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Barbara Pastuszek**

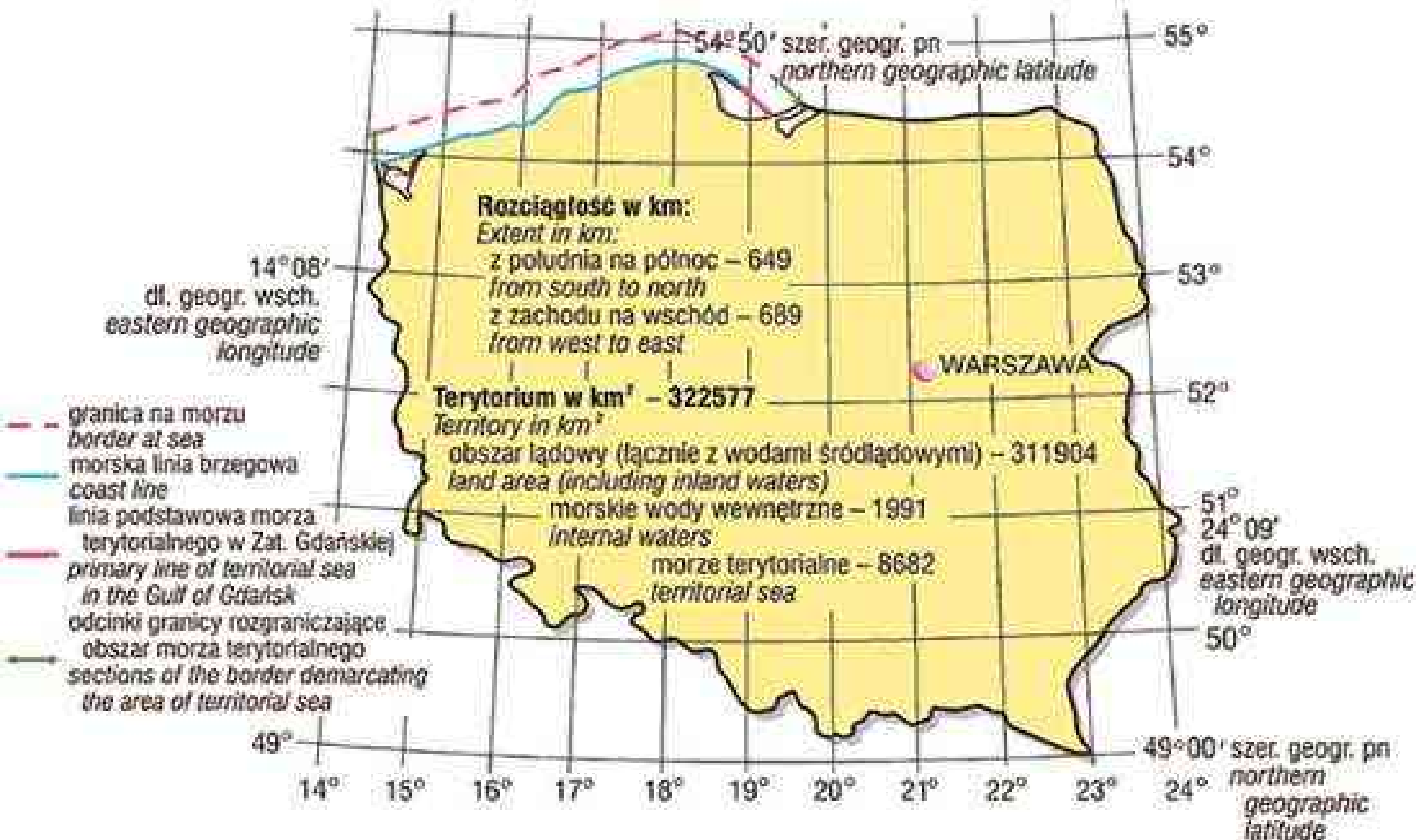
**The Pb Level in Blood [PbB] in Children
in Copper Basin, Poland – Thirty Years
of Observation**

from

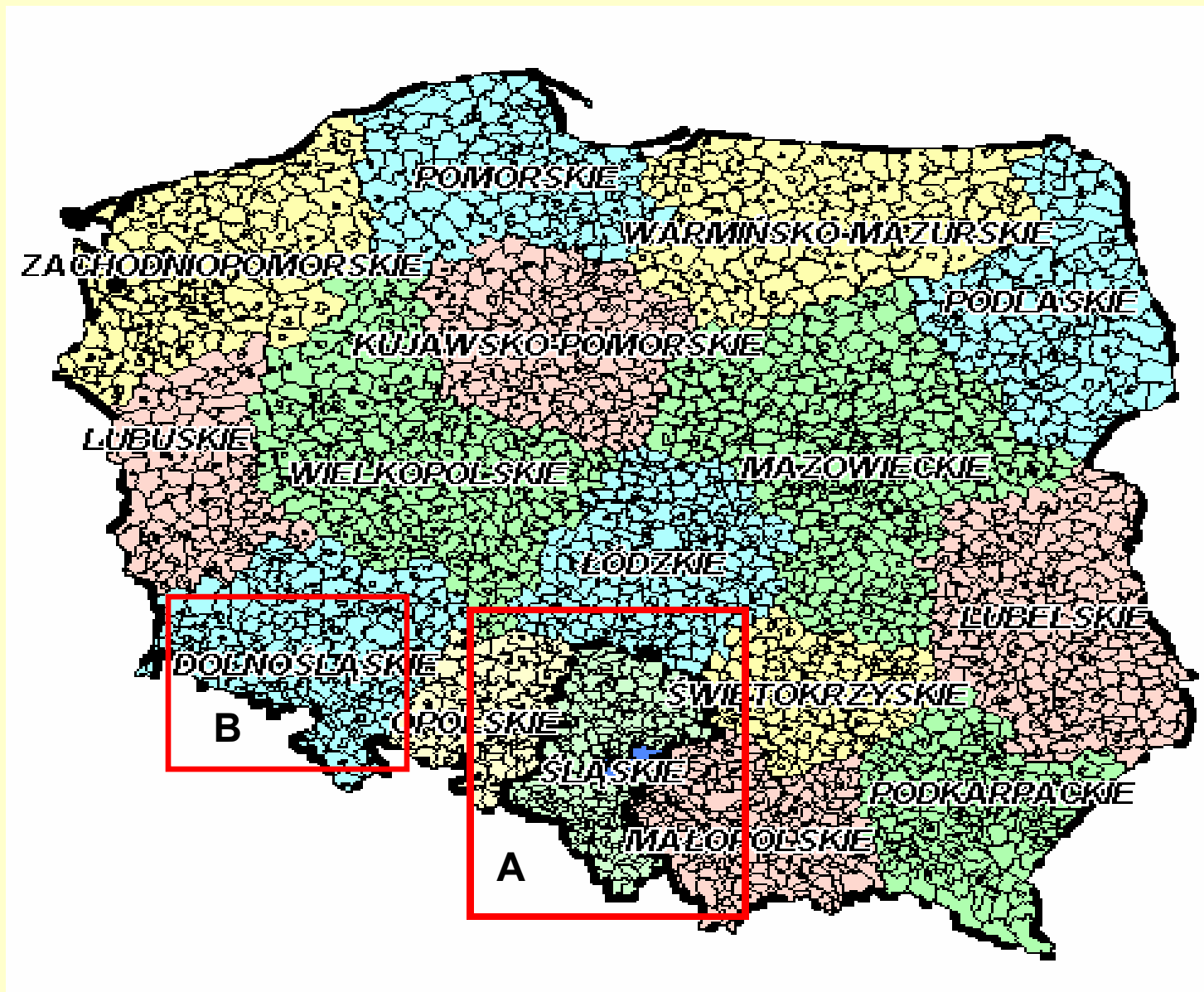
**Institute of Occupational Medicine and
Environmental Health, Sosnowiec, PI
and Foundation for Children of Copper
Basin, Legnica, PI**

