	1	0	0	2004
Dublin	Ireland	Yes	1	0	0	Yes	1	0	0	Yes	1	0	0	2003
Gothenburg	Sweden	Yes	3	0	0	Yes	3	0	0	Yes	3	0	0	2004
Hamburg	Deutschland	Yes	6	0	0	Yes	6	0	0	Yes	6	0	0	2004
Innsbruck	Austria	Yes	1	0	0	Yes	1	0	0	Yes	1	0	0	2004
Le Havre	France	Yes	3	0	0	Yes	3	0	0	Yes	3	0	0	2004
Lille	France	Yes	6	0	0	Yes	6	0	0	Yes	6	0	0	2004
Lisbon	Portugal	Yes	8	1	0	Yes	8	1	0	Yes	8	1	0	2004
Ljubljana	Slovenia	Yes	1	0	0	Yes	1	0	0	Yes	1	0	0	2003
London	United Kingdom	Yes	11	1	1	Yes	11	1	1	Yes	11	1	1	2004
Lyon	France	Yes	4	0	0	Yes	4	0	0	Yes	4	0	0	2003
Madrid	Spain	Yes	1	25	0	Yes	1	25	0	Yes	1	25	0	2004
Marseille	France	Yes	4	0	0	Yes	4/2	0	0	Yes	4/2	0	0	2003
Paris	France	Yes	11	0	0	Yes	11	0	0	Yes	11	0	0	2004
Prague	Czech Republic	Yes	ANC	ANC	ANC	Yes	ANC	ANC	ANC	Yes	ANC	ANC	ANC	2004
Rome	Italy	Yes	1	3	0	Yes	1	3	0	Yes	1	3	0	2004
Rotterdam	Netherlands	Yes	3	0	1/0	Yes	3	0	1/0	Yes	3	0	1/0	2004
Rouen	France	Yes	6	0	0	Yes	6	0	0	Yes	6	0	0	2004
Seville	Spain	Yes	0	2	0	Yes	0	2	0	Yes	0	2	0	2002
Stockholm	Sweden	Yes	1	0	0	Yes	1	0	0	Yes	1	3	0	2004
Toulouse	France	Yes	7	0	0	Yes	7	0	0	Yes	7	0	0	2004
Valencia	Spain	Yes	1	4	0	Yes	1	4	0	Yes	1	4	0	2002
Vienna	Austria	Yes	5	0	0	Yes	5	0	0	Yes	5	0	0	2004

3.3. Characteristics of health outcomes by cities

The 30 cities included in the feasibility study obtained the mortality data from registries.

Concerning hospital admissions, two cities (Athens and Crakow) didn't answer that question. All the other cities obtained data from registries.

Completeness in mortality registries was 99% or more in the 22 cities including this point in their answers. In 8 cities, the answer was not clear or not available (Athens, Ljubljana, London, Rome, Seville, Copenhagen, Lisbon, and Rotterdam)

Completeness in hospital admissions registries was of 95% or more in 8 cities (Bilbao, Budapest, Dublin, Gothenburg, Stockholm, Innsbruck and Vienna); greater than 90% in 8 cities (Bordeaux, Le Havre, Lille, Lyon, Marseille, Paris, Rouen and Toulouse), 90% in Valencia and greater than 70% in Barcelona. In 12 cities (Athens, Crakow, Ljubljana, London, Rome, Seville, Brussels, Copenhagen, Hamburg, Lisbon, Prague and Rotterdam) this information was not available in the answer to the questionnaire.

28 cities run a Quality Control Programme. In the case of Athens and Crakow, this information is not included in the answers analysed

Only 9 cities differentiated Emergency Hospital Admissions (Barcelona, Bilbao, Dublin, Gothenburg, London, Madrid, Seville, Stockholm and Valencia)

Morbidity in children, assessed as symptoms like cough or Lower Respiratory Symptoms was the outcome being registered the less.

