



# Valutazione degli effetti cronici dell'esposizione occupazionale e ambientale sulla mortalità e morbosità nella coorte longitudinale di Roma

**Meeting finale del Progetto BIGEPI  
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## Obiettivo Specifico 5

Indagare i possibili **rischi di malattia e di mortalità** associati **all'esposizione occupazionale e/o ambientale** sulla coorte di Roma.

- ✓ costruzione della coorte longitudinale di Roma e delle informazioni socio-demografiche, residenziali e sanitarie (mortalità e morbosità);
- ✓ raccolta dei dati relativi alla storia occupazionale dei soggetti inclusi nello studio longitudinale di Roma;
- ✓ identificazione di classi di esposizione occupazionale dalle storie occupazionali;
- ✓ valutazione congiunta degli effetti cronici delle esposizioni occupazionali ed ambientali sul rischio di morbosità e mortalità causa-specifica, considerando l'effetto confondente di fattori quali l'età, il genere, l'istruzione, il luogo di nascita, lo stato civile e indicatori di posizione socio-economica della sezione di censimento di residenza.

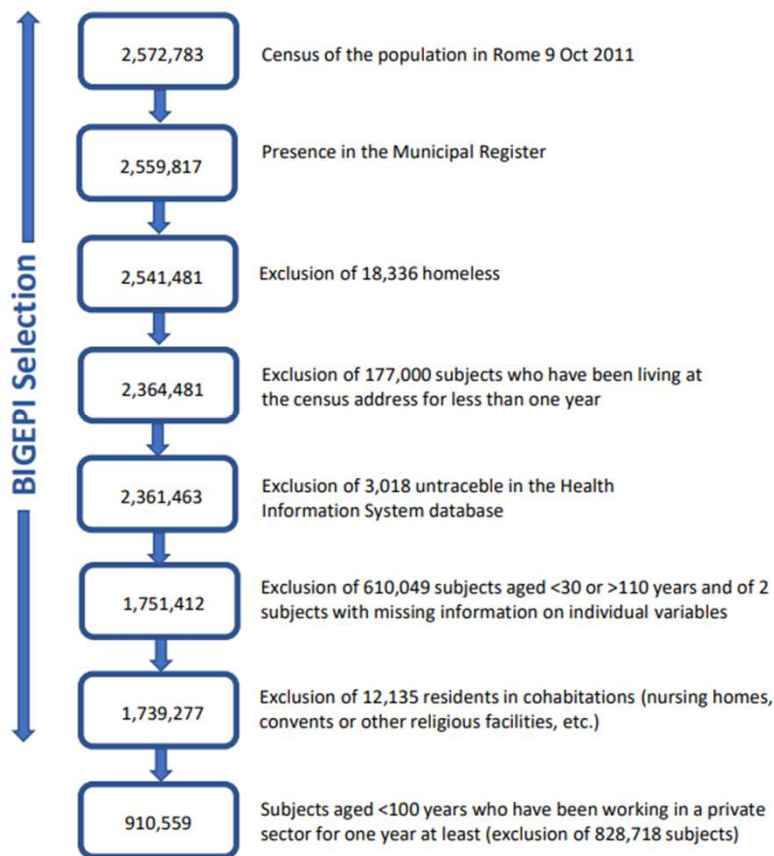


Figure 1. Flow-chart of the study population selection

### COORTE FINALE DI POPOLAZIONE:

Tutti i soggetti residenti (da Anagrafe) nella città al 9-10-2011 censiti nel Censimento 2011, non identificati come “senzatetto” o “residenti in convivenze” senza problemi di tracciabilità nei Sistemi Informativi Regionali (al fine di recuperare informazioni su mortalità, ricoveri ospedalieri, ecc.)

### LINKAGE ARCHIVIO INPS:

I dati contributivi dei lavoratori delle imprese del settore privato con almeno un dipendente, iscritte presso gli archivi informatizzati dell'INPS a partire dal 1974.

Manca il settore pubblico: Amministrazioni centrali (Magistratura, Autorità Indipendenti, Agenzie fiscali, Ministeri, Presidenza del Consiglio, Carriera diplomatica e prefettizia), Amministrazioni locali, Corpi di polizia, Forze Armate e Vigili del Fuoco, Scuola, Sanità, Università ed enti di ricerca, Enti pubblici non economici, Enti che producono servizi di pubblica utilità, lavoratori autonomi, artigiani, domestici, parasubordinati, occasionali. La percentuale di linkage è: 43% (37% F. 49% M)



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Le aziende sono classificate secondo il **ramo di attività economica** mediante un codice interno INPS (CSC) che può essere convertito in un codice internazionale (ATECO 81) mediante apposite tabelle.

Le attività economiche sono state ulteriormente aggregate in **24 categorie** :  
Agriculture, forestry, and fishing; Steel industry; Printing and publishing;  
Pharmaceutical and chemical industry; Manufacturing; Manufacture of textiles;  
Electricity, gas, steam, and air conditioning supply; Food and tobacco production;  
Non-metal mineral industry; Glass-ceramic industry; Metal processing;  
Manufacture of electrical equipment; Footwear and wood; Constructions; Sales and  
Transport; Wholesale and retail trade; Hotels, camping. Bars, and restaurants;  
Transportation and storage; Insurance activities; Healthcare; Services; Waste  
collection, treatment, and disposal activities; Hairdressing, saloons and Washing  
and dry-cleaning of textile; and finally, Gas stations.