POŁOŻENIE GEOGRAFICZNE POLSKI GEOGRAPHIC LOCATION OF POLAND

Skala 1 : 10 000 000



Regions with the main industrial sources of lead/Poland

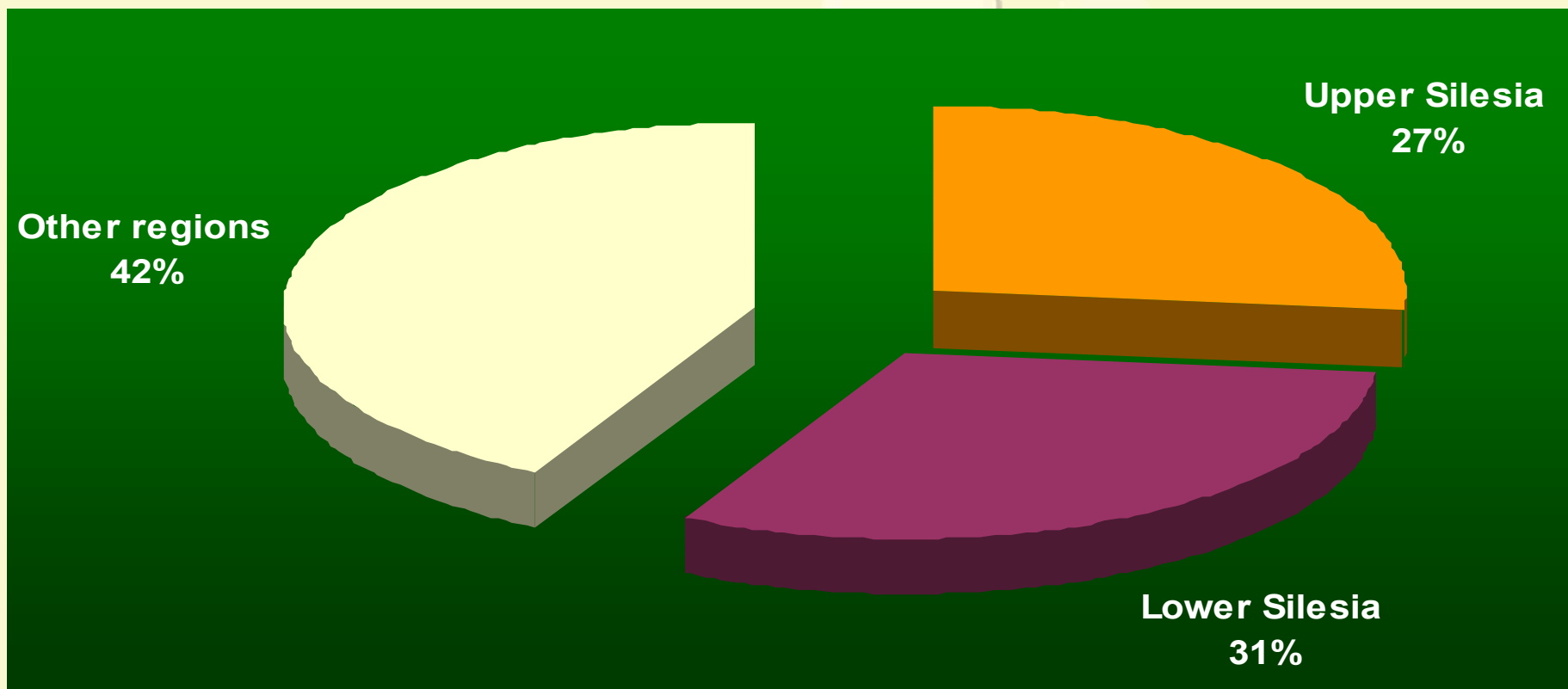


- A** Upper Silesia Province
- B** Legnica Province (currently within the Lower Silesia Province)

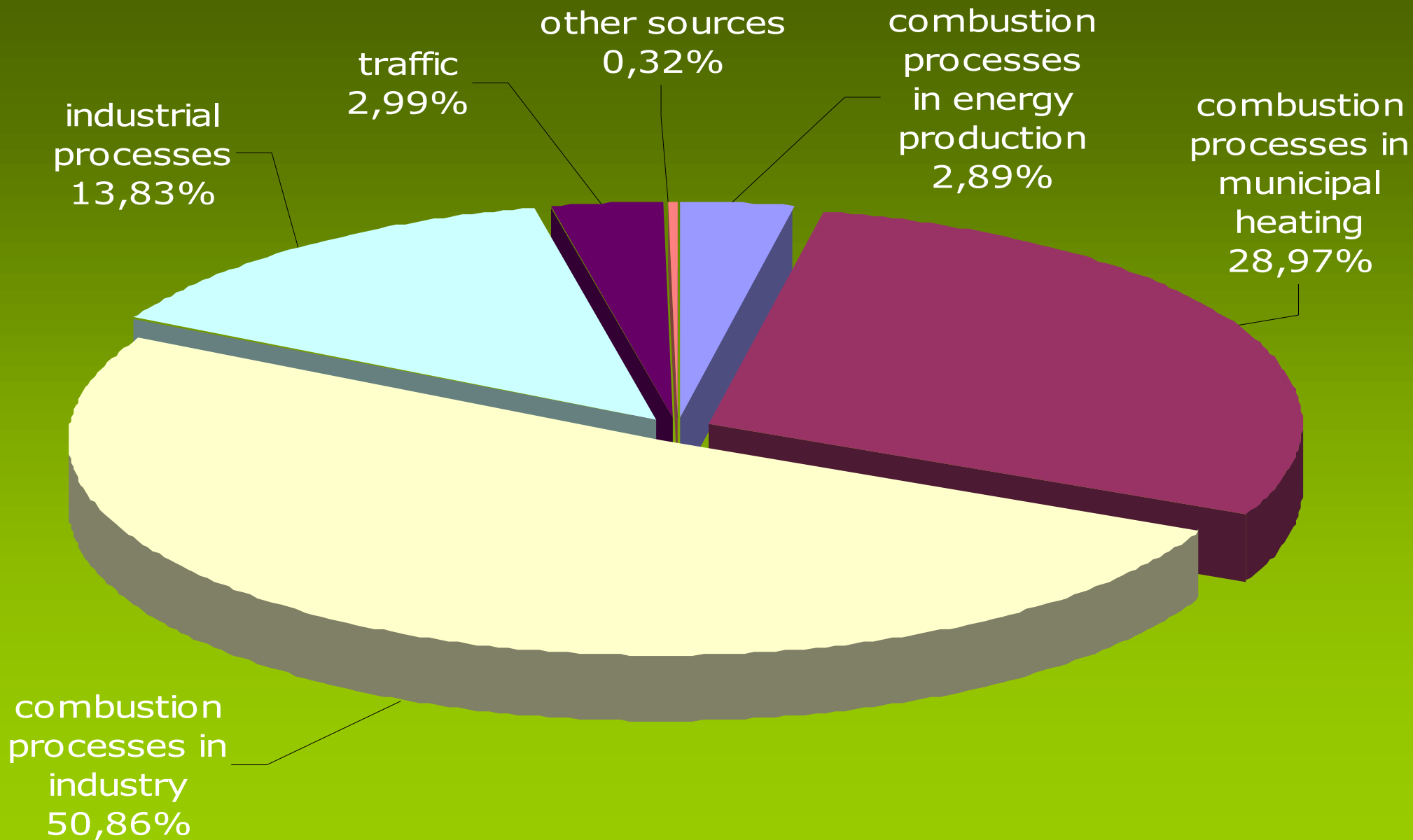
Total lead emission in Poland in 2003

**Total lead emission in Poland /2003/
Upper Silesia Region
Lower Silesia Region**

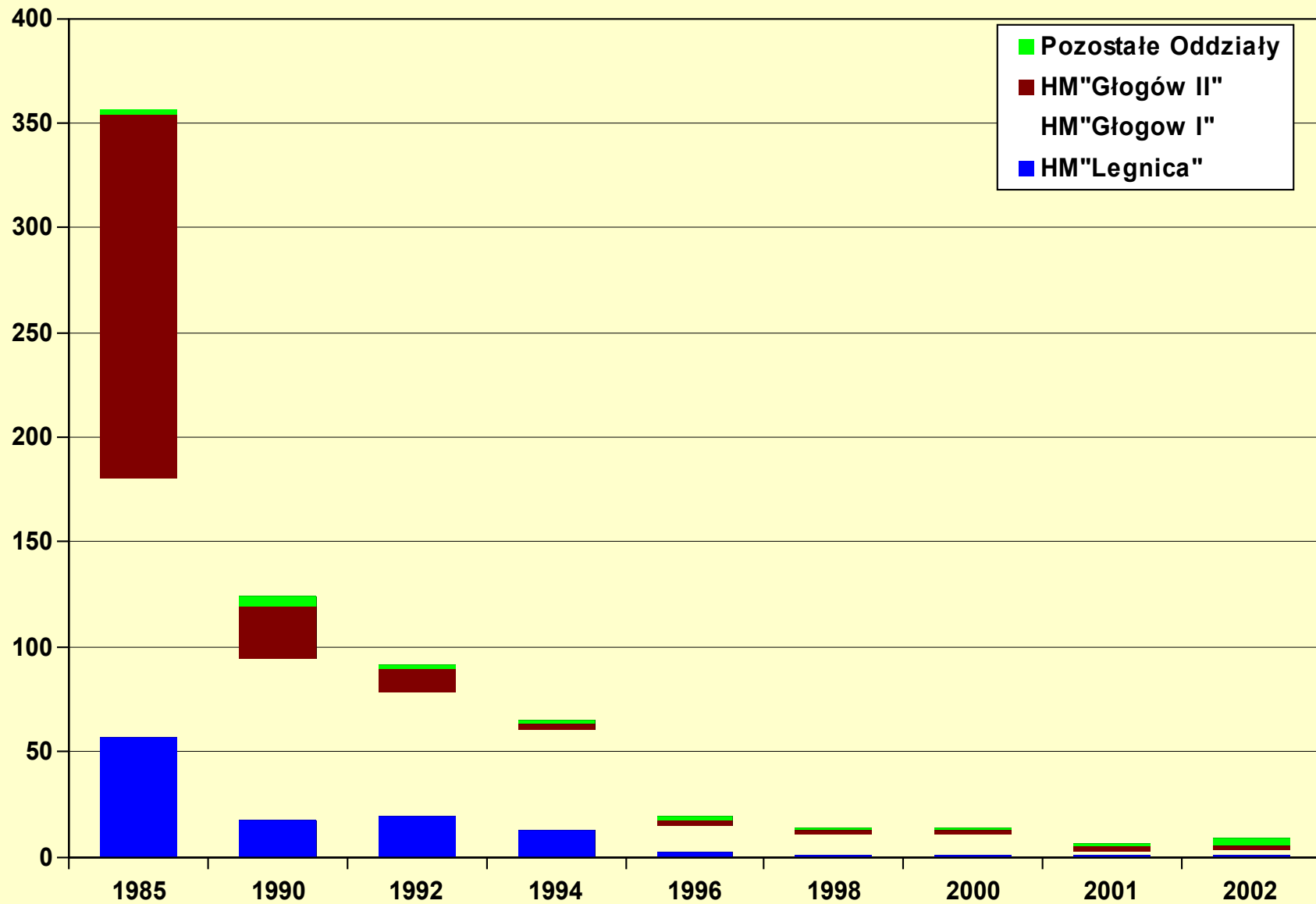
**- 596 052 kg/year
- 158 918 kg/year
- 185 686 kg/year**