Cough: Only London do it as a routine (but expensive), and Budapest, Crakow, Prague and Rome can obtain the information from other sources. Rome have information about validity of data and runs a Quality Control Procedure. Budapest have information about validity of data.

Lower Respiratory Symptoms: Only London do it as a routine (but expensive), and Budapest, Crakow, Gothenburg, Lisbon, Rome and Stockholm can obtain the information from other sources. Rome and Lisbon have information about validity of data and run a Quality Control Procedure. Budapest have information about validity of data.

Mortality

	Validity	Type of source	Year	Source	Quality Control	% Missing data in basic cause death	ICD	Manual	Automatic
Athens		Register	2003	National statistical Service of Greece	-		9	100%	
Barcelona	Yes	Register	2003	Barcelona city council (local)	Yes	0%	10	100%	
Bilbao	Yes	Register	2003	Mortality Register of the Basque Autonomous Community	Yes	0%	10	100%	
Bordeaux	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Brussels	Yes	Register	2002	Observatory for Health & Social (Regional) + Federal Services for Public Health (Federal)	Yes	0%	10		
Budapest	Yes	Register	2003	Central Statistical Office, Budapest	Yes	0%	10	100%	(>2005, 100%)
Copenhagen	Yes	Register	2001	National Register	Yes		10		
Crakow	Yes	Register	2004	Regional Centre of Public Health, Krakow	Yes	<0.1%	10	100%	0
Dublin	Yes	Register	2002	National Register, Central Statistics Office	Yes	0%	9	100%	
Gothenburg	Yes	Register	2002	National Registry	Yes	<01,%	10		
Innsbruck	Yes	Register	2004	Statistic Austria	Yes	0	10	100%	0%
Le Havre	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Hamburg	No	Register	2003	Statistical authority of Hamburg and Schleswig-Holstein	Yes	0%	10	!00%	
Lille	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Lisbon	Yes	Register	2002	National Statistical Institute	Yes		10		
Ljubljana	Yes	Register	2003	Institute of Public Health of the Republic of Slovenia	Yes		10		
London	Yes	Register	2003	Office for National Statistics	Yes				
Lyon	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Madrid	Yes	Register	2002	Registro de Mortalidad. Instituto de Estadística. Comunidad de Madrid.	Yes	0,18%	10	40%	60%
Marseille	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Paris	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Prague	Yes	Register	2003	Czech Statistical Office	Yes	0%	10	100%	0%
Rome	Yes	Register	2003	Mortality Information System (SIM)	Yes				
Rotterdam	Yes	Register	2003	Central Office of Statistics (CBS: Centraal Bureau voor de Statistiek)	Yes		10		
Rouen	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Seville	Yes	Register	2003	Mortality Register of Andalusia	Yes				
Stockholm	Yes	Register	2002	National Registry	Yes	<01,%	10		
Toulouse	Yes	Register	2001	Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes	0	10	20%	80%
Valencia	Yes	Register	2002	Mortality Register of the Valencian Community	Yes	0	10	60%	40%
Vienna	Yes	Register	2004	Statistic Austria	Yes	0	10	100%	0%