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## Metodi

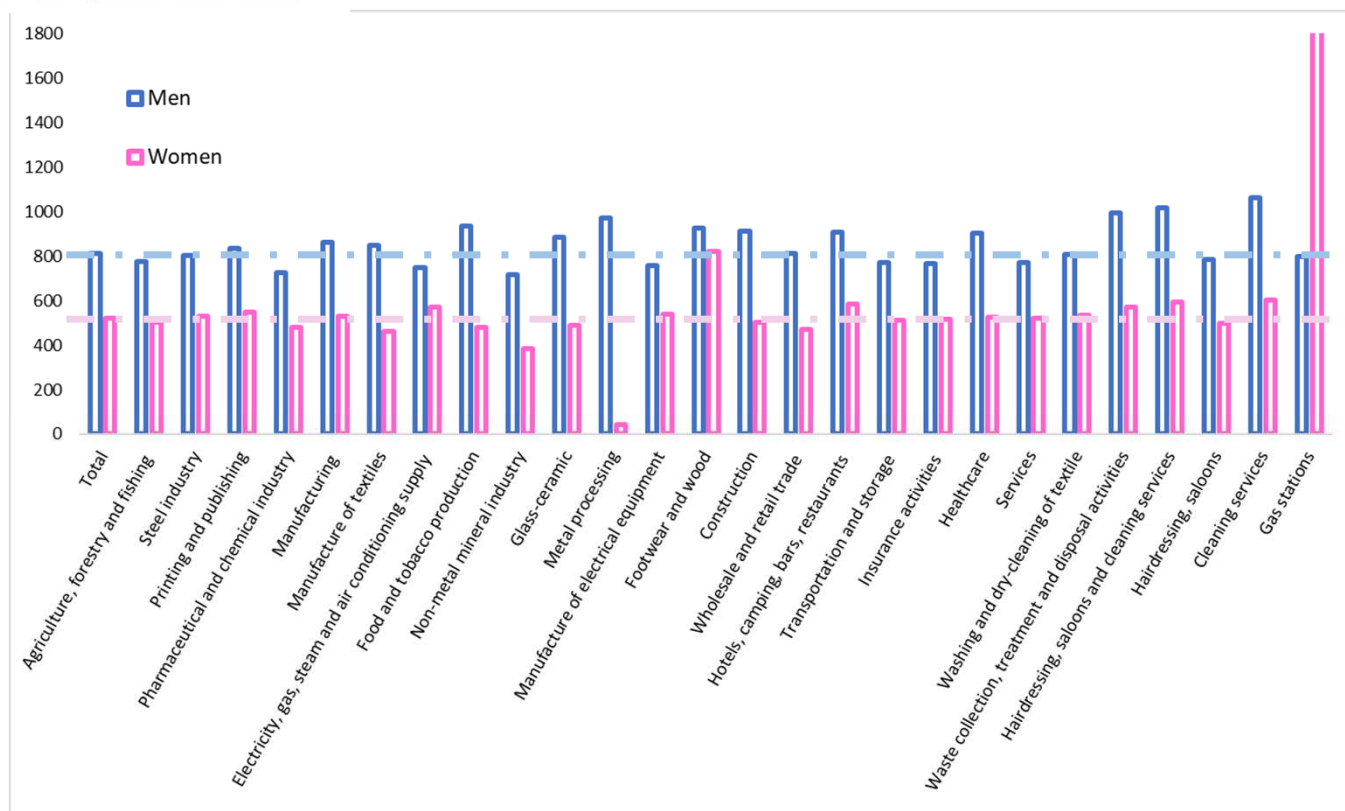
**Esposizione professionale:** è definita come impiegato in un settore SI/NO avente durata maggiore di 1 anno e successivamente come settore avente la maggiore durata.

**Follow-up:** dal censimento del 2011 al 31/12/2018 (6ml+ ap)

**Analisi statistica:** tassi standardizzati per età per ogni singolo comparto e regressione di Cox con l'età come scala temporale per studiare l'associazione tra il settore lavorativo (Ever/never) e la mortalità negli uomini e nelle donne mediante l'Hazard ratio (HR) e l'intervallo di confidenza al 95%.

I modelli sono stati aggiustati per livello di istruzione, stato civile e luogo di nascita.

E' stato replicato il modello di analisi considerando come proxy di esposizione il comparto con maggior durata e come categoria di riferimento il settore delle assicurazioni.



Age-standardized mortality rates for non-accidental mortality by sector of employment. Men and women. Rome 2011-2019



Comparto	Uomini				Donne			
	N	% bassa istruzione	% alta istruzione	% stranieri	N	% bassa istruzione	% alta istruzione	% stranieri
<b>Totale</b>	478,199	41	18	5	432,360	34	19	3
<b>Agricoltura e pesca</b>	22,595	74	7	3	28,599	83	4	0
<b>Industria</b>								
Industria meccanica e siderurgica	72,872	35	23	2	29,807	14	31	1
Carta e stampa	17,140	50	11	1	11,573	34	16	1
Industria chimica e farmaceutica	17,438	25	34	1	11,161	20	31	1
Industria manifatturiera	13,737	29	26	1	8,559	21	22	1
Abbigliamento e industria tessile	3,939	63	7	10	10,926	71	4	4
Produzione e distribuzione di energia e acqua	6,340	26	31	0	3,124	15	34	1
Industria alimentare, bevande e tabacco	12,079	59	10	6	6,857	49	11	5
Industria mineraria	1,066	57	12	3	337	16	11	2
Vetro-cemento	1,216	63	8	2	432	43	9	1
Trattamento dei metalli	605	65	6	6	117	43	12	2
Costruzioni elettriche	27,682	26	24	1	10,389	32	22	1
Calzature e legno	7,736	72	4	5	2,928	53	8	2
<b>Edilizia</b>	74,620	57	8	9	14,422	15	15	2