Total lead emission from different sources in Poland . 2003



Pb air emission from copper smelters in Lower Silesia Region

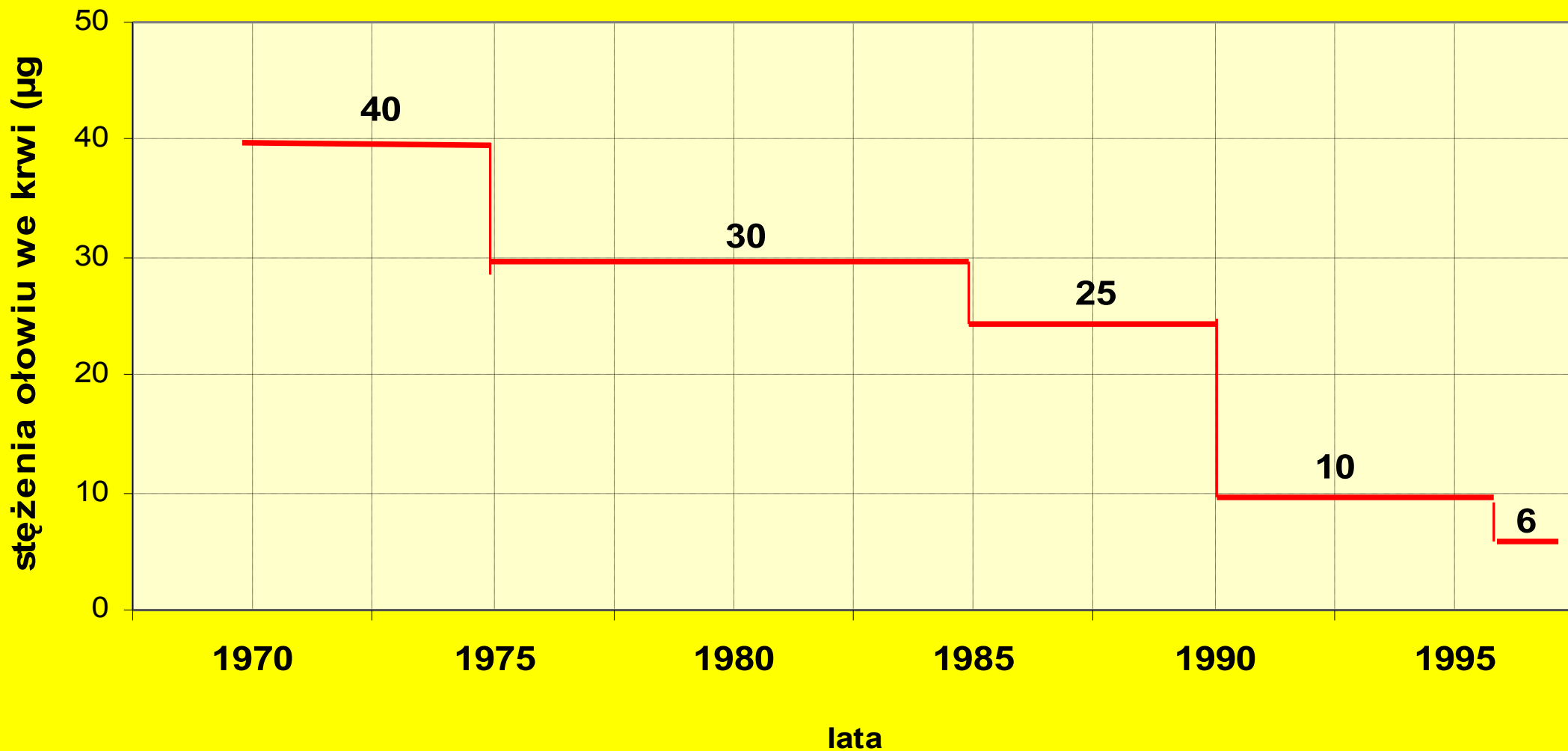


Emission from Copper Industry LGOM 1985–2005

Emission [T/year]	1985	1990	2000	2005	Reduction compared to 1985 year [%]
Dust	9 596	9211	915	601	93,4
Cu	315,6	204,0	23,2	23,6	92,5
Pb	356,2	124,3	13,8	5,3	98,5
SO₂	79006	48719	6202	5084	93,6
CO	192636	121499	2683	2552	98,7

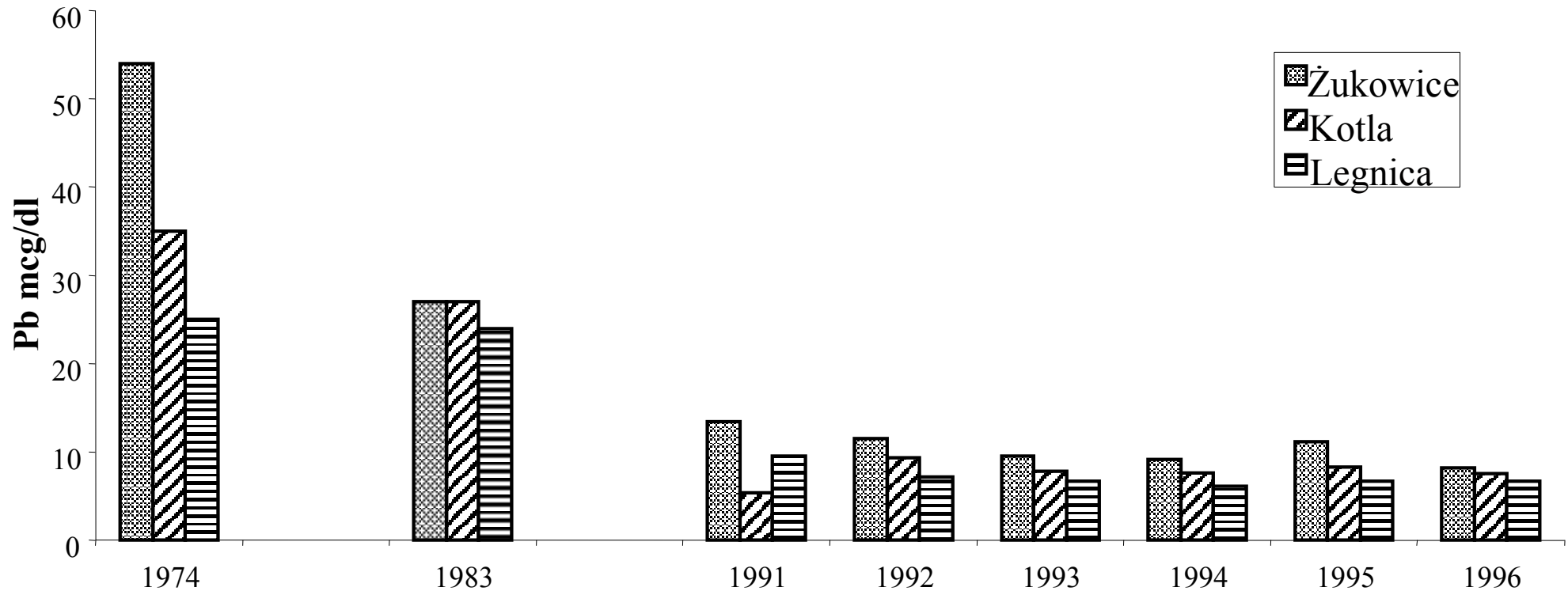
Stężenie ołowiu we krwi uznawane za podwyższone przez CDC na przestrzeni lat

