

**INAIL**



***Segnalazioni e nessi di causa attraverso il sistema Malprof***

**Reports and causal connections through Malprof System**

*Giuseppe Campo*

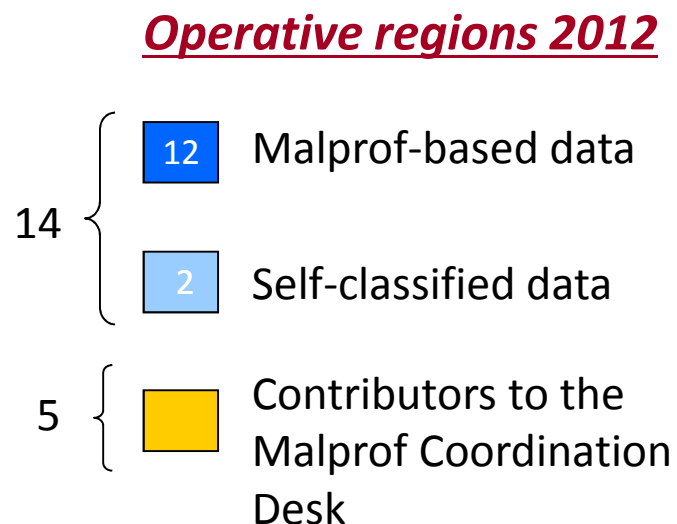
## Preamble

By its nature, the phenomenon of professional illnesses is hard to represent in terms of quantity as well as quality, and requires a multi-level action for a better understanding. In particular for the purpose of:

- consolidate and enhance the existing sources of information
- combine the available data
- derive useful hints for the prevention policies

## MALPROF: the reports collection network

With the contribution of the Prevention Services from Lombardy and Tuscany, the OD surveillance starts out in 2000 and spreads out in 2005 to the regions of Emilia Romagna, Liguria, Piedmont and Veneto



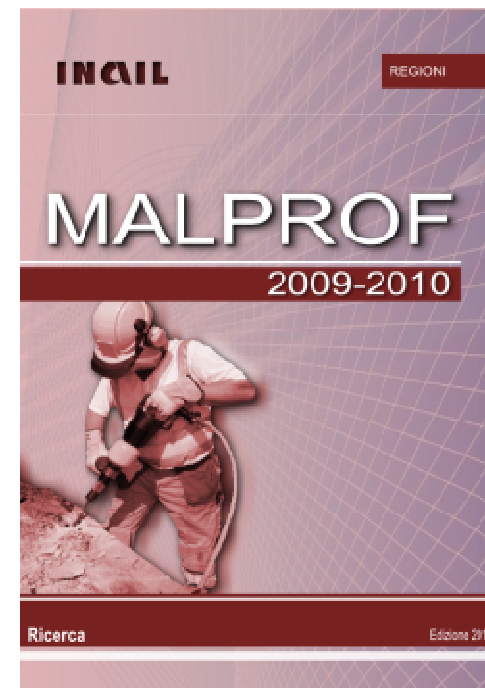
## Goal of the MALPROF system

To register the reports of work-related illnesses according to a common survey and analysis model for all the Prevention Services present on national soil.

