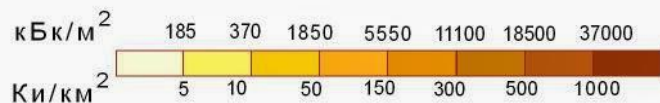


Republican Research and Practical Center
for Radiation Medicine and Human Ecology

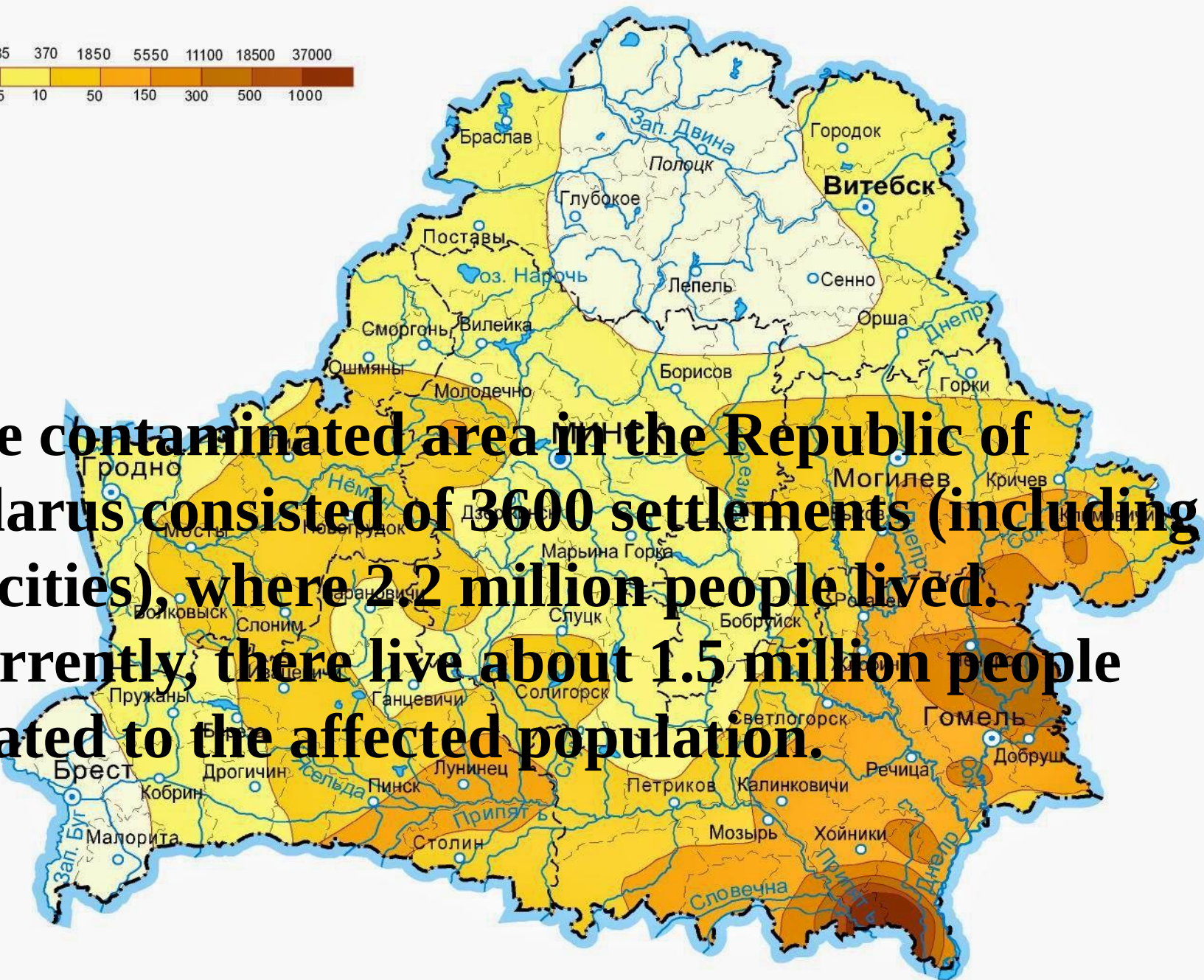
MEDICAL AFTERMATHS OF CHERNOBYL DISASTER IN BELARUS

Ilya Veyalkin
Head of Laboratory of Epidemiology
Gomel, Belarus

Условные обозначения



The contaminated area in the Republic of Belarus consisted of 3600 settlements (including 27 cities), where 2.2 million people lived. Currently, there live about 1.5 million people related to the affected population.



Purpose of the State Registry of persons affected due to the Chernobyl accident

- ▣ Radiation affected population monitoring;
- ▣ Obtaining the reliable data on the medical and biological effects of the Chernobyl accident;
- ▣ Provision of information to support dispensary examination, planning and carrying out therapeutic measures.