Blood lead concentration level admitted by CDC over years



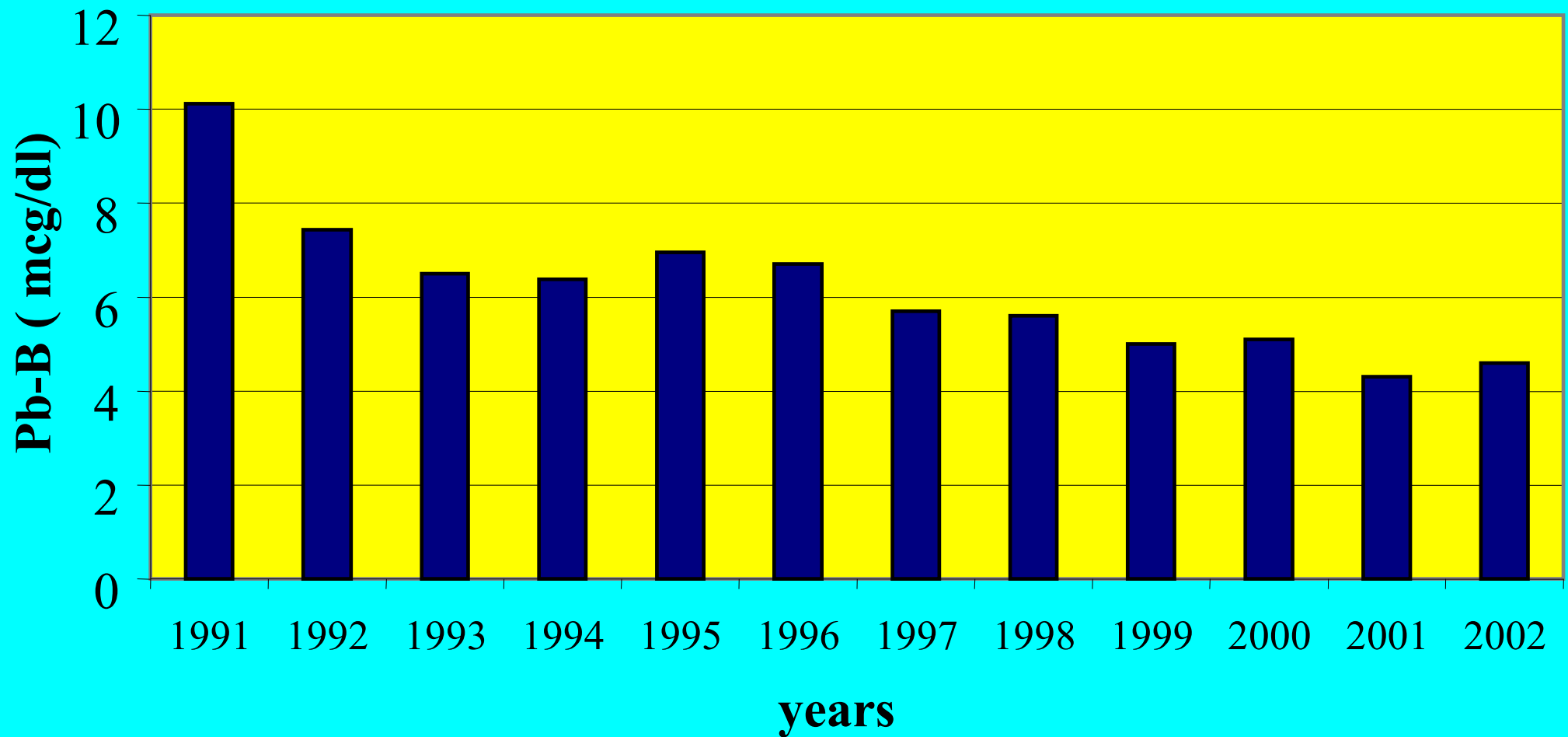
Średnie poziomy ołowiu we krwi dzieci z wybranych gmin woj. legnickiego w latach 1974-1996

The average Pb-B levels in children from selected communities of LGOM in years 1974-1996

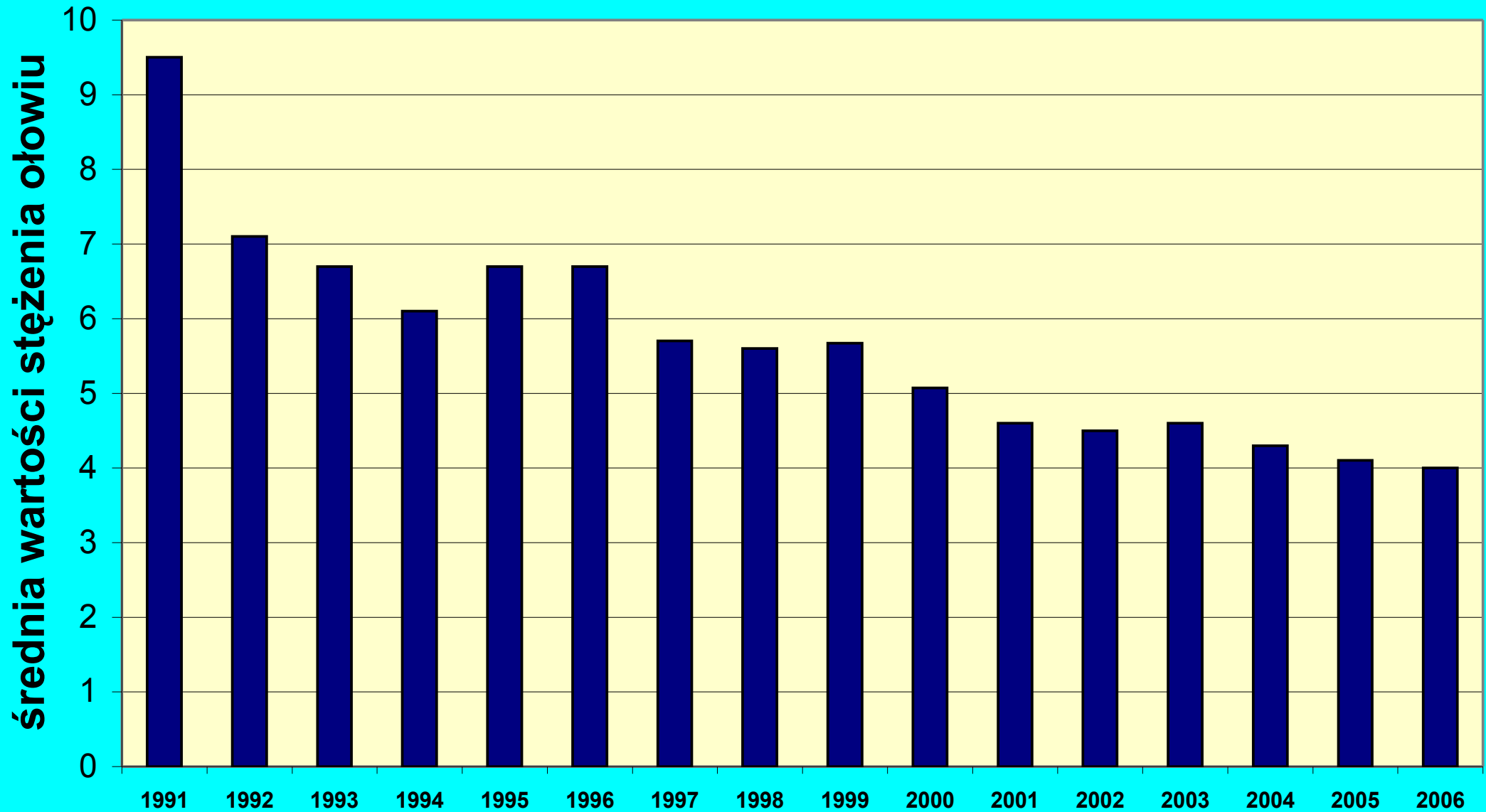


**Średnie stężenie ołowiu we krwi u dzieci szkolnych z LGOM-u
w latach 1991-2002**

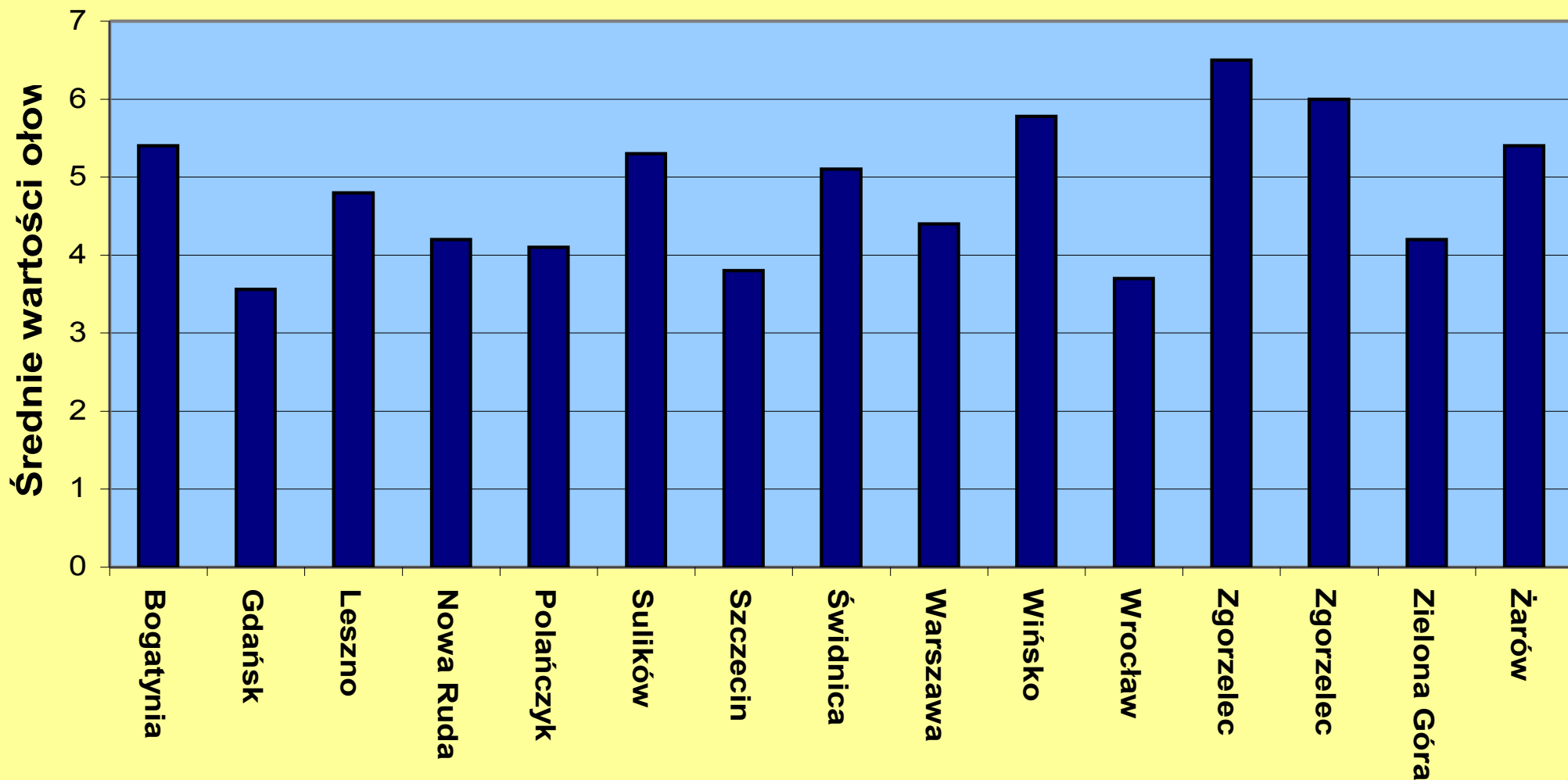
**Mean PbB levels (mcg/dl) in school children living in LGOM in the
period of 1991–2002**