### ***Database 2010***

Total Reports: 17.971  
 % Positive Links\*: 75,3 %

\* according to Malprof model

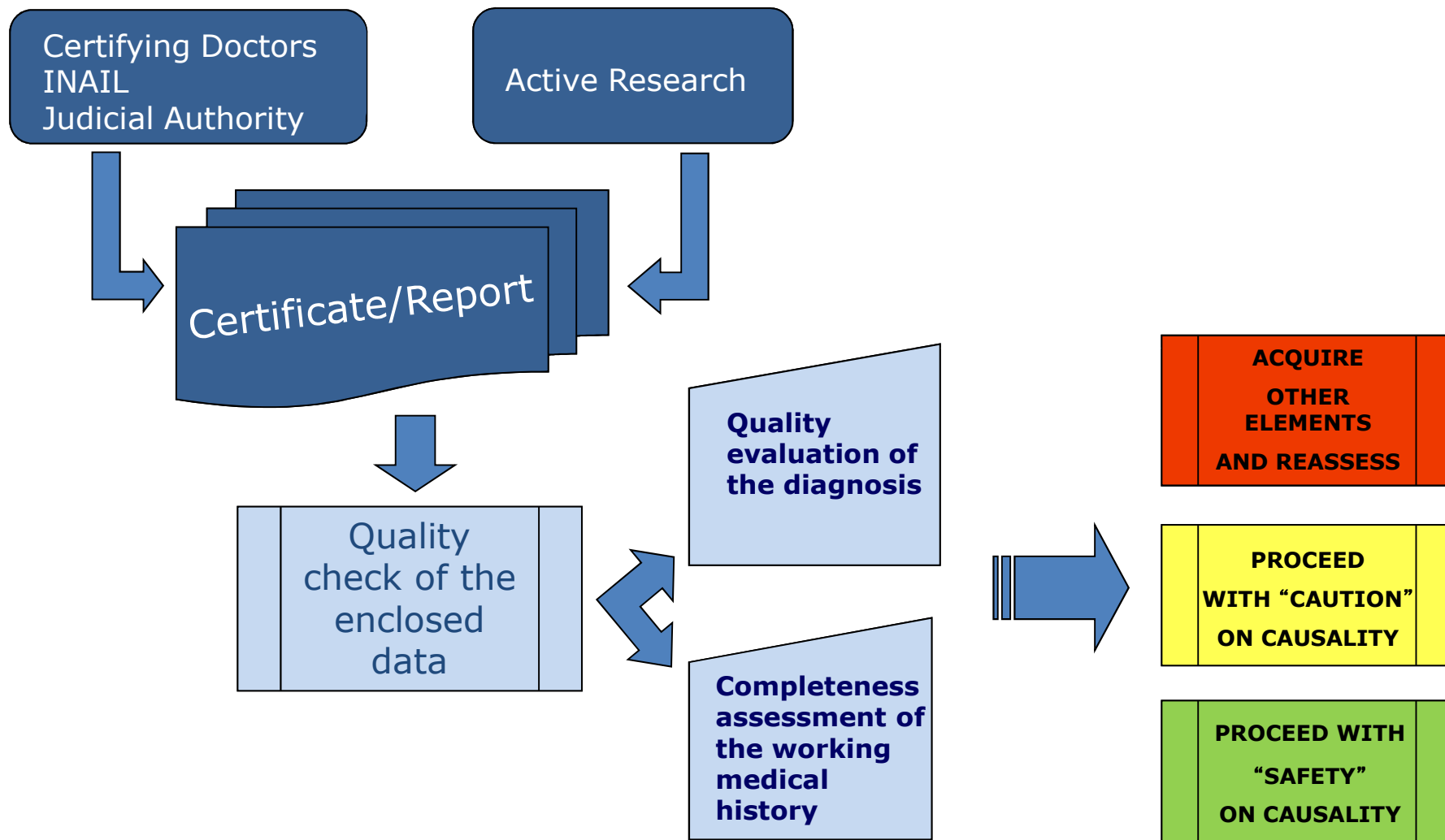


## Characteristics of the MALPROF model

Evaluation standards for the professional illness reports in order to favour uniformity in the attribution of causality by the medical doctors of the Prevention Services

The archive data report pathologies according to the economic sector and the profession in which the exposure occurred

# The MALPROF model for the attribution of causality



## Positive causalities\* for the main illnesses, 2009-2010

Aosta Valley, Lombardy, Friuli-Venezia-Giulia, Liguria<sup>°</sup>, Emilia Romagna, Marche, Tuscany, Lazio<sup>°</sup>, Umbria<sup>°</sup>, Campania<sup>°</sup>, Puglia, Sicily

Illnesses	N	%
Deafness by noise	7348	35,51
Musculoskeletal diseases (excluding rachis and CTS)	3970	19,19
Rachis diseases	3452	16,68
Carpal Tunnel Syndrome	2172	10,50
Malignant tumors pleura and peritoneum	736	3,56
Skin diseases	487	2,35
Other diseases of the apparatus respiratorius	421	2,03
Malignant tumors apparatus respiratorius	372	1,80
Asbestosis	351	1,70
Ear disorders (excluding deafness)	197	0,95
Other diseases	1187	5,74
<b>Total</b>	<b>20693</b>	<b>100,00</b>