	GENERAL POPULATION					CHILDREN					
	Routine			Delay (months)	Year	Routine				Delay months	Year
	Total	Respiratory	Cardiovascular			Postneonatal total	Postneonatal including external causes	Postneonatal Respiratory	Sudden death syndrome		
Athens	Yes	Yes	Yes		2003	Yes	Yes	Yes	Yes		2003
Barcelona	Yes	Yes	Yes	24	2003	Yes	Yes	Yes	Yes	24	2003
Bilbao	Yes	Yes	Yes		2003	Yes	Yes	Yes	Yes		2003
Bordeaux	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Brussels	Yes	Yes	Yes	36	2002			Yes		18	2002
Budapest	Yes	Yes	Yes	12	2003	Yes	Yes	Yes	Yes	12	2003
Copenhagen	Yes	Yes	Yes		2001	Yes	Yes	Yes	Yes		2001
Crakow	Yes	Yes	Yes	3	2004	Yes	Yes	Yes	Yes		2004
Dublin	Yes	Yes	Yes	24	2002	Yes	No	Yes	Yes	24	2002
Gothenburg	Yes	Yes	Yes	24	2002	Yes	Yes	Yes	Yes	24	2002
Hamburg	Yes	Yes	Yes	12	2003	Yes	Yes	Yes	Yes	12	2003
Innsbruck	Yes	Yes	Yes	12	2004	Yes	Yes	Yes	Yes	12	2004
Le Havre	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Lille	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Lisbon	Yes	Yes	Yes	7 days	2002	Yes	Yes	Yes	Yes	7 days	2002
Ljubljana	Yes	Yes	Yes	12	2003	Yes	Yes	Yes	Yes	12	2003
London	Yes	Yes	Yes	6-12	2003	No	No	No	No	-	-
Lyon	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Madrid	Yes	Yes	Yes	24	2002	Yes	Yes	Yes	Yes	24	2002
Marseille	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Paris	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Prague	Yes	Yes	Yes	6	2003	Yes	Yes	Yes	Yes	6	2003
Rome	Yes	Yes	Yes	12-18	2003	Yes	Yes	Yes	Yes	12-18	2003
Rotterdam	Yes	Yes	Yes	0	2004	No	Yes	No	No	0	2003
Rouen	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Seville	Yes	Yes	Yes	24	2003	Yes	Yes	Yes	Yes	24	2003
Stockholm	Yes	Yes	Yes	24	2002	Yes	Yes	Yes	Yes	24	2002
Toulouse	Yes	Yes	Yes	48	2001	Yes	Yes	Yes	Yes	48	2001
Valencia	Yes	Yes	Yes	18	2002	Yes	Yes	Yes	Yes	18	2002
Vienna	Yes	Yes	Yes	12	2004	Yes	Yes	Yes	Yes	12	2004

Morbidity. Hospital admissions

	Validity	QC	Type of source	Year	Source	ICD	N. of diagnosis codes	QC	Completeness (%)	Coverage (%)	% Missing data cause admission	Total	Emergency
Athens	-	-	-	-	-	-	-	-	-	-	-	-	-
Barcelona	Yes	Yes	Register	2003	Minimum set of Basic Hospital Data (local)	9	10		>70%	100%	0,20%	X	X
Bilbao	Yes	Yes	Register	2002	Hospital Discharge Register. Basque Autonomous Community	9	6	Yes	98%	95%	0,30%		X
Bordeaux	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Brussels	Yes	Yes	Register		Minimum Set of Basic Hospital Data (SPF SP - Federal)	10		Yes				X	
Budapest	Yes	Yes	Register	2002	Centre for Healthcare Information of the Ministry of Health, Social and Family Affairs	10		Yes	100%	100%	0%	X	X
Copenhagen	Yes	Yes	Register	2003	National Patient Register	10		Yes				X	
Crakow	-	-	-	-	-	-	-	-	-	-	-	-	-
Dublin	Yes	Yes	Register	2003	National Hospital Inpatient Enquiry	9		Yes	95%				X
Gothenburg	Yes	Yes	Register	2002	National Hospital Discharge Register	10		Yes	99%	99%	1%	X	X
Hamburg		Yes		2003	Statistical authority of Hamburg and Schleswig-Holstein	10		Yes					
Innsbruck	Yes	Yes	Register (D+A)	2003	Statistic AustriaÖBIG (National)	10	?	Yes	100%	100%	0	X	
Le Havre	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Lille	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Lisbon	Yes	Yes	Register	2002	Ministry of Health (Related Diagnosis Groups Register)	9		Yes				X	
Ljubljana	Yes	Yes	Register	2003	Institute of Public Health of the Republic of Slovenia	10		Yes				X	
London	Yes	Yes	Register	2004	Health Episodes Statistics	10		Yes				X	
Lyon	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%		X	
Madrid	Yes	Yes	Register	2003	Minimum set of Basic Hospital Data (CMBD). Comunidad de Madrid. Regional.	9	13	Yes	95%	100%		X	X
Marseille	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Paris	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Prague	Yes	Yes	Register	2003	Institute of Health Information and Statistics of the Czech Republic	10		Yes				X	
Rome	Yes	Yes	Register	2003	Hospital Information System (SIO)	9		Yes				X	
Rotterdam	Yes	Yes	Register	2003	National Hospital Register (PRISMANT)	9		Yes				X	
Rouen	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Seville	Yes	Yes	Register	2003	Minimum set of Basic Hospital Data. Andalusia Health Service	9		Yes					X
Stockholm	Yes	Yes	Register	2002	National Hospital Discharge Register	10		Yes	99%	99%	1%	X	X
Toulouse	Yes	Yes	Register	2003	National program for medical information system (PMSI)	10	1	Yes	>90%	100%	0%	X	
Valencia	Yes	Yes	Register	2002	Minimum set of Basic Hospital Data	9		Yes	90%	90%	<1%		X
Vienna	Yes	Yes	Register (D+A)	2003	Statistic AustriaÖBIG (National)	10	?	Yes	100%	100%	0	X	