Zestawienie wartości średnich stężeń ołowiu we krwi dzieci badanych w Legnicy w latach 1991-2006



Zestawienie wartości średnich stężeń ołowiu u dzieci w miejscowościach z poza LGOM
PbB concentration (average in mcg/dl) in children living in localities outside of copper industry

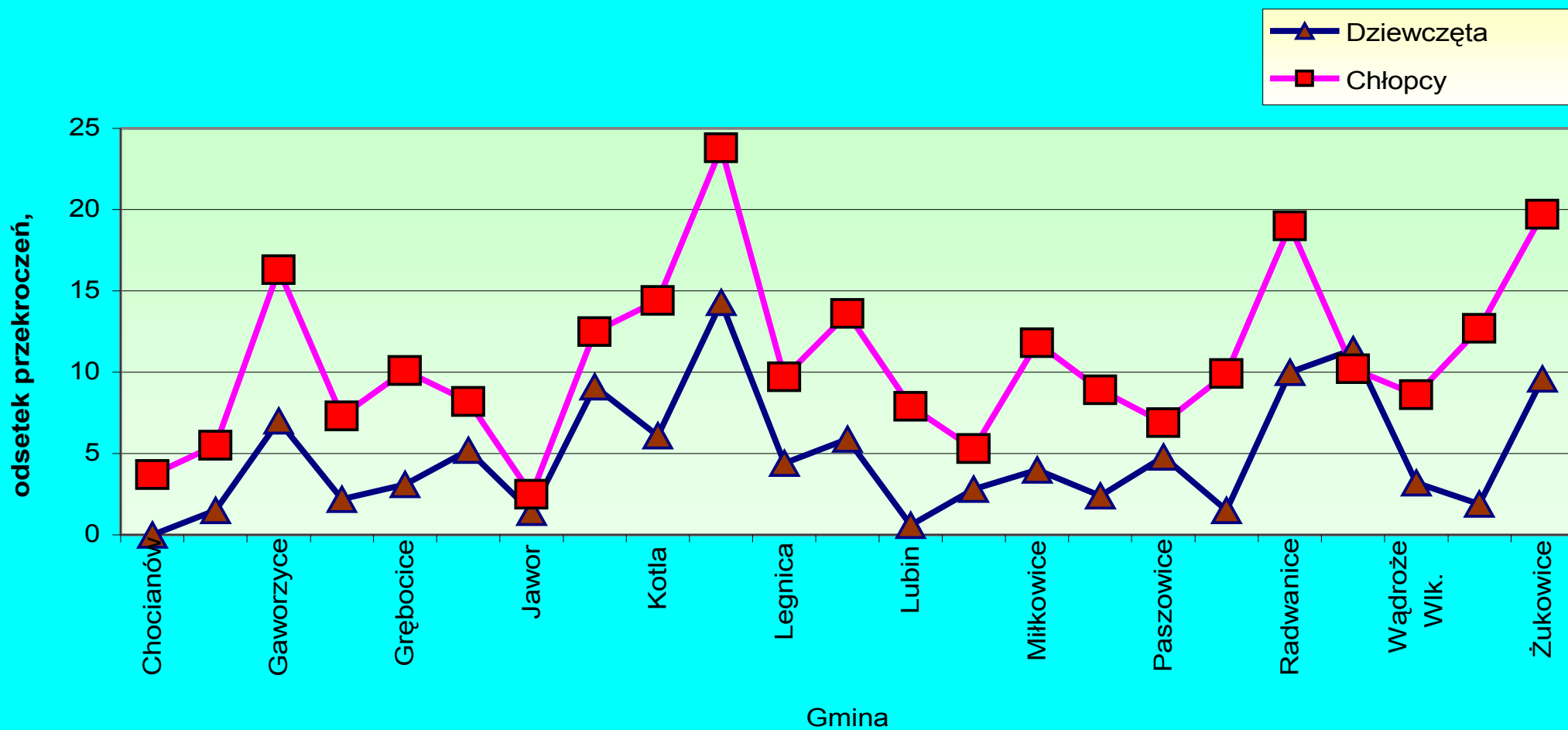


PbB ($\mu\text{g/dL}$) in children < 10 years old in Poland 1980-2002

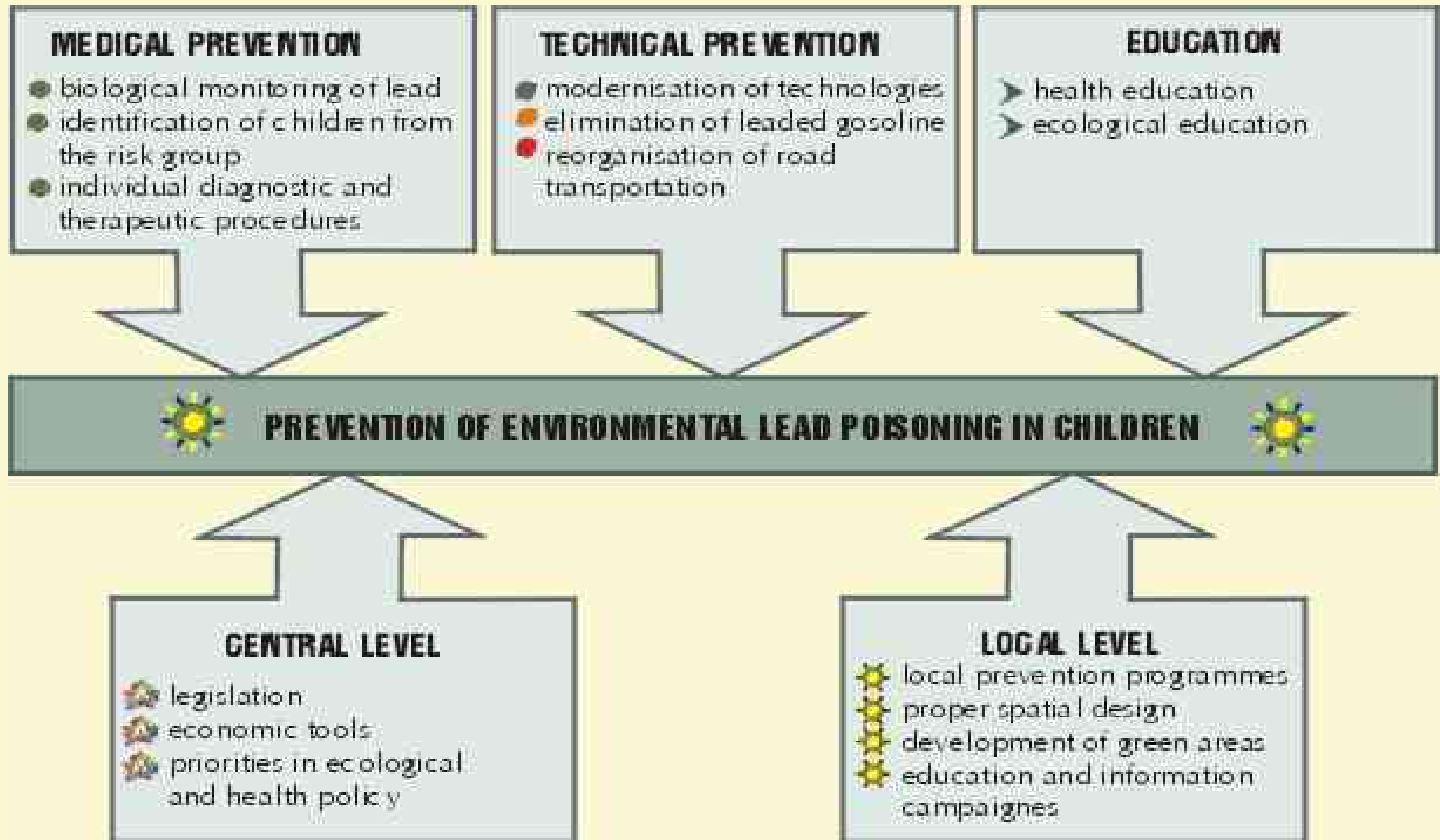
	X	% PbB > 10	author
Łódź – Centre	5,2	2	J. Jakubowski
Wałbrzych	4,5	–	
Kraków Nowa Huta	5,3	12	
Kraków Dębinki	2,9	–	
Miasteczko Śl.	11,4	54	
Głogów (5 km from smelter)	9,3	46	
Poland (1997 r.)	4,4	46	J. Zejda and all
LGOM (1996–2002)	6,7	4,6	H. Stawik and all
Legnica (2000)	5,0	4,2	