The objectives of the State Registry

- ▣ Maintenance of a personalized automated records of persons affected by the accident;
- ▣ Dynamic replenishment of necessary information about the persons affected by the accident;
- ▣ Development of normative-legal acts for the medical monitoring of the various categories of the affected citizens.

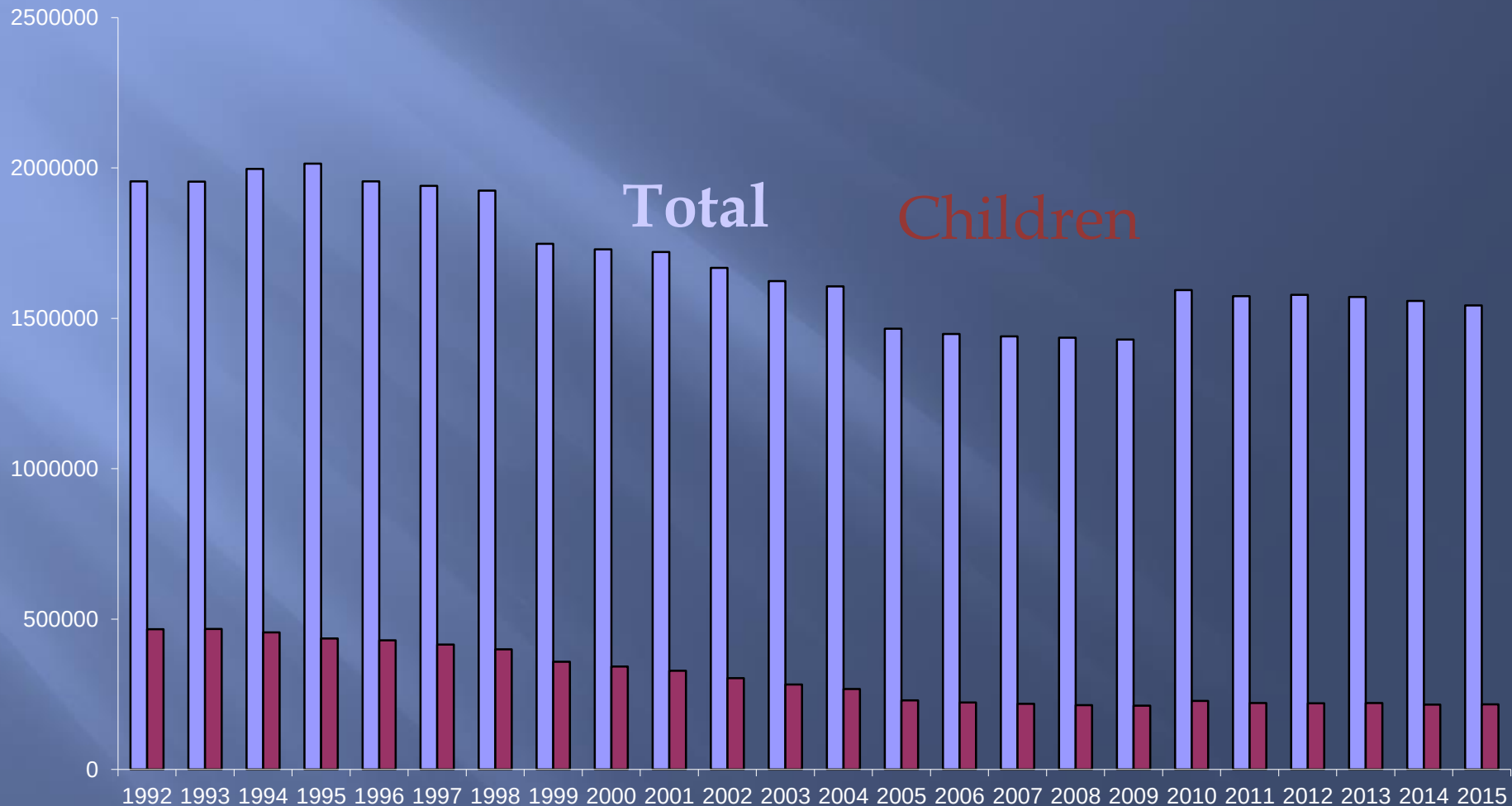
Groups of observation

- ✓ **1 GPR** - persons who participated in the liquidation of the Chernobyl accident and its consequences, divided into two subgroups
- ✓ **2 GPR** – persons evacuated or who left the areas of evacuation on their own in 1986;
- ✓ **3 GPR** – people living or working in the areas of primary and subsequent resettlement, as well as those who were resettled or who left these areas after the accident on their own;
- ✓ **4 GPR** - persons born from people of 1-3 groups, except for children belonging to the 2 and 3 groups;
- ✓ **5 GPR** - people living or working in areas with the right of resettlement and of periodic radiation monitoring, as well as residents of other settlements, where the average equivalent radiation dose exceeds 1 mSv per year.
- ✓ **6 GPR** - persons who participated in the liquidation or affected by the accidents and their consequences at other nuclear facilities of civil or military purposes, as well as the victims of these accidents or as a result of trials, tests or other work related to nuclear facilities, including nuclear weapons;
- ✓ **7 GPR** – disabled people due to the Chernobyl NPP accident from the number of people who have no status “affected due to the Chernobyl NPP accident”, as well as children and adolescents upon detection of diseases of blood-forming organs (acute leukemia), thyroid gland (adenoma, cancer) and malignant tumors if they are not assigned to other groups of primary accounting.