Comparto	Uomini				Donne			
	N	% bassa istruzione	% alta istruzione	% stranieri	N	% bassa istruzione	% alta istruzione	% stranieri
<b>Totale</b>	478,199	41	18	5	432,360	34	19	3
<b>Commercio, pubblici esercizi, trasporti</b>								
Commercio	98,129	42	12	4	105,004	32	12	3
Alberghi	38,336	54	7	16	28,989	47	9	11
Trasporti	64,579	46	12	2	19,673	14	25	2
<b>Credito, assicurazioni e servizi</b>								
Assicurazioni	84,831	20	28	2	90,992	15	24	2
Sanità	9,008	24	38	4	29,671	31	19	5
Servizi	71,231	33	29	4	112,747	28	28	2
<b>Altre attività di servizi</b>								
Lavanderie	1,367	50	15	6	2,161	71	4	5
Nettezza urbana	2,070	54	8	3	998	37	10	1
Parrucchieri e pulizie	16,640	65	4	9	40,368	73	3	6
Parrucchieri	1,768	80	2	2	7,747	80	2	2
Pulizie	14,888	63	5	10	33,270	72	3	7
Benzinai	2,360	68	5	14	426	31	11	6



## Non-accidental mortality

### Males

### Females

Age-adjusted

Fully-adjusted

Age-adjusted

Fully-adjusted

D HR 95%CI HR 95%CI D HR 95%CI HR 95%CI

	D	HR	95%CI	HR	95%CI	D	HR	95%CI	HR	95%CI
<u>Agriculture, forestry and fishing</u>	4147	0.95	0.92 0.98	0.94	0.91 0.97	3584	0.92	0.89 0.96	0.96	0.92 1.01
<b>Industry</b>										
Steel industry	3290	0.97	0.93 1.00	0.96	0.93 1.00	462	0.92	0.84 1.01	0.92	0.83 1.01
Printing and publishing	1611	1.04	0.99 1.09	0.98	0.93 1.03	478	1.03	0.94 1.13	0.99	0.90 1.09
<u>Pharmaceutical and chemical industry</u>	1472	0.90	0.85 0.94	0.96	0.91 1.01	454	0.94	0.86 1.03	0.95	0.86 1.04
Manufacturing	1031	1.01	0.95 1.08	1.04	0.98 1.11	290	1.03	0.92 1.16	1.02	0.90 1.14
<u>Manufacture of textiles</u>	346	1.01	0.91 1.12	0.95	0.85 1.06	469	0.95	0.86 1.04	0.87	0.80 0.96
Electricity, gas, steam & air con. supply	592	0.90	0.83 0.98	0.91	0.84 0.99	119	0.95	0.79 1.14	0.95	0.79 1.14
Food and tobacco production	1106	1.16	1.09 1.23	1.11	1.05 1.18	184	1.06	0.92 1.23	1.01	0.87 1.17
<u>Non-metal mineral industry</u>	135	1.02	0.86 1.21	1.03	0.87 1.22	16	0.91	0.56 1.49	0.92	0.56 1.51
Glass-ceramic	113	1.06	0.88 1.28	1.00	0.83 1.20	15	0.91	0.55 1.52	0.88	0.53 1.46
Metal processing	39	1.66	1.21 2.27	1.48	1.08 2.02	1	0.39	0.06 2.78	0.38	0.05 2.69
<u>Manufacture of electrical equipment</u>	1617	0.89	0.85 0.94	0.92	0.88 0.97	433	1.04	0.94 1.14	1.01	0.92 1.11
Footwear and wood	805	1.19	1.11 1.28	1.10	1.02 1.18	88	1.11	0.90 1.37	1.06	0.86 1.31
<b>Construction</b>	7315	1.15	1.12 1.18	1.11	1.08 1.14	375	0.97	0.88 1.08	0.96	0.86 1.06

## Non-accidental mortality

### Males

### Females

	Age-adjusted			Fully-adjusted			Age-adjusted			Fully-adjusted		
	D	HR	95%CI	HR	95%CI		D	HR	95%CI	HR	95%CI	
<b>Sales and Transport</b>												
Wholesale and retail trade	5786	1.06	1.03 1.09	1.02	0.99 1.05		2345	0.97	0.93 1.02	0.92	0.88 0.96	
Hotels, camping, bars, restaurants	2419	1.16	1.11 1.21	1.09	1.05 1.14		1011	1.17	1.10 1.25	1.12	1.05 1.19	
Transportation and storage	6531	0.99	0.97 1.02	0.96	0.94 0.99		725	1.04	0.96 1.12	1.04	0.96 1.12	
<b>Credit, insurances and services</b>												
Insurance activities	4654	0.91	0.88 0.93	0.98	0.95 1.01		1905	1.01	0.96 1.06	1.00	0.95 1.05	
Healthcare	524	1.00	0.92 1.09	1.09	1.00 1.19		1123	1.05	0.99 1.11	1.03	0.97 1.10	
Services	7009	0.92	0.90 0.95	0.98	0.95 1.01		6261	0.97	0.94 1.00	1.00	0.97 1.03	
<b>Other services</b>												
Washing and dry-cleaning of textile	85	1.05	0.85 1.30	1.03	0.83 1.28		70	0.94	0.74 1.19	0.88	0.69 1.11	
Waste collection, treatment & disposal	84	1.09	0.88 1.35	1.01	0.81 1.25		21	1.50	0.98 2.30	1.41	0.92 2.16	
Hairdressing, saloons	91	0.91	0.74 1.11	0.79	0.64 0.97		114	1.01	0.84 1.22	0.89	0.74 1.07	
Cleaning	833	1.42	1.33 1.52	1.25	1.17 1.34		1671	1.23	1.17 1.30	1.17	1.11 1.23	
Gas stations	137	1.10	0.93 1.30	1.03	0.87 1.22		10	1.62	0.87 3.02	1.59	0.85 2.96	