Porównanie procentu dzieci z przekroczoną dopuszczalną zawartością ołowiu we krwi > 6 mcg/dl w zależności od płci

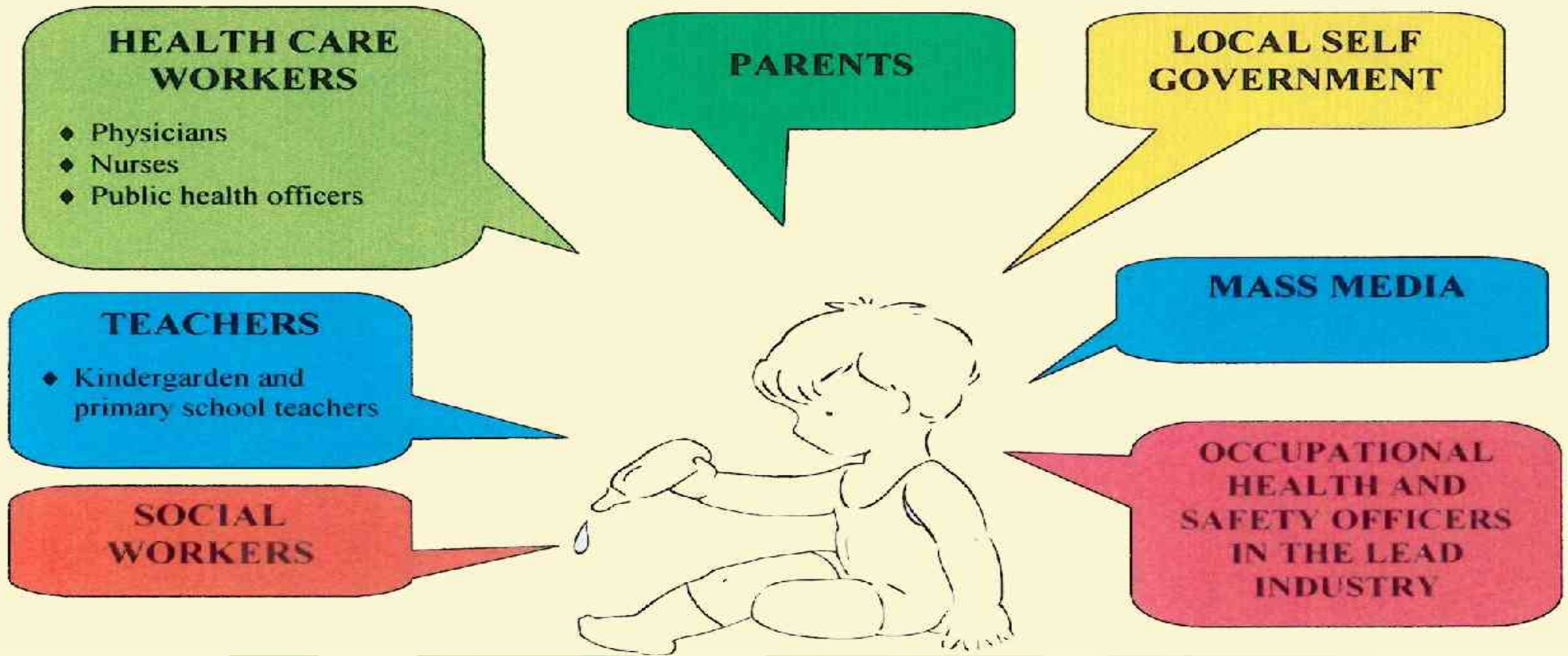
The comparison between the percentage of boys and girls with PbB level >6 mcg/dl living on copper region



Prevention of environmental lead poisoning - main areas of activities



Partners in activities aimed at prevention of environmental lead poisoning in children



Author: Department of Environmental Medicine, IOMEH

Designer: Ewa Gałkowska, IOMEH



- Author: Department of Environmental Medicine, IOMEH
- Designer: Ewa Gałkowska, IOMEH







Conclusions

- 1. During the last years we observed the decrease of BLLs in children living in the risk industrial area which has been achieved by:**
 - modernisation of heavy industry**
 - preventive activities [Green Schools, sanatorium] of NGO-s**

Conclusions

- 2. The problem of chronic lead intoxication or at least elevation of BLL in children in some industrial metallurgic area does still exist and has to be controlled by biomonitoring and free medical care.**

Conclusions

- 3. We improved both awareness of environmental risk factors among civil society including the schoolchildren, and the involvement of municipal bodies and local authorities as well.**

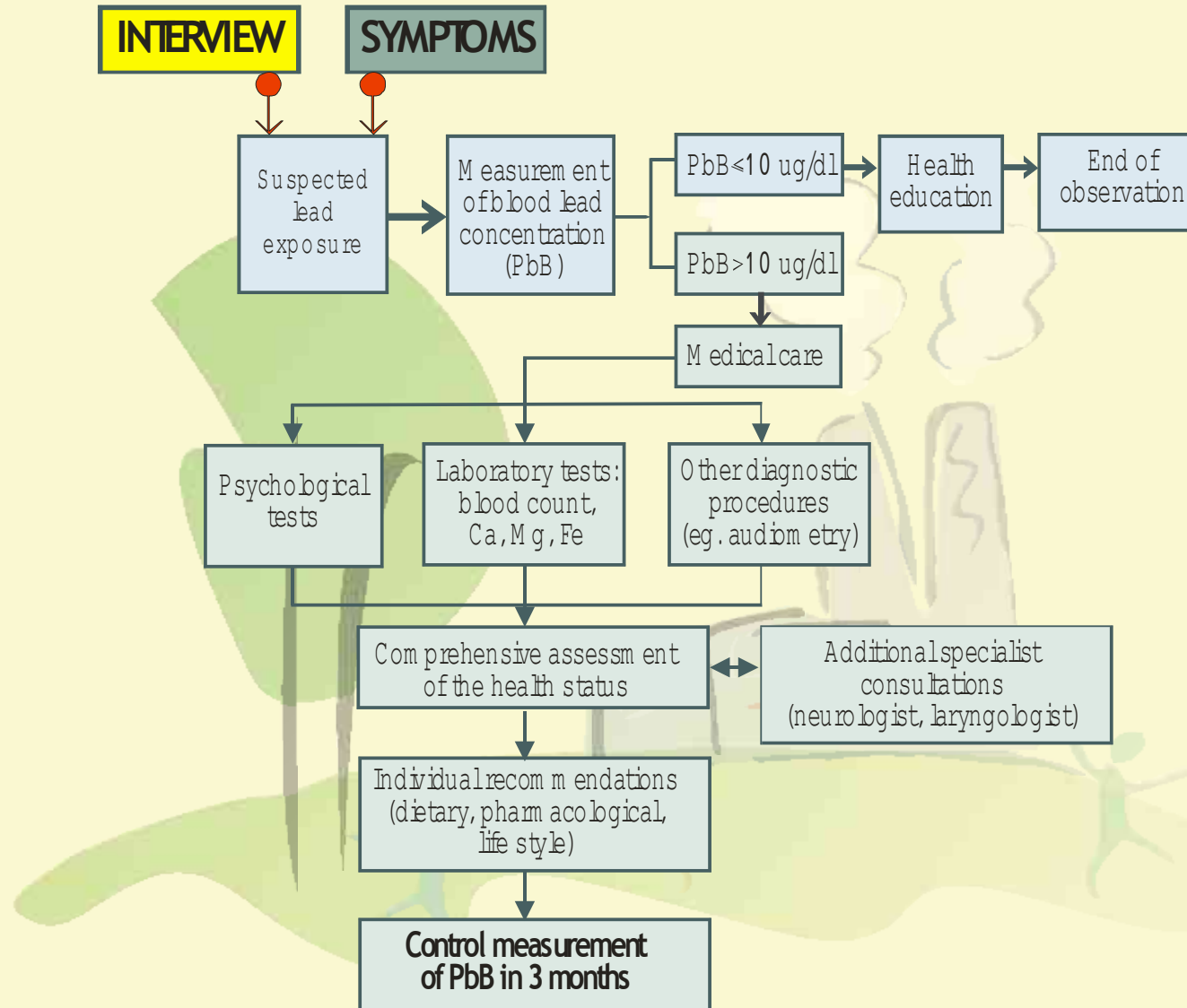
Conclusions

- 5. The collaboration with NGOs is very valuable in protecting human health particularly in childhood.**