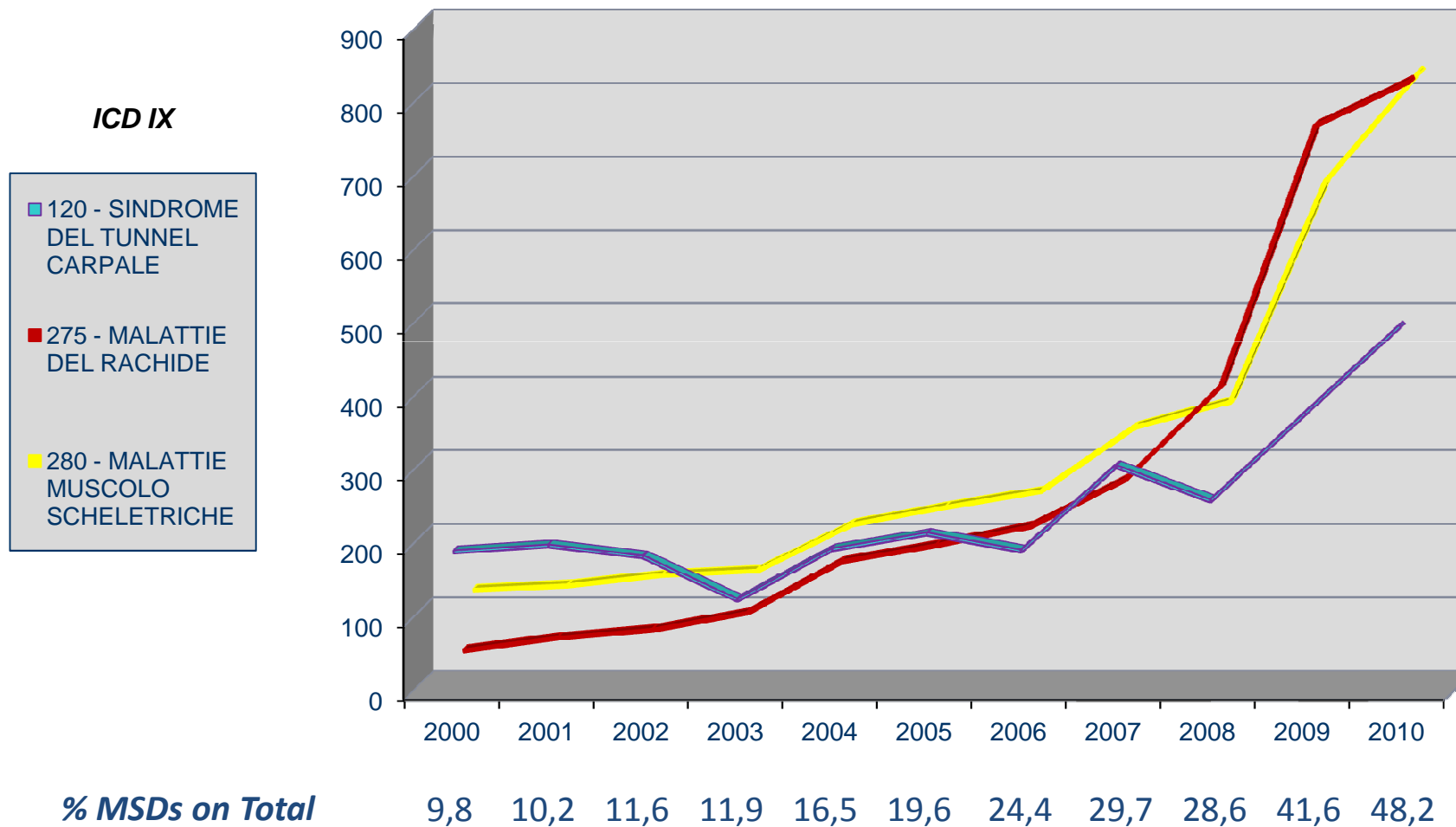
46 % MSDs

7 % Tumors

\* Highly probable or probable causalities

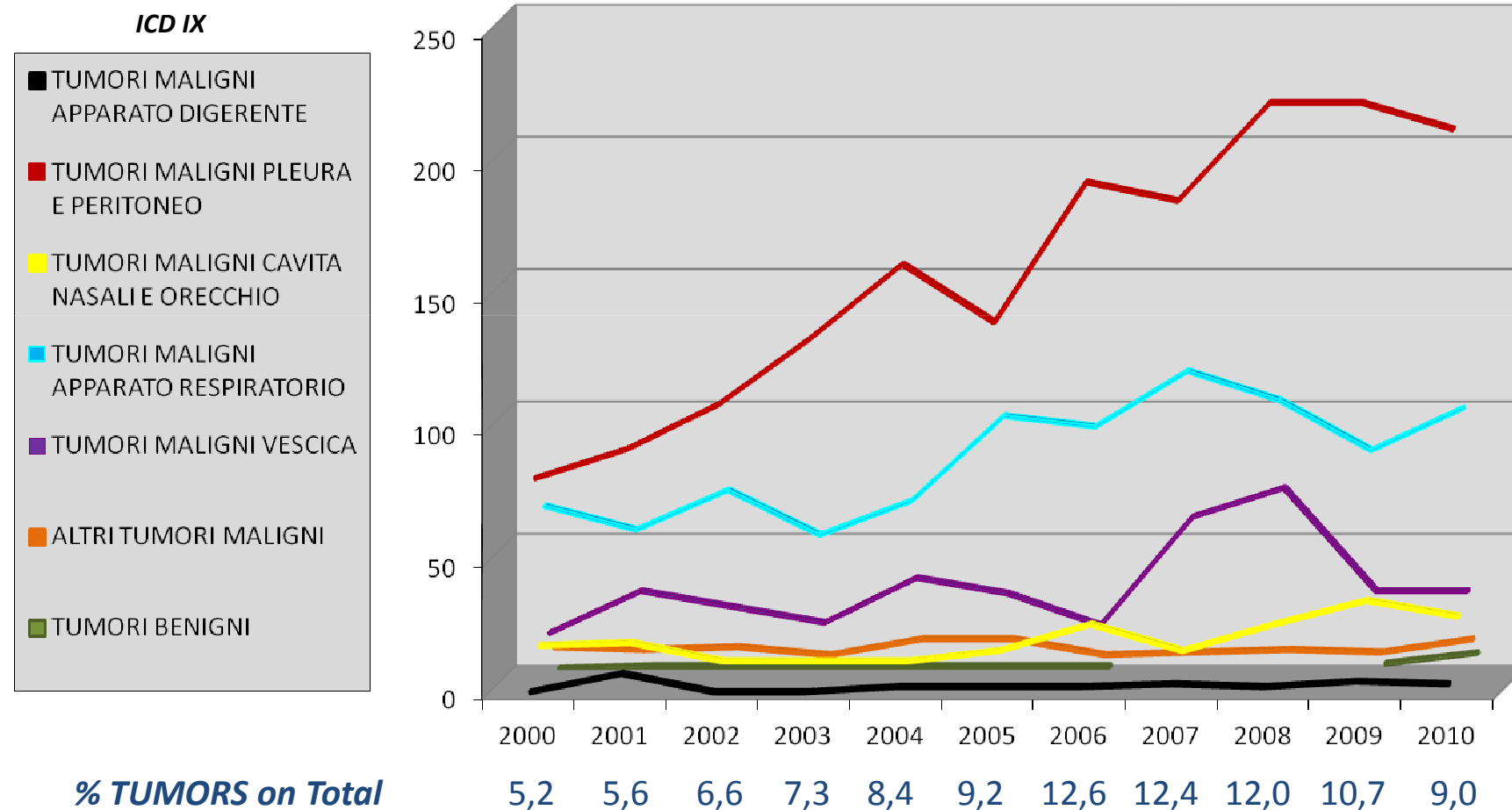
<sup>°</sup> Regions with partial coverage

**Positive causalities for MSDs since 2000 to 2010  
Lombardy e Tuscany, absolute values and % MSDs on Total**





## Positive causalities for Tumors since 2000 to 2010 Lombardy e Tuscany, absolute values and % Tumors on Total



## Positive causalities for malignant tumors PLEURA and PERITONEUM 2000-2010, Lombardia and Toscana, absolute values and %

Economic Activity	N	%
45 - Costruzioni	426	14,01
17 - Industrie tessili	202	6,65
28 - Fabbricazione e lavorazione dei prodotti in metallo, escluse macchine e impianti	177	5,82
27 - Produzione di metalli e loro leghe	168	5,53
35 - Fabbricazione di altri mezzi di trasporto	161	5,3
29 - Fabbricazione di macchine ed apparecchi meccanici, compresi l'installazione	138	4,54
26 - Fabbricazione di prodotti della lavorazione di minerali non metalliferi	94	3,09
24 - Fabbricazione di prodotti chimici e di fibre sintetiche e artificiali	83	2,73
Altri settori di attività economica	761	25,03
Non definito	830	27,30
<b>Totale</b>	<b>3040</b>	<b>100</b>

### Prevalent profession

- Artisans and specialized operatives
- Personnel to machinery
- Founders and welders
- Founders and welders
- Specializes metalworkers



A subject may have spent time working in various sectors considered causal of his diseases