\* Adjusted for age, marital status, education, and place of birth

## Non-accidental mortality Males

	Association between sector of employment and non-accidental mortality -Men						
	D	Model Ever/Never Fully-adjusted			Model Prevalent sector Fully-adjusted		
		HR	95%CI		HR	95%CI	
Agriculture, forestry and fishing	4147	0.94	0.91	0.97	1.02	0.96	1.07
<b>Industry</b>							
Steel industry	3290	0.96	0.93	1.00	1.00	0.95	1.06
Printing and publishing	1611	0.98	0.93	1.03	1.01	0.95	1.08
Pharmaceutical and chemical industry	1472	0.96	0.91	1.01	0.99	0.93	1.06
Manufacturing	1031	1.04	0.98	1.11	<b>1.11</b>	<b>1.02</b>	<b>1.20</b>
Manufacture of textiles	346	0.95	0.85	1.06	1.03	0.91	1.17
Electricity, gas, steam & air con. supply	592	0.91	0.84	0.99	0.94	0.86	1.02
Food and tobacco production	1106	<b>1.11</b>	<b>1.05</b>	<b>1.18</b>	<b>1.15</b>	<b>1.07</b>	<b>1.24</b>
Non-metal mineral industry	135	1.03	0.87	1.22	0.99	0.79	1.25
Glass-ceramic	113	1.00	0.83	1.20	1.09	0.88	1.36
Metal processing	39	<b>1.48</b>	<b>1.08</b>	<b>2.02</b>	<b>1.75</b>	<b>1.14</b>	<b>2.69</b>
Manufacture of electrical equipment	1617	0.92	0.88	0.97	0.95	0.89	1.02
Footwear and wood	805	<b>1.10</b>	<b>1.02</b>	<b>1.18</b>	<b>1.15</b>	<b>1.05</b>	<b>1.26</b>
<b>Construction</b>	7315	<b>1.11</b>	<b>1.08</b>	<b>1.14</b>	<b>1.12</b>	<b>1.08</b>	<b>1.17</b>
<b>Sales and Transport</b>							
Wholesale and retail trade	5786	1.02	0.99	1.05	1.03	0.99	1.08
Hotels, camping, bars, restaurants	2419	<b>1.09</b>	<b>1.05</b>	<b>1.14</b>	<b>1.12</b>	<b>1.06</b>	<b>1.19</b>
Transportation and storage	6531	0.96	0.94	0.99	0.98	0.94	1.02
<b>Credit, insurances and services</b>							
Insurance activities	4654	0.98	0.95	1.01	1.00		
Healthcare	524	<b>1.09</b>	<b>1.00</b>	<b>1.19</b>	<b>1.15</b>	<b>1.04</b>	<b>1.27</b>
Services	7009	0.98	0.95	1.01	1.01	0.96	1.05
<b>Other services</b>							
Washing and dry-cleaning of textile	85	1.03	0.83	1.28	1.02	0.79	1.32
Waste collection, treatment & disposal	84	1.01	0.81	1.25	0.95	0.72	1.26
Hairdressing, saloons	91	0.79	0.64	0.97	0.86	0.69	1.07
Cleaning	833	<b>1.25</b>	<b>1.17</b>	<b>1.34</b>	<b>1.27</b>	<b>1.16</b>	<b>1.39</b>
Gas stations	137	1.03	0.87	1.22	0.80	0.63	1.03

## Non-accidental mortality. Females

	Association between sector of employment and non-accidental mortality - Women						
	D	Model Ever/Never Fully-adjusted			Model Prevalent sector Fully-adjusted		
		HR	95%CI		HR	95%CI	
Agriculture, forestry and fishing	3584	0.96	0.92	1.01	1.01	0.94	1.08
<b>Industry</b>							
Steel industry	462	0.92	0.83	1.01	0.97	0.86	1.10
Printing and publishing	478	0.99	0.90	1.09	1.02	0.91	1.14
Pharmaceutical and chemical industry	454	0.95	0.86	1.04	0.91	0.81	1.03
Manufacturing	290	1.02	0.90	1.14	1.01	0.87	1.17
Manufacture of textiles	469	0.87	0.80	0.96	0.88	0.78	0.98
Electricity, gas, steam & air con. supply	119	0.95	0.79	1.14	0.95	0.79	1.16
Food and tobacco production	184	1.01	0.87	1.17	1.04	0.87	1.24
Non-metal mineral industry	16	0.92	0.56	1.51	0.72	0.37	1.39
Glass-ceramic	15	0.88	0.53	1.46	0.93	0.52	1.64
Metal processing	1	0.38	0.05	2.69	0.64	0.09	4.55
Manufacture of electrical equipment	433	1.01	0.92	1.11	1.02	0.91	1.15
Footwear and wood	88	1.06	0.86	1.31	1.02	0.78	1.34
<b>Construction</b>	375	0.96	0.86	1.06	1.01	0.89	1.15
<b>Sales and Transport</b>							
Wholesale and retail trade	2345	0.92	0.88	0.96	0.95	0.88	1.02
Hotels, camping, bars, restaurants	1011	<b>1.12</b>	<b>1.05</b>	<b>1.19</b>	<b>1.11</b>	<b>1.02</b>	<b>1.21</b>
Transportation and storage	725	1.04	0.96	1.12	1.04	0.94	1.14
<b>Credit, insurances and services</b>							
Insurance activities	1905	1.00	0.95	1.05	1.00		
Healthcare	1123	1.03	0.97	1.10	1.05	0.97	1.14
Services	6261	1.00	0.97	1.03	1.00	0.95	1.06
<b>Other services</b>							
Washing and dry-cleaning of textile	70	0.88	0.69	1.11	0.89	0.69	1.16
Waste collection, treatment & disposal	21	1.41	0.92	2.16	1.12	0.50	2.51
Hairdressing, saloons	114	0.89	0.74	1.07	0.94	0.77	1.16
Textile washing and dry-cleaning	1671	<b>1.17</b>	<b>1.11</b>	<b>1.23</b>	<b>1.20</b>	<b>1.11</b>	<b>1.29</b>
Gas stations	10	1.59	0.85	2.96	1.66	0.53	5.17

## Mortalità per cause respiratorie

478,199 uomini e 432,360 donne seguiti dal censimento del 2011 al 31/12/2018 (6ml+ ap)  
42,723 decessi negli uomini e 20,082 nelle donne