	GENERAL POPULATION Routine				Delay	Year	CHILDREN Routine	Delay	Year
	Respiratory among 15-64 years	Respiratory >64 years	Cardiovascular 15-64 years	Cardiovascular >64			Respiratory		
Athens	No	-	-	-	-	-	-	-	-
Barcelona	Yes	Yes	Yes	Yes	12	2003	Yes	12	2003
Bilbao	Yes	Yes	Yes	Yes		2002	Yes		2002
Bordeaux	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Brussels					-	-	Yes		
Budapest	Yes	Yes	Yes	Yes	12	2002	Yes	12	2002
Copenhagen	Yes	Yes	Yes	Yes		2003	Yes		2003
Crakow	No	No	No	No	-	-	No	-	-
Dublin	Yes	Yes	Yes	Yes	12	2003	Yes	12	2003
Gothenburg	Yes	Yes	Yes	Yes	24	2002	Yes	24	2002
Hamburg	Yes	Yes	Yes	Yes	?	2003	Yes	?	2003
Innsbruck	Yes	Yes	Yes	Yes	18	2003	Yes	18	2003
Le Havre	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Lille	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Lisbon	Yes	Yes	Yes	Yes	7 days	2002	Yes	7 days	2002
Ljubljana	Yes	Yes	Yes	Yes	18	2003	Yes	18	2003
London	Yes	No	No	No	12-18	2004	No	-	-
Lyon	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Madrid	Yes	No	No	No	12	2003	Yes	12	2003
Marseille	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Paris	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Prague	Yes	Yes	Yes	Yes	6	2003	Yes	6	2003
Rome	Yes	Yes	Yes	Yes	12	2003	Yes	12	2003
Rotterdam	Yes	Yes	Yes	Yes	0	2003	Yes	0	2003
Rouen	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Seville	Yes	Yes	Yes	Yes	24	2003	Yes	24	2003
Stockholm	Yes	Yes	Yes	Yes	24	2002	Yes		
Toulouse	Yes	Yes	Yes	Yes	1	2003	Yes	1	2003
Valencia	Yes	Yes	Yes	Yes	24	2002	Yes	24	2002
Vienna	Yes	Yes	Yes	Yes	18	2003	Yes	18	2003

Conclusions

Relevant and very useful information to do HIA for Outdoor Atmospheric Pollution is available in all the cities participating in the study

Common last year available was 2002 for Exposure data and 2001 for Outcomes data.