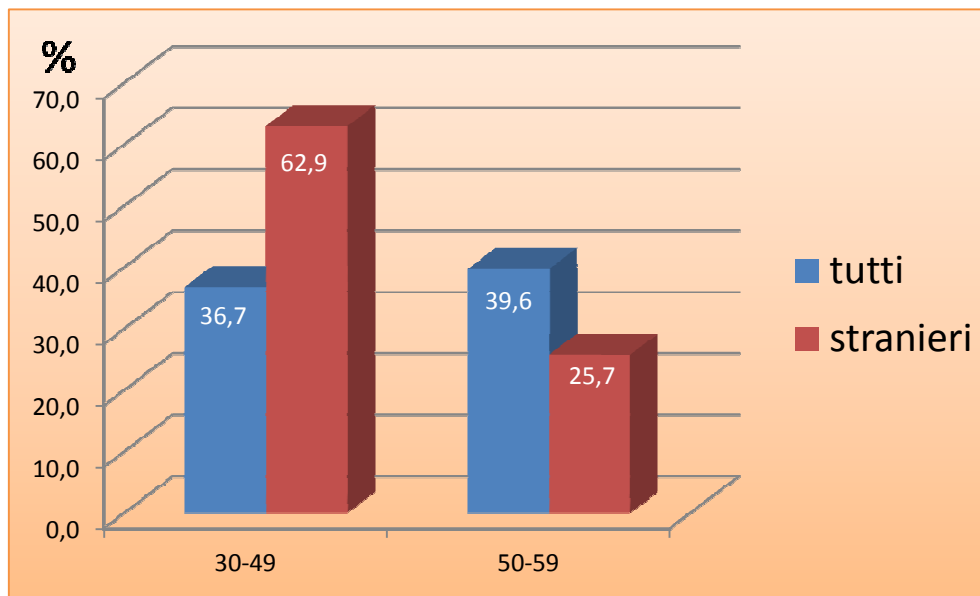
## FOREIGN WORKERS

### Distribution by sex and age, 2009-2010

Reports of occupational diseases for foreign workers are 1.836, equal **to 6,8% of all reports** received in that period

The percentage of women among foreign workers is **of 14,4%** and the total number of reports there is a share of 23,4%.

**Age classes prevailing:  
30-49 e 50-59**



## FOREIGN WORKERS: Positive causalities for the main diseases, 2009-2010

Aosta Valley, Lombardy, Friuli-Venezia-Giulia, Liguria°, Emilia Romagna, Marche, Tuscany, Lazio°, Umbria°, Campania°, Puglia, Sicily

Diseases	N	%	
Deafness by noise	699	49,4	
Rachis diseases	300	21,2	<b>41,8 % MSDs</b>
Musculoskeletal diseases (excluding rachis and CTS)	177	12,5	
Carpal Tunnel Syndrome	115	8,1	
Skin diseases	53	3,7	
Asthma	16	1,1	
Malignant tumors pleura and peritoneum	9	0,6	<b>1,2 % Tumors</b>
Psychological illnesses	4	0,3	
Malignant tumors apparatus respiratorius	5	0,4	
Other diseases of the apparatus respiratorius	4	0,3	
Other diseases	32	2,3	
<b>TOTALE</b>	<b>1414</b>	<b>100,0</b>	

## MALPROF: operativity of the System

### National coordination group

composed of Regional representatives and INAIL

- To agree on the implementation phases of the project
- To define uniform criteria for evaluating the quality of diagnosis and anamnesis working
- To establish contents and methods of training



### Training for the operators of Prevention Services

Classroom lesson ECM for 15 hours during two days

In 3 years: 7 National editions ECM: over 180 participants

9 Regional editions (5 ECM): over 250 participants

Courses in FAD way: for Asl operators (4 edit.) and for competent Physicians (2 edit.)