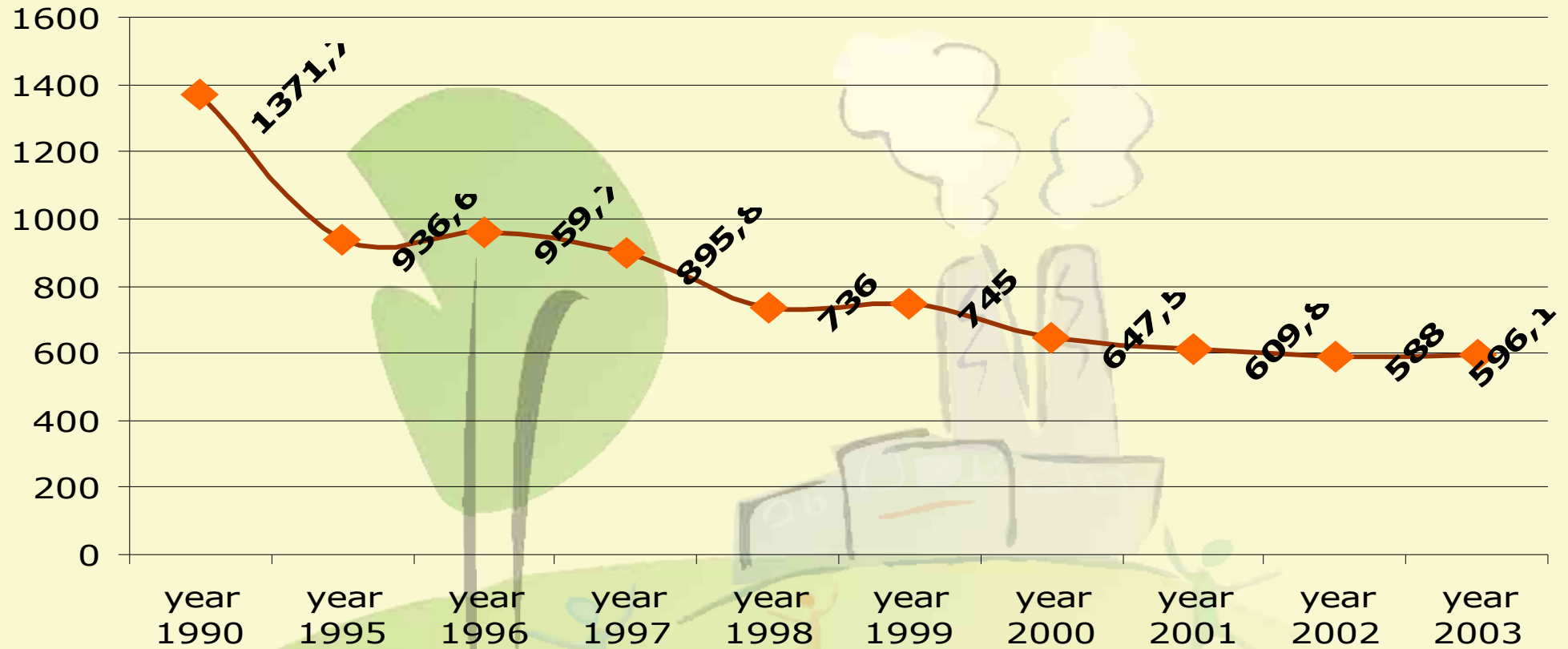
A group of five children of diverse backgrounds are holding hands in a circle on a grassy field. They are smiling and appear to be in a joyful, inclusive activity. The children are dressed in casual, colorful clothing. The background is a soft-focus landscape with green grass and a blue sky.

Thank you for your attention

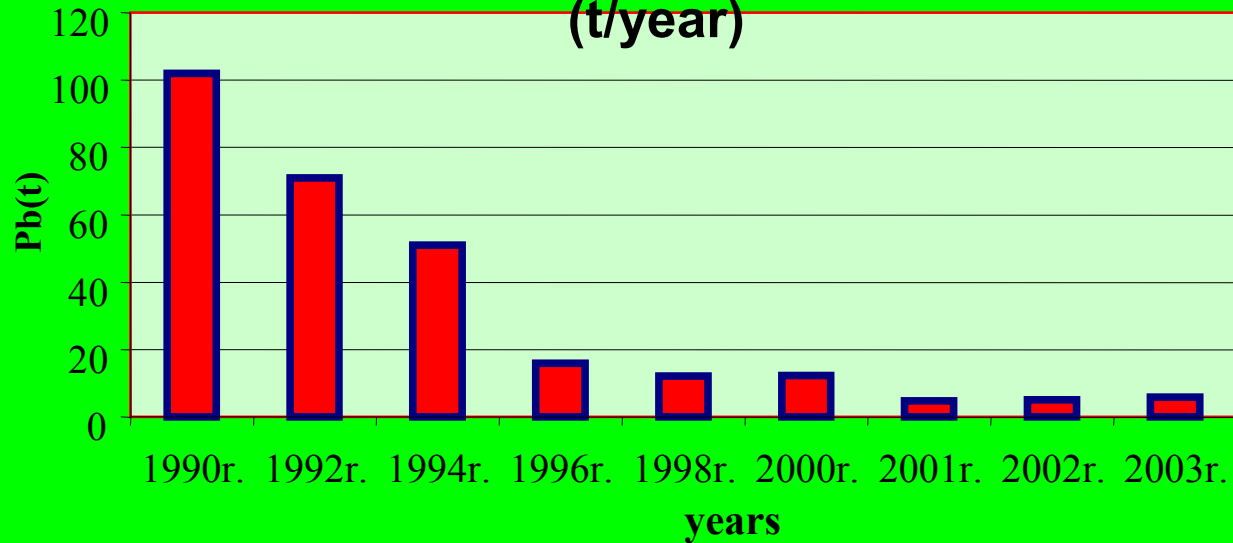
Individual diagnostic and therapeutic procedures in child exposed to lead



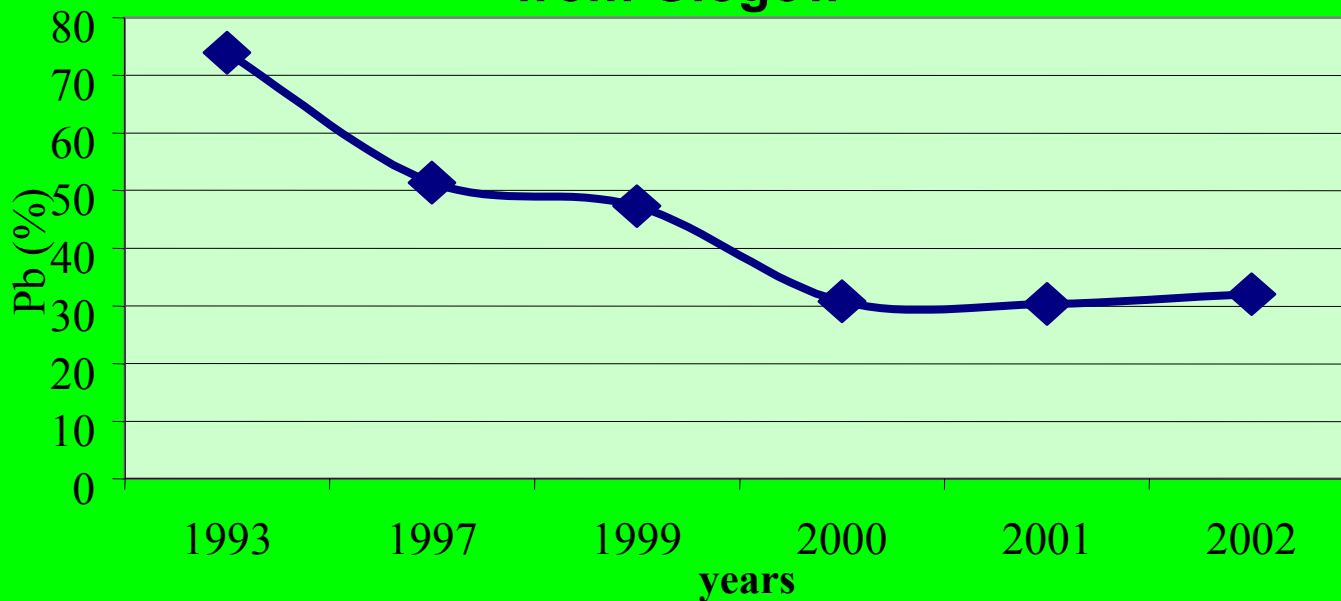
Total lead emission [megagrams/year] in Poland in years 1990-2003



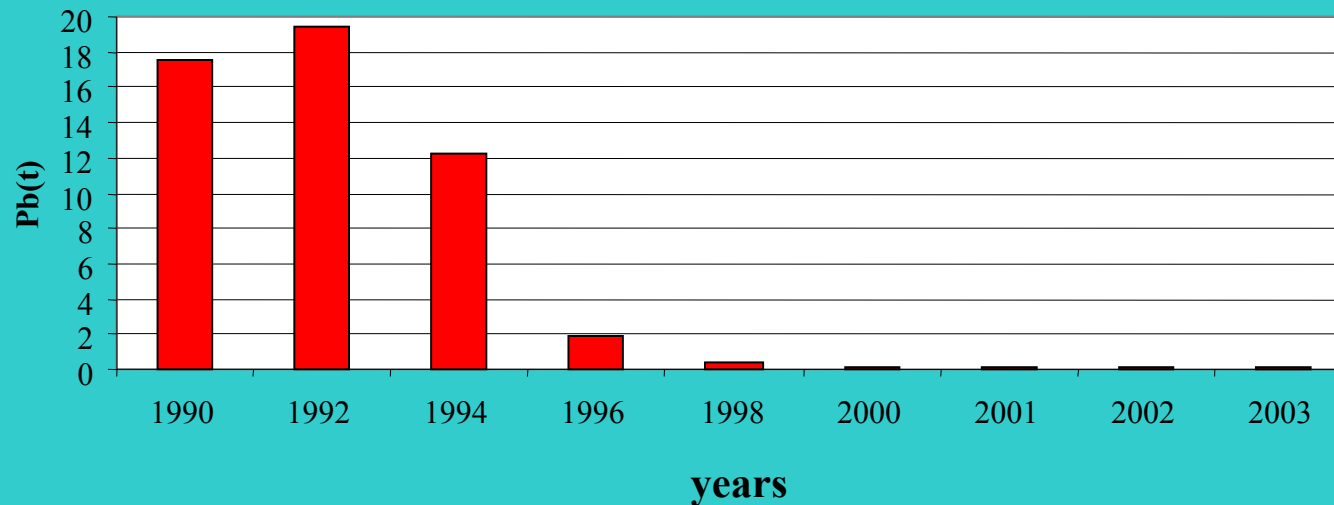
Air Pb emission from smelter HM Głogów (t/year)