Last year available for Exposure data was 2004 for 19 cities, 2003 for 6 cities and 2002 for 5 cities

Last year available for Outcomes data was 2003 for 11 cities, 2001 for 9 cities, 2002 for 7 cities and 2004 for 3 cities

Delay in answers was due partially to the heterogeneity of data sources and centres able to work on HIA

Interpretation of classification criteria for monitoring stations is not homogeneous, and efforts are needed to improve the comparability of stations of the same type

Time available to do the work by participating centres was too short, and that have reduced in some cases the consistency of information

Annexes

Questionnaires on data availability sent to the centres

ENHIS Project-WP5

Feasibility questionnaire for Health Impact Assessment of Outdoor Air Pollution in European countries

Dear all,

As agreed in the meeting in Bonn, 9-11 February 2005, information in each city on data availability and quality for health impact assessment of outdoor air pollution for the ENHIS project is needed.

Please, complete the questions hereunder and send the questionnaire to Estela Díaz de Quijano (estela_quijano@telefonica.net) Health Public Agency of Barcelona and copy to Sylvia Medina (s.medina@invs.sante.fr) Institut National de Veille Sanitaire **no later than 20 April 2005**

Thank you very much for your cooperation.

1. Please indicate the number of different types of monitoring stations according to the definitions of Annex VI of the Council Directive 1999/30/EC (any no industrial station not complying the criteria for traffic stations should be considered of the background type).

Set of air pollution indicators	Routine source	Number of background monitoring stations	Number of traffic monitoring stations	Number of industrial monitoring stations	**Last available year for data**
1. PM10 (24 hours average)	☐	? ?	? ?	? ?	? ?
2. PM10 (yearly average)	☐	? ?	? ?	? ?	? ?
3. ..... Ozone (8 hours maximum of daily moving average in summer)	☐	? ?	? ?	? ?	? ?
4. ..... Ozone (8 hours maximum of daily moving average)	☐	? ?	? ?	? ?	? ?
5. Ozone (1 hour maximum daily value)	☐	? ?	? ?	? ?	? ?
6. PM2.5 (24 hours average)*	☐	? ?	? ?	? ?	? ?
7. Black smoke (24 hours average)*	☐	? ?	? ?	? ?	? ?

* Optional indicator where available

2. According to the results of former APHEIS findings on data availability, the delay to get health data seemed, in some cases, very long. Please explore in your city the possibility of shortening the delay of getting the health data and complete the following questions (approximate delay= in practical terms, delay expected by the centre to obtain the data, either routinely or through a more expedient specific way, when applicable).

GENERAL POPULATION

Mortality data	Routine Source	Approximate delay	**Last available year for data**
1. Total number of deaths* (ICD9<800; ICD10 A00-R99)	☐	? ?	? ?
2. Number of respiratory deaths* (ICD9 460-519; ICD10 J00-J99)	☐	? ?	? ?
3. Number of cardiovascular deaths* (ICD9 390-459; ICD10 I00-I99)	☐	? ?	? ?
Morbidity data	Routine Source	Approximate delay	? ?
4. Hospital respiratory admissions 15-64 years (ICD9 460-519; ICD10 J00-J99).....	☐	? ?	? ?
5. Hospital respiratory admissions >64 years (ICD9 460-519; ICD10 J00-J99).....	☐	? ?	? ?
6. Hospital cardiovascular admissions 15-64 years (ICD9 390-459; ICD10 I00-I99).....	☐	? ?	? ?
7. Hospital cardiovascular admissions >64 years (ICD9 390-459; ICD10 I00-I99)	☐	? ?	? ?

*among residents dead on location

CHILDREN

Mortality Data	Routine Source	Approximate delay for updating (days)	**Last available year for data**
1. Total number of postneonatal deaths* (ICD9<800; ICD10<S00)	☐	? ?	? ?
2. Total number of postneonatal deaths* [Including external causes] (ICD9 0-999; ICD10 A00-T98)	☐	? ?	? ?
3. Number of respiratory postneonatal deaths* (ICD9 460-519; ICD10 J00-J99)	☐	? ?	? ?
4. Number of postneonatal Sudden Infant Death Syndrome (SIDS) deaths* (ICD9 798.0; R95)	☐	? ?	? ?
Morbidity Data	Routine Source	Approximate delay for updating (days)	? ?
5. Hospital respiratory admissions <15 years (ICD9 460-519; ICD10 J00-J99)	☐	? ?	? ?
6. Number of emergency room visits for asthma (< 18 Years)	☐	? ?	? ?