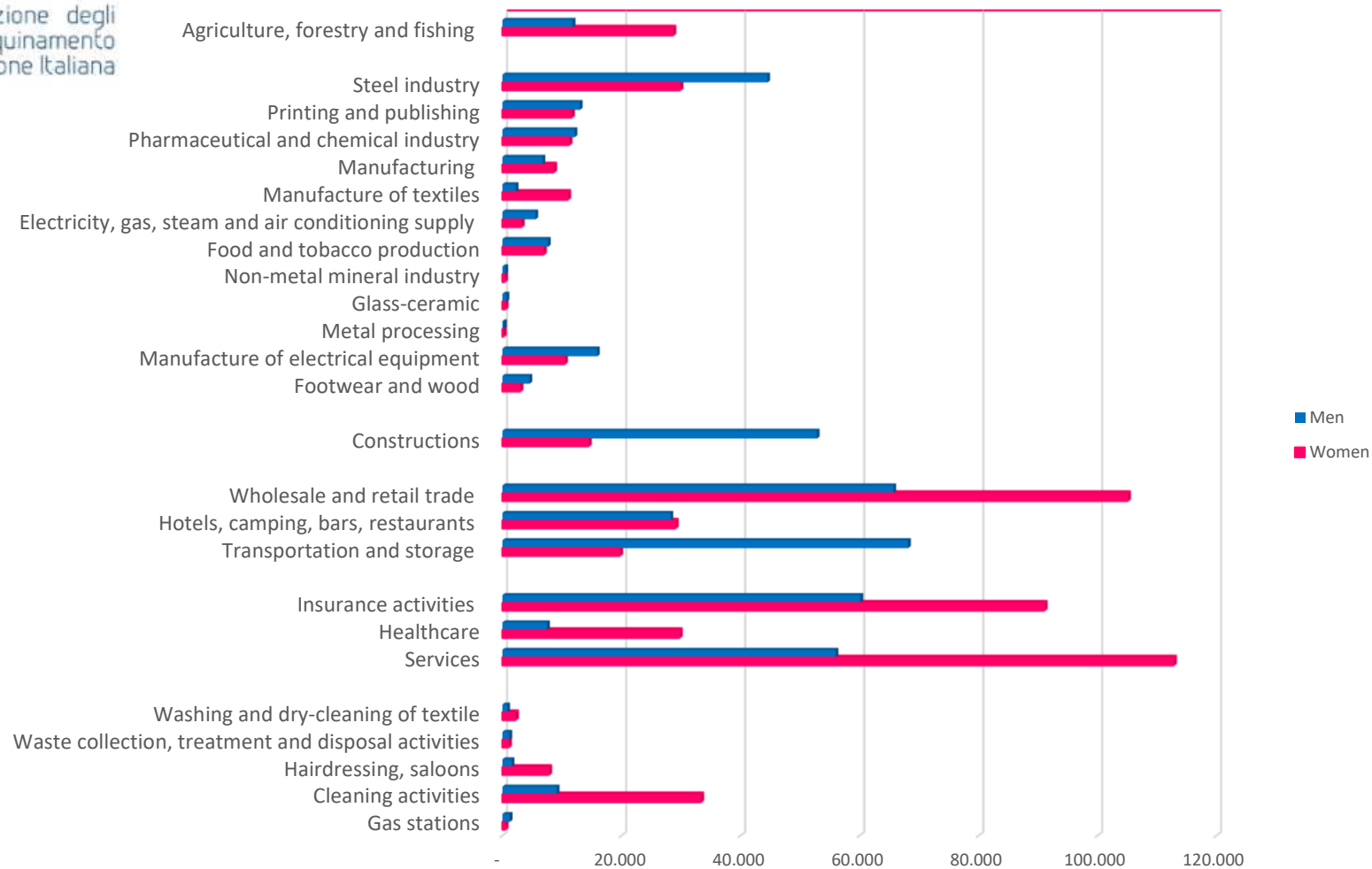
		Decessi	TGM (per 10,000) IC 95%		
<b>Cause naturali</b>	<b>Uomini</b>	40278	109.9	108.9	111.0
	<b>Donne</b>	18922	55.7	54.9	56.5
<b>Cause respiratorie</b>	<b>Uomini</b>	2897	7.9	7.6	8.2
	<b>Donne</b>	1236	3.6	3.4	3.8
<b>BPCO</b>	<b>Uomini</b>	1702	4.6	4.4	4.9
	<b>Donne</b>	704	2.1	1.9	2.2

## Mortalità per cause respiratorie

<b>Comparto</b>	<b>N</b>	<b>HR</b>	<b>IC95%</b>	
<b>Uomini</b>				
Industria alimentare e del tabacco	2897	1.33	1.08	1.65
Calzature e legno	2897	1.37	1.07	1.76
Edilizia	2897	1.31	1.20	1.44
Alberghi, ristoranti, etc.	2897	1.25	1.07	1.46
Benzinai	2897	1.85	1.12	3.08
Pulizie	2897	1.57	1.19	2.06
<b>Donne</b>				
Pulizie	1236	1.52	1.27	1.82