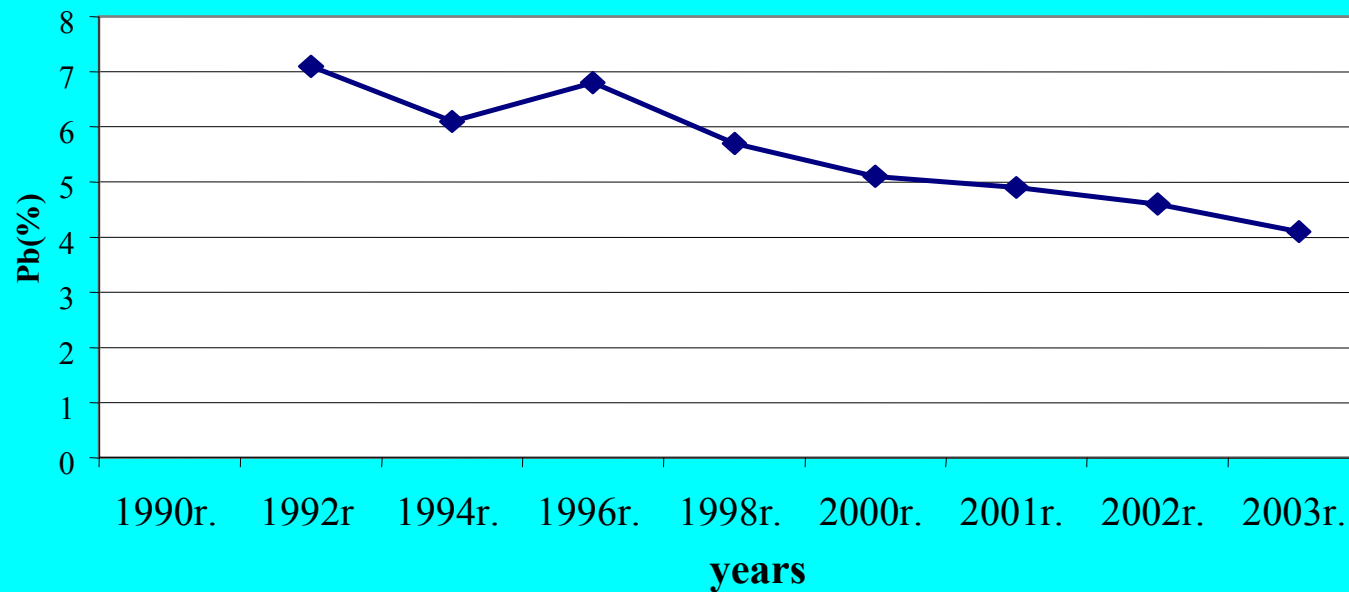
Percentage of children with PbB above 6 $\mu\text{g}/\text{dL}$ from Głogów



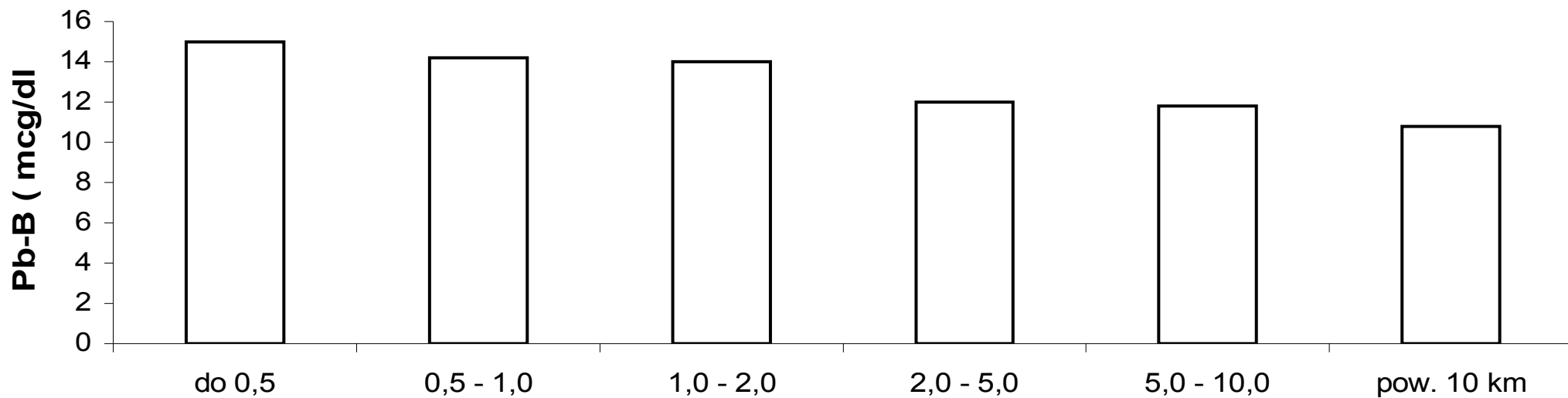
Air Pb emission from smelter HM Legnica (t/year)



Percentage of children with PbB above 6 $\mu\text{g}/\text{dL}$ from Legnica

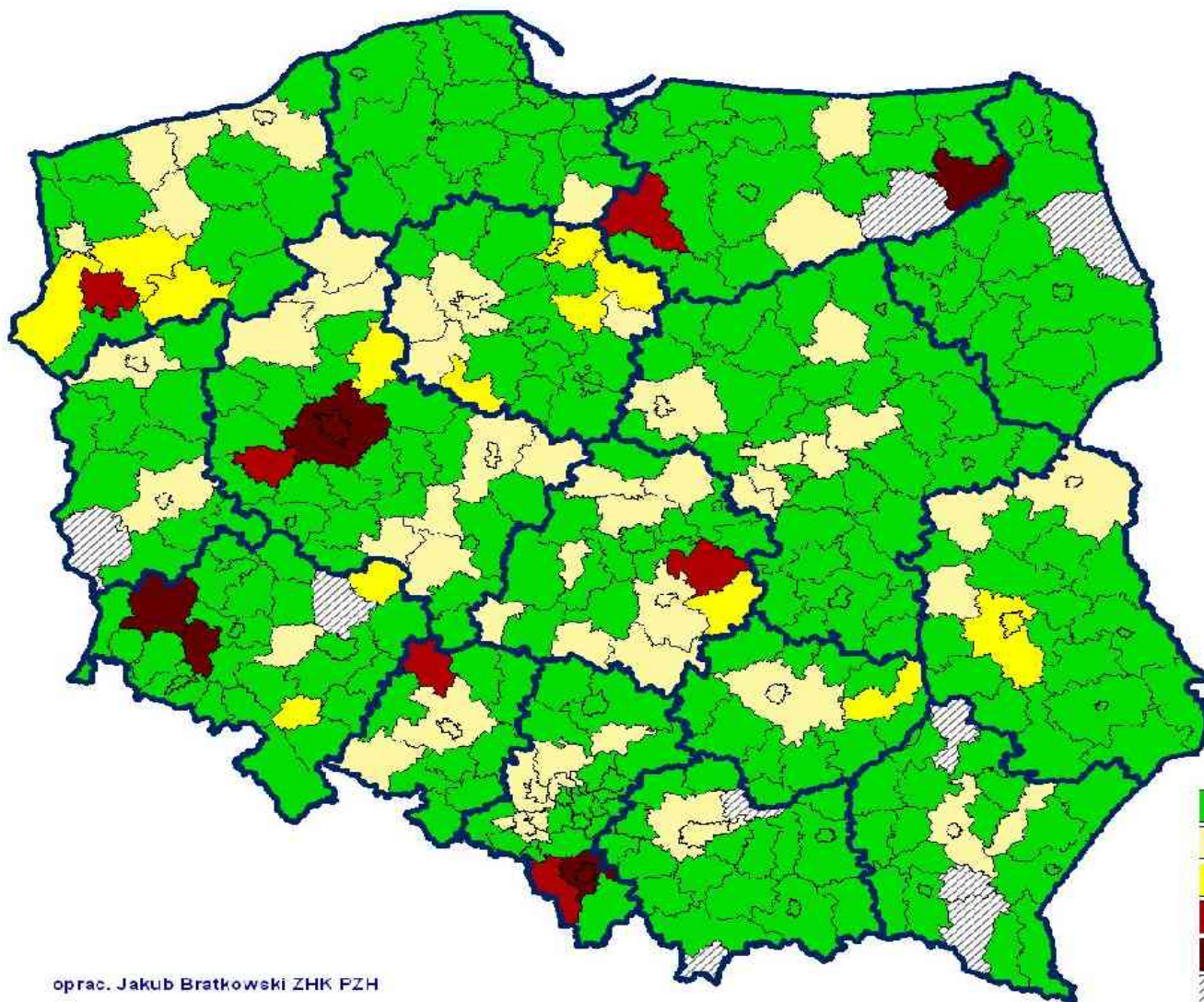


Stężenie ołowiu we krwi dzieci w zależności od odległości miejsca zamieszkania od huty [12]
The average Pb-B level in children depending on the distance from their home to smelter works (km) [12]



Drinking water quality (physical and chemical parameters)–data from 2005

Ołów - odsetek analiz z przekroczeniami



Percentage of analysis disqualified for lead in Poland:

4,68 %