# MALPROF: dissemination of informations

Biennial reports

Web Portal divided into 6 thematic areas

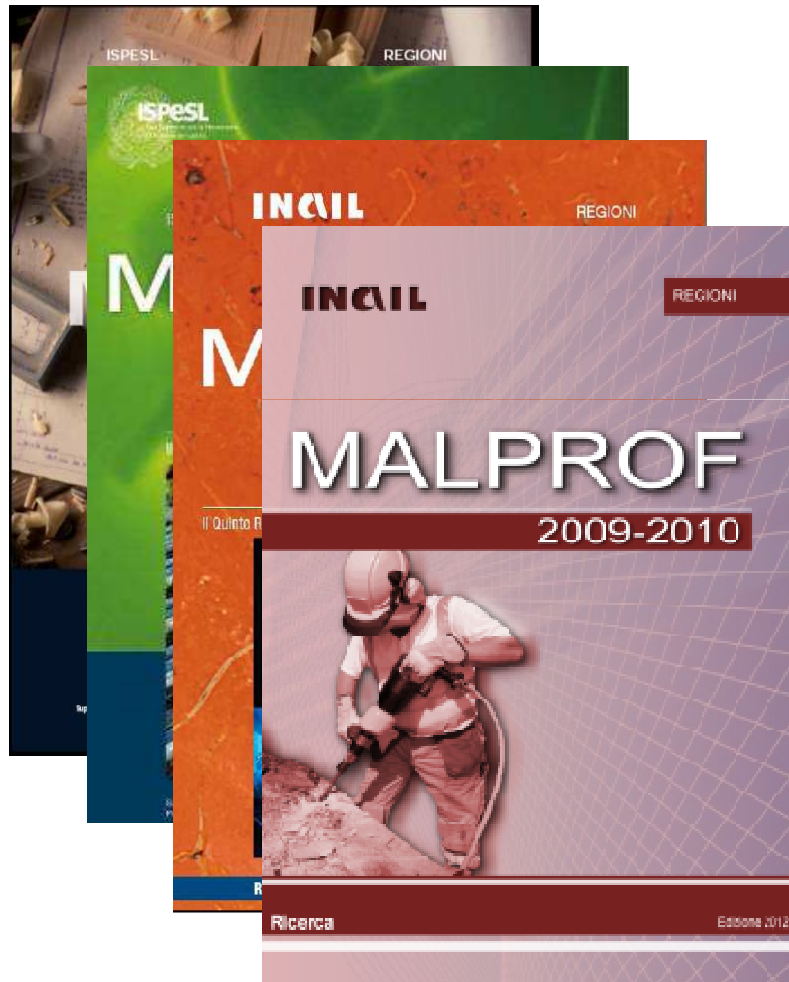


Tabella 7 - Liguria (ASL Genovese) - Anno 2008  
Distribuzione per patologia dei casi segnalati e dei casi con nesso causale positivo

Classe della patologia	Casi segnalati		Casi con nesso causale positivo		Rapporto tra positivi e totale segnalati
	N	%	N	%	
TUMORI MALIGNI APPARATO DIGERENTE	2	0,6	-	-	-
TUMORI MALIGNI PLEURA E PERITONEO	43	12,8	28	13,5	65,1
TUMORI MALIGNI APPARATO RESPIRATORIO	18	5,3	10	4,8	55,6
TUMORI MALIGNI VESCICA	4	1,2	3	1,4	75,0
ALTRI TUMORI MALIGNI	4	1,2	1	0,5	25,0
TUMORI BENIGNI	1	0,3	1	0,5	100,0
SINDROME TUNNEL CARPALE	14	4,2	6	2,9	42,9
SORDITA' DA RUMORE	106	31,5	81	39,1	76,4
MALATTIE POLMONARI CRONICHE OSTRUTTIVE	1	0,3	1	0,5	100,0

## Active Research

### AIMS

- To increase the level of reporting of cases of occupational diseases which, otherwise, would not be reported properly
- To identify occupational categories and sector as well as place of work at greater risk for the development of new diseases



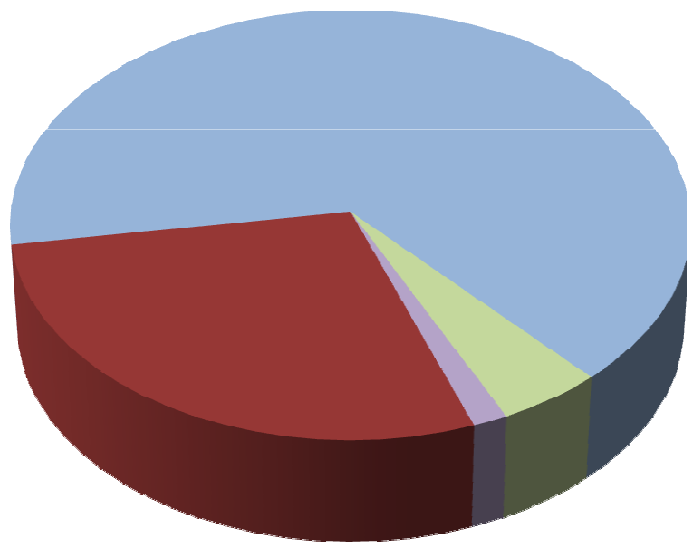
### POSSIBLE ACTIONS

- To consolidate cooperation with competent Physician
- To raise awareness among Physician and wards in the reporting of suspected of occupational diseases
- To strengthen the exchange of information between ASL Services and INAIL
- To operate targeted linkage archives available for employees and diseases recorded on SDO, ...