*among residents dead on location; Postneonatal deaths: between 28 and 364 days.

3. Is there any information about the validity of mortality data?

☐ Yes. Please specify .....

☐ No

4. Are there any quality control procedures in place regarding mortality data ?

☐ Yes. Please specify .....

☐ No

5. Is there any information about the validity of hospital admissions data?

☐ Yes. Please specify .....

☐ No

6. Are there any quality control procedures in place regarding hospital admissions data?

☐ Yes. Please specify .....

☐ No

7. Is there any information about the validity of emergency room visits data?

☐ Yes. Please specify .....

☐ No

8. Are there any quality control procedures in place regarding emergency room visits data ?

☐ Yes. Please specify .....

☐ No

9. *Please, check and complete the following tables on characteristics of information sources for mortality, hospital admissions and emergency room visits data*

Characteristics of the information sources for MORTALITY DATA

City	Type of source	Y	Source (specify if national, regional or local)	Quality control programme	% Missing data in basic cause death	Codification		
						ICD	Manual%	Automatic%
Former APHEIS Centres								
Athens	Register		National statistical Service of Greece	-				
Barcelona	Register		Barcelona city council	Yes				
Bilbao	Register		Mortality Register of the Basque Autonomous Community	Yes		10		
Bordeaux	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Bucharest	Register		Medical Statistics Centre. Ministry of Health and Family and National Institute of Statistics	-		10		
Budapest	Register		Central Statistical Office, Budapest	Yes		10		
Celje	Register		Institute of Public Health of the Republic of Slovenia	Yes		10		
Cracow	Register		Department of Epidemiology and Preventive Medicine of the Jagiellonian University	Yes		10		
Dublin	Register		National Register, Central Statistics Office	Yes				
Gothenburg	Register		National Registry	Yes		10		
Le Havre	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Lille	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Ljubljana	Register		Institute of Public Health of the Republic of Slovenia	Yes		10		
London	Register		Office for National Statistics	Yes				
Lyon	Register		INSERM	Yes				
Madrid	Register		Registro de Mortalidad. Instituto de Estadística. Comunidad de Madrid.	Yes		10		
Marseille	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Paris	Register		INSERM SC8	Yes				
Roma	Register		Mortality Information System (SIM)	Yes				
Rouen	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Seville	Register		Mortality Register of Andalusia	Yes				
Stockholm	Register		National Registry	Yes		10		
Strasbourg	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Toulouse	Register		Institut National de la Santé et de la Recherche Médicale (CepiDC)	Yes				
Valencia	Register		Mortality Register of the Valencian Community	Yes		10		
New APHEIS Centres								
Brussels								
Copenhagen								
Hamburg								
Lisbon								
Prague								
Rotterdam								
Innsbruck								
Vienna								