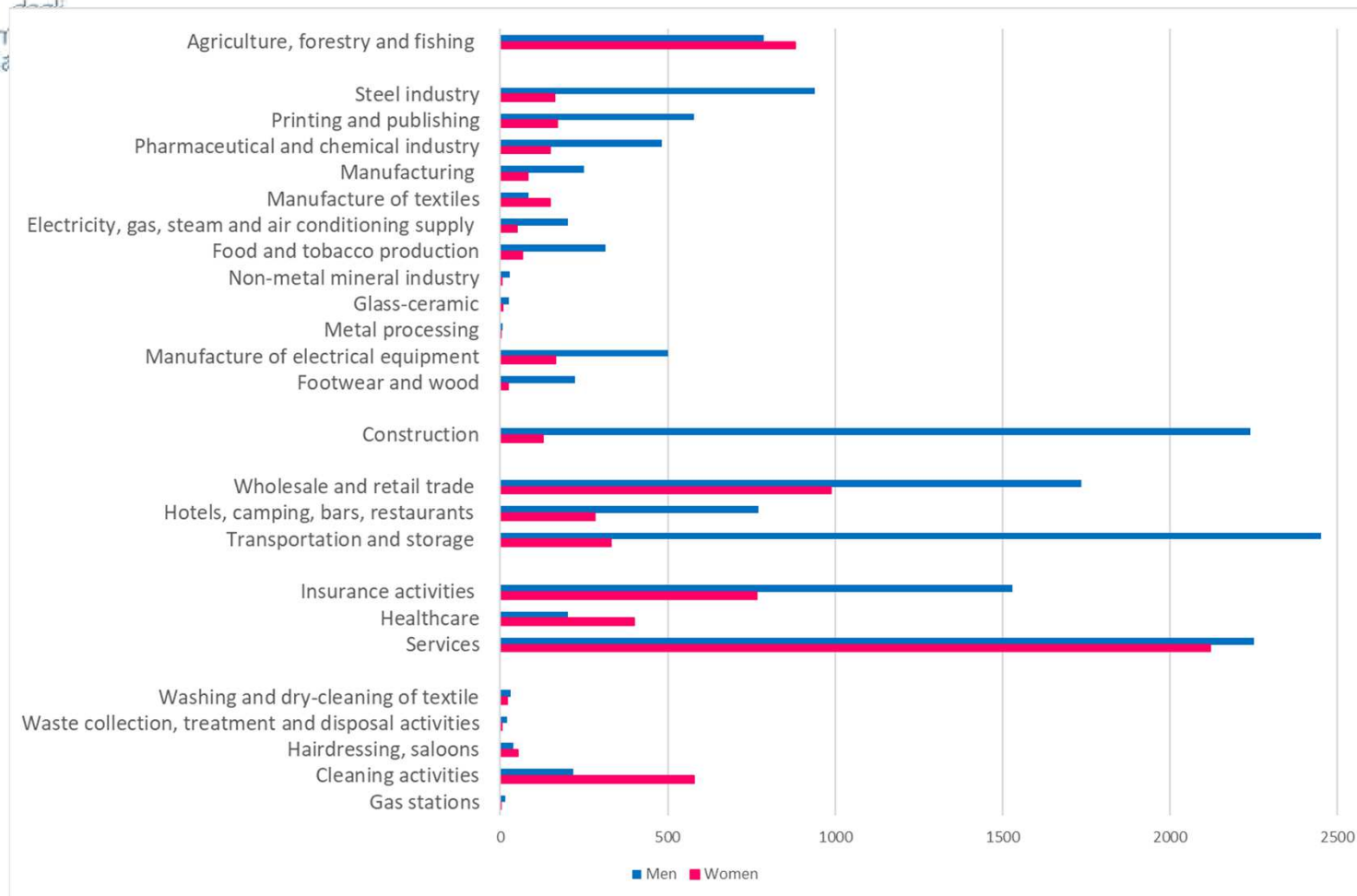
HR aggiustati per età

## Mortalità per tumore



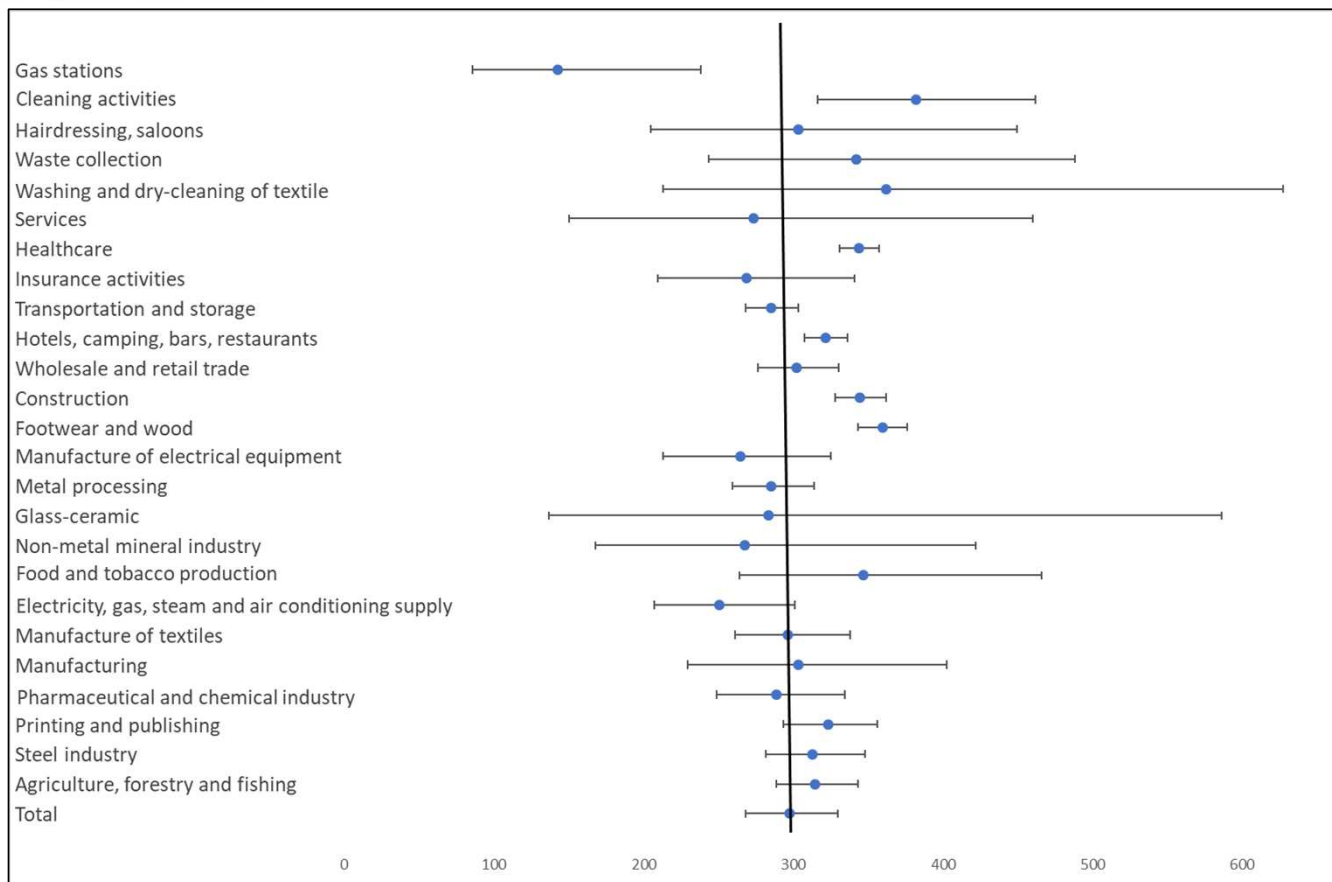
Population by prevalent sector of employment by gender in the cohort of Rome 2011-2019