# MALPROF: OSH monitoring

## Asl Genova (Local Health Board), positive causalities for tumors 2009-2010

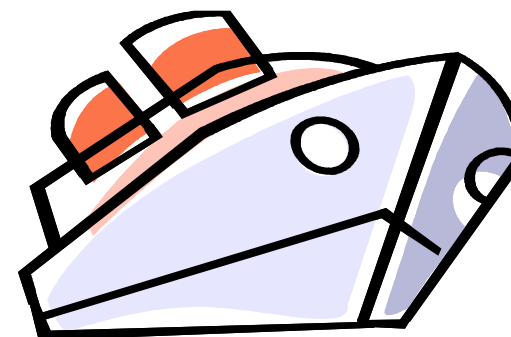
In the Genova Asl tumors represent 22% of occupational diseases



- Tumori maligni apparato respiratorio
- Tumori maligni pleura e peritoneo
- Tumori maligni vescica
- Altri tumori maligni

### First sectors for exposure to disease (%)

First sectors for exposure to disease	(%)
35 - FABBRICAZIONE DI ALTRI MEZZI DI TRASPORTO (industria cantieristica, ...)	19,5
63 - ATTIVITA' DI SUPPORTO ED AUSILIARIE DEI TRASPORTI (movimentazione merci, ...)	7,3

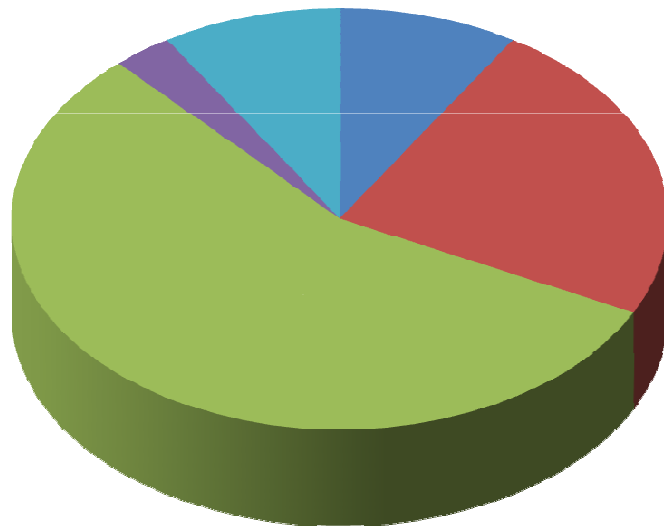




# MALPROF: OSH monitoring

## Asl Taranto (Local Health Board), positive causalities for tumors 2009-2010

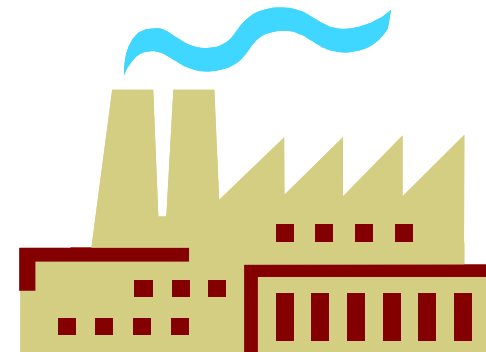
In the Taranto Asl tumors represent 22% of occupational diseases



- Tumori maligni apparato digerente
- Tumori maligni pleura e peritoneo
- Tumori maligni apparato respiratorio
- Tumori maligni vescica
- Altri tumori maligni

First sectors for exposure to disease (%)