Characteristics of the information sources for HOSPITAL ADMISSIONS data

City	Type of source (specify if discharges or admissions)	Year	Source (specify if national, regional or local)	ICD	Number of diagnosis codes	Quality control	Completeness (%)	Coverage (%)	% Missing data cause admission	Type of hospital admissions	
										Total	Emergency
Former APHEIS Centres											
Athens											
Barcelona	Register		Minimum set of Basic Hospital Data	9		Yes					X
Bilbao	Register		Hospital Discharge Register. Basque Autonomous Community	9		Yes					X
Bordeaux	Register		PMSI	10		Yes				X	
Bucharest											
Budapest	Register		Centre for Healthcare Information of the Ministry of Health, Social and Family Affairs	10		Yes					X
Celje	Register		Institute of Public Health of the Republic of Slovenia	10		Yes				X	
Cracow											
Dublin											
Gothenburg	Register		National Hospital Discharge Register	10		Yes					X
Le Havre	Register		PMSI	10		Yes				X	
Lille	Register		PMSI	10		Yes				X	
Ljubljana	Register		Institute of Public Health of the Republic of Slovenia	10		Yes				X	
London	Register		Health Episodes Statistics	10		Yes					X
Lyon	Register		PMSI	10		Yes				X	
Madrid	Register		Minimum set of Basic Hospital Data (CMBD). Consejería de Sanidad y Consumo. Comunidad de Madrid	9		Yes				X	X
Marseille	Register		PMSI	10		Yes				X	
Paris	Register		PMSI de L´Assistance Publique des Hôpitaux de Paris	10		Yes				X	
Roma	Register		Hospital Information System (SIO)	9		Yes				X	
Rouen	Register		PMSI	10		Yes				X	
Seville	Register		Minimum set of Basic Hospital Data. Andalusia Health Service	9		Yes					X
Stockholm	Register		National Hospital Discharge Register	10		Yes					X
Strasbourg	Register		PMSI	10		Yes				X	
Toulouse	Register		PMSI	10		Yes				X	
Valencia	Register		Minimum set of Basic Hospital Data	9		Yes					X
New APHEIS Centres											
Brussels											
Copenhagen											
Hamburg											
Lisbon											
Prague											
Rotterdam											
Innsbruck											
Vienna											

Characteristics of the information sources for EMERGENCY ROOM VISITS data on respiratory diseases

City	Type of source	Year	*Source*	Diagnosis	Quality control	Completeness (%)	% Missing data cause diagnosis	Coverage (%)	Computerized
Former APHEIS Centres									
Athens									
Barcelona									
Bilbao									
Bordeaux									
Bucharest									
Budapest									
Celje									
Cracow									
Dublin									
Gothenburg									
Le Havre									
Lille									
Ljubljana									
London									
Lyon									
Madrid									
Marseille									
Paris									
Roma									
Rouen									
Seville									
Stockholm									
Strasbourg									
Toulouse									
Valencia									
New APHEIS Centres									
Brussels									
Copenhagen									
Hamburg									
Lisbon									
Prague									
Rotterdam									
Innsbruck									
Vienna									

Type of source: specify if register, study, central, etc; Diagnosis: specify if ICD9, ICD10, literal, not exist, etc.

ENHIS Project-WP5

Supplementary questions to the Feasibility Questionnaire for Health Impact Assessment of Outdoor Air Pollution in European countries

Dear all,

We send you this two supplementary questions to the Feasibility Questionnaire, sent past march, 24th.

The aim is to know the existence/accessibility and quality of data about prevalence of respiratory symptoms we can relate to HIA of Atmospheric Outdoor Pollution. Probably there are not included in routine information systems, but its existence is useful to enlarge the few data available to evaluate the impact on morbidity outcomes.

Please, complete the questions hereunder and send the questionnaire to Estela Díaz de Quijano (estela_quijano@telefonica.net) Health Public Agency of Barcelona and copy to Sylvia Medina (s.medina@invs.sante.fr) Institut National de Veille Sanitaire **no later than 20 April 2005**

Thank you very much for your cooperation.

1. Please complete the following questions (approximate delay= in practical terms, delay expected by the centre to obtain the data, either routinely or through a more expedient specific way, when applicable).

CHILDREN

Morbidity Data	Routine Source	Other Sources	Approximate delay for updating (days)	Last available year for data
7. Cough (< 18 Years).....	☐	☐	? ?	? ?
8. Lower respiratory symptoms (< 18 Years) *	☐	☐	? ?	? ?

* Lower respiratory symptoms include wheezing, chest tightness and shortness of breath.

If other sources, please specify .....

10. Is there any information about the validity of these data?

☐ Yes. Please specify .....
☐ No

11. Are there any quality control procedures in place regarding these data ?

☐ Yes. Please specify .....
☐ No