## Mortalità per tumore

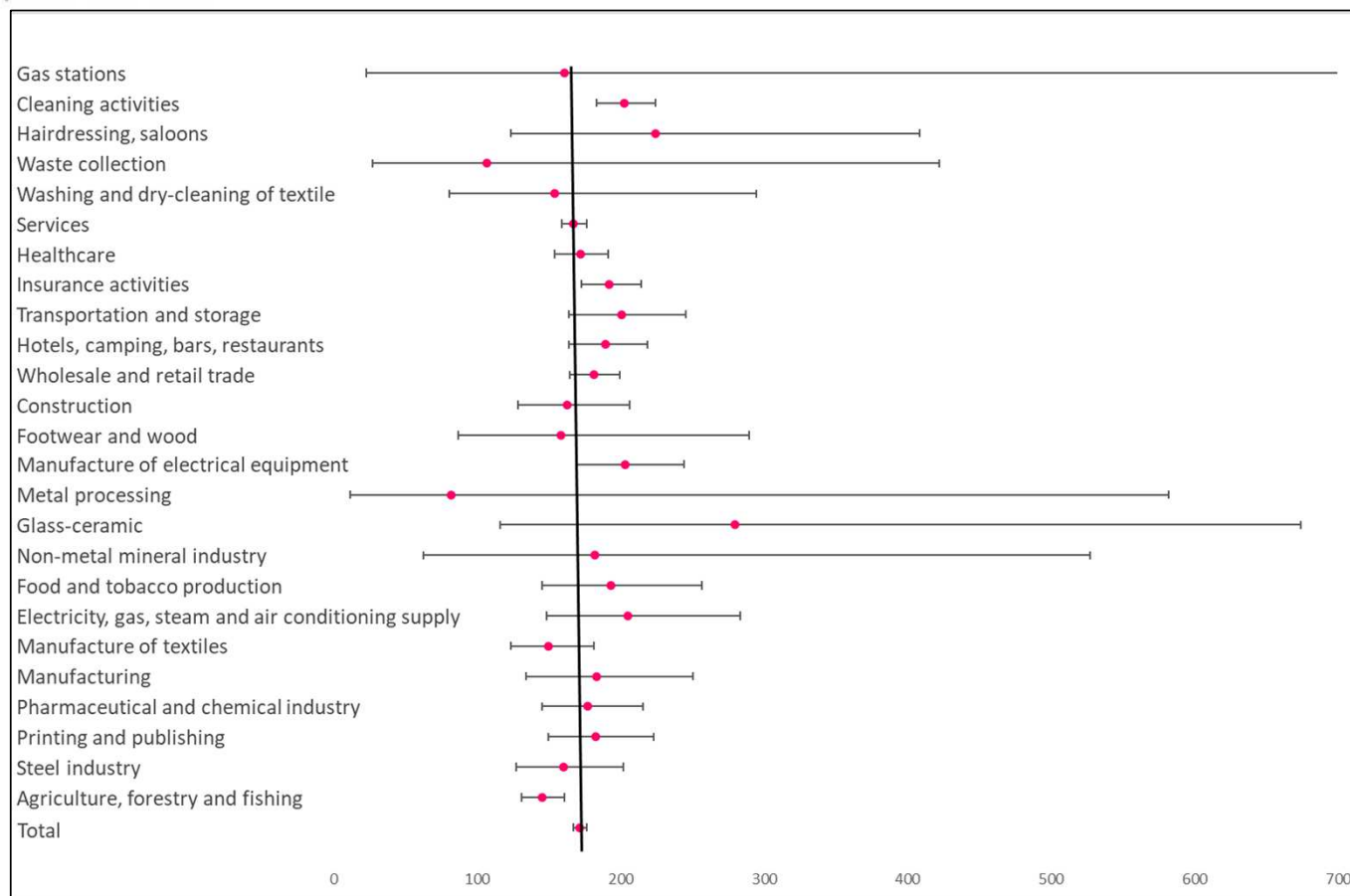


Cancer mortality by prevalent sector of employment and gender in the cohort of Rome 2011-2019





**Age-Standardized mortality rates by prevalent sector of employment and cancer mortality (per 10,000) 95% CI in the cohort of Rome 2011-2019 – Men**



Age-Standardized mortality rates by prevalent sector of employment and cancer mortality (per 10,000) 95% CI in the cohort of Rome 2011-2019 – Women