27.1 PRODUZIONE DI FERRO, DI ACCIAIO E DI FERROLEGHE	50,0
--	------



## An estimate of the association between Pleura Tumors and Economic Activity

Decreasing order of the first values of odds ratio, 2009-2010

	<b>Economic Activity</b>	<b>Odds ratio</b>	<b>lower limit</b>	<b>upper limit</b>
	24.7 Fabbricazione di fibre sintetiche e artificiali	<b>16,32</b>	5,80	45,94
	17.2 Tessitura di materie tessili	<b>13,78</b>	8,50	22,34
*	21.0 - Fabbricazione della pasta-carta, della carta e dei prodotti di carta non definita in dettaglio	<b>12,21</b>	3,05	48,88
	17.4 Confezionamento di articoli in tessuto, esclusi gli articoli di vestiario	<b>11,12</b>	3,86	32,05
	28.2 Fabbricazione di cisterne, serbatoi e contenitori in metallo; fabbricazione di radiatori e caldaie	<b>9,77</b>	5,55	17,18
	17.7 Fabbricazione di articoli in maglieria	<b>8,14</b>	2,62	25,29
	60.1 Trasporti ferroviari	<b>7,54</b>	4,76	11,96
*	75.2 Servizi della pubblica amministrazione forniti alla intera collettività	<b>7,45</b>	4,24	13,07
*	22.2 Stampa e attività dei servizi connessi alla stampa	<b>6,66</b>	1,85	23,90
	34.1 Fabbricazione di autoveicoli	<b>6,49</b>	3,11	13,57
	35.1 Industria cantieristica: costruzioni navali e riparazioni di navi e imbarcazioni	<b>5,51</b>	3,97	7,65
	61.1 Trasporti marittimi e costieri	<b>5,19</b>	2,29	11,77
*	24.4 Fabbricazione di prodotti farmaceutici e di prodotti chimici e botanici per usi medicinali	<b>5,14</b>	1,75	15,14

The complete list of odds ratio with "significant" associations largely reflects the workmanships tabulated by IARC for tumors of the pleura and peritoneum

Association between Tumors of the nasal cavity and Economic Activity  
Decreasing order of the first values of odds ratio, 2009-2010

Economic Activity	Odds ratio	lower limit	upper limit
19.3 Fabbricazione di calzature	<b>26,32</b>	17,35	39,94
19.1 Preparazione e concia del cuoio	<b>24,97</b>	11,78	52,92
20.3 Fabbricazione di elementi carpenteria in legno e falegnameria per l'edilizia	<b>22,24</b>	10,03	49,30
20.5 Fabbricazione di altri prodotti in legno, sughero e paglia	<b>15,61</b>	6,20	39,31
36.1 Fabbricazione di mobili	<b>12,92</b>	7,31	22,84
20.1 Taglio, piallatura e trattamento del legno	<b>11,33</b>	3,50	36,61

*For tumors with high etiological fraction is found the concentration of associations "significant" only in the fields of Wood-Furniture and Leather-Footwear*

### Positive causalities for cervical hernia 2009-2010

Economic Activity	N	%
60.2 Altri trasporti terrestri	7	9,2
85.1 Attivita' dei servizi sanitari	6	7,9
45.0 - Costruzioni non definita in dettaglio	4	5,3
19.3 Fabbricazione di calzature	3	3,9
93.0 Altre attivita' dei servizi	3	3,9
74.7 Servizi di pulizia e disinfestazione	3	3,9
45.2 Costruzione di edifici; genio civile	3	3,9
25.2 Fabbricaz. articoli in materie plastiche	2	2,6
63.2 Altre attivita' connesse ai trasporti	2	2,6
75.1 Amministrazione pubblica	2	2,6
17.1 Preparazione e filatura di fibre tessili	2	2,6
85.0 - Sanita' e altri servizi sociali	2	2,6
Altre attività economiche	37	48,7
<b>Totale</b>	<b>76</b>	<b>100,0</b>

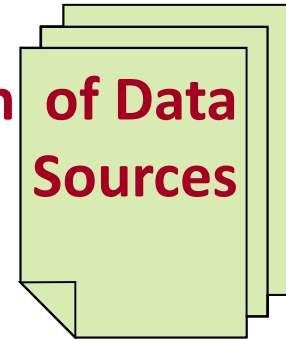
Diseases	reported cases	% Positive causalities
Cervical hernia	107	53,3
Dupuytren's disease	25	76,0

The cervical hernia does not appear in the three lists of the diseases likely or possible occupational origin reported in the Legislative Decree 14 Jan 2008, for which there exists an obligation to report. Dupuytren's disease is classified only as a disease of possible occupational origin (list III)

**Legislative Decree 81/2008**



**Integration of Data Sources**



Art. 8 ... SINP (National Information System for the Prevention) established in order to provide **useful data for orienting, planning, assessing the effectiveness of preventive actions**

Art. 29 ... Standardized procedures for risk assessment of SME (Small and Medium Enterprises)

Art.6 ... developed taking into account the **risk profiles and accident rates in the sectors of economic activity**



**Surveillance systems of Fatal Accidents and MALPROF**



**Data base INAIL on compensated accidents**