**Association between sector of employment and cancer mortality \* – Men**

Cause of death (ICD-9 codes)	Occupational categories	N	HR adj (95% CI)	Associations confirmed by IARC
Malignant cancer (140-208) **	Manufacture of food and tobacco products	313	1,17 (1,04-1,33)	
Malignant cancer (140-208)	Manufacture of wood and leather products	224	1,17 (1,02-1,35)	
Malignant cancer (140-208) **	Construction	2240	1,21 (1,13-1,30)	
Malignant cancer (140-208)	Wholesale and retail trade	1734	1,10 (1,02-1,18)	
Malignant cancer (140-208) **	Accommodation and food service activities	772	1,18 (1,08-1,29)	
Malignant cancer (140-208) **	Human health and social work activities	203	1,28 (1,11-1,49)	
Malignant cancer (140-208) **	Cleaning activities	217	1,26 (1,09-1,45)	
Stomach (151) **	Manufacture of machinery for paper and Printing	37	1,69 (1,11-2,57)	
Stomach (151)	Construction	125	1,49 (1,08-2,06)	IARC 2A
Stomach (151) **	Accommodation and food service activities	51	1,65 (1,12-2,44)	
Stomach (151)	Cleaning activities	16	1,98 (1,13-3,49)	
Colon and rectum (153-154, 159)	Manufacture of wood and leather products	34	1,61 (1,11-2,35)	
Liver (155-156)	Construction	156	1,33 (1,02-1,74)	
Trachea, bronchus and lung (162) **	Manufacture of food and tobacco products	110	1,41 (1,14-1,74)	
Trachea, bronchus and lung (162) **	Construction	670	1,27 (1,12-1,44)	IARC 1 e 2A
Trachea, bronchus and lung (162)	Wholesale and retail trade	541	1,17 (1,03-133)	
Trachea, bronchus and lung (162) **	Accommodation and food service activities	237	1,26 (1,07-1,48)	
Trachea, bronchus and lung (162) **	Human health and social work activities	66	1,51 (1,17-1,97)	
Trachea, bronchus and lung (162) **	Cleaning activities	80	1,55 (1,22-1,98)	
Pleura (163) **	Construction	25	3,46 (1,37-8,69)	IARC 1
Prostate (185) **	Manufacture of electrical equipment	49	1,48 (1,05-2,08)	IARC 1
Prostate (185)	Manufacture of wood and leather products	23	1,82 (1,15-2,88)	IARC 1
Central nervous system (191,192,225) **	Construction	60	1,54 (1,04-2,29)	
Brain (191) **	Manufacture of basic metals and machining	42	1,56 (1,02-2,39)	
Brain (191) **	Construction	54	1,55 (1,03-2,34)	

\* Model prevalent sector adjusted for age, marital status, education and place of birth

\*\* HR >1 statistically significant for a duration of employment greater than 10 years



### Epidemiological evidences– Men

Cause of death (ICD-9 codes)	Occupational categories	IARC Group 1	IARC Group 2A	INAIL I	
Stomach (151)	Construction		Amianto, piombo		
Liver (155-156)	Construction				
Trachea, bronchus and lung (162)	Construction	Cromo, fumi di saldatura, silice, peci di catrame di carbone, radon 22	Benzene, bitumi, creosoti	IPA (benzo-A-pirene)	
Pleura (163)	Construction	Amianto, Erionite			
Central nervous system (191,192,225)	Construction				
Brain (191)	Construction				
Malignant cancer (140-208)	Cleaning activities				
Stomach (151)	Cleaning activities				
Trachea, bronchus and lung (162)	Cleaning activities				Composti organici volatili associati ad asma e malattie respiratorie
Prostate (185)	Manufacture of electrical equipment	Arsenico, cadmio			
Prostate (185)	Manufacture of wood and leather products	Arsenico			

### Association between sector of employment and cancer mortality\* – Women

Cause of death (ICD-9 codes)	Occupational categories	N	HR adj (95% CI)	Associations confirmed by IARC
Malignant cancer (140-208) **	Cleaning activities	580	1,15 (1,03-1,29)	
Liver (155-156)	Manufacture of chemicals, pharmaceutical and rubber products	12	2,29 (1,12-4,68)	IARC 1 e 2A
Liver (155-156)	Human health and social work activities	24	1,88 (1,04-3,43)	
Liver (155-156)	Cleaning activities	30	1,94 (1,08-3,48)	
Trachea, bronchus and lung (162) **	Other manufacturing	31	1,66 (1,13-2,45)	
Pleura (163)	Manufacture of machinery for paper and Printing	4	8,29 (1,50-45,78)	
Lymphatic and haematopoietic tissue (200–208)	Transportation and storage	31	1,59 (1,00-2,52)	IARC 1 e 2A
Lymphatic and haematopoietic tissue (200–208)	Human health and social work activities	44	1,68 (1,10-2,56)	
Lymphatic and haematopoietic tissue (200–208)	Cleaning activities	52	1,65 (1,09-2,50)	
Leukemia (204-208)	Agriculture, Forestry, Hunting and Fishing	53	2,03 (1,12-3,71)	IARC 1 e 2A

\* Model prevalent sector adjusted for age, marital status, education and place of birth

\*\* HR >1 statistically significant for a duration of employment greater than 10 years

### Epidemiological evidences – Women

Cause of death (ICD-9 codes)	Occupational categories	IARC Group 1	IARC Group 2A	INAIL I
Liver (155-156)	Manufacture of chemicals, pharmaceutical and rubber products	1,2 dicloropropano, cloruro di vinile	Arsenico, DDT, diclorometano, radiazioni ionizzanti, tricloroetilene	
Trachea, bronchus and lung (162)	Other manufacturing			
Pleura (163)	Manufacture of machinery for paper and Printing			
Lymphatic and haematopoietic tissue (200–208)	Transportation and storage	Benzene (LMA)	Benzene (LLC, NHL,MM)	Benzene (leucemie)
Leukemia (204-208)	Agriculture, Forestry, Hunting and Fishing	Benzene (LMA), Formaldeide (Leucemie, Linfomi), Linfano, Pentaclorofenolo (NHL)	2,3,7,8-Tetraclorodibenzo-para- diossina, Benzene, Diazinone, Diclorodifeniltricloro-etano (DDT), Diclorometano, Glifosato, Malatione, Ossido di Etilene, Policlorofenoli (NHL) Benzene, Ossido di Etilene (LLC,MM) Diazinone (Leucemie)	



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