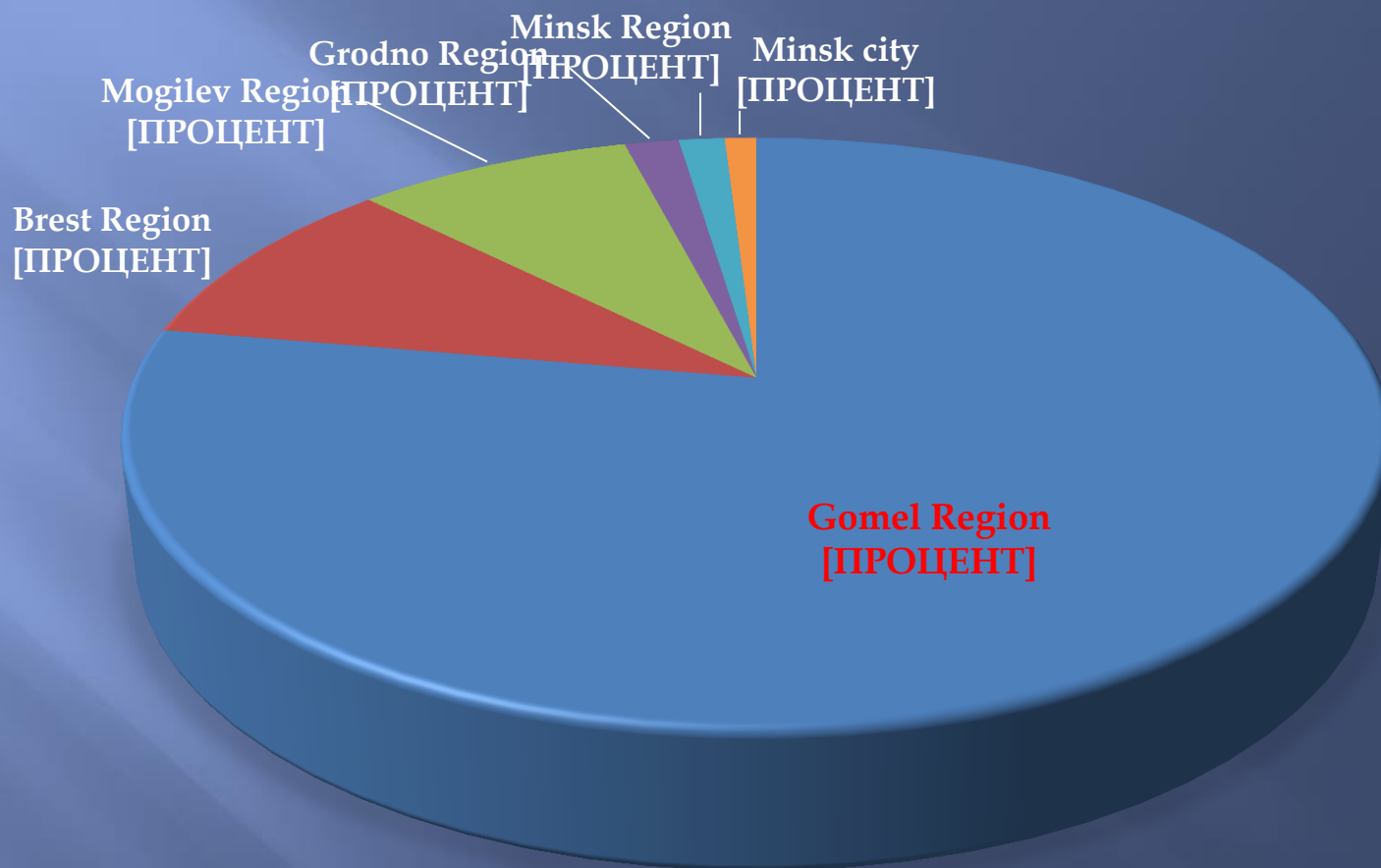
NUMBER OF PEOPLE IN STATE CHERNOBYL REGISTRY

GPR	Total number	UnderObservation at 01.01.2015	Number of Cancer Cases (1986-2014)
1GPR (Liquidators)	99 693	55 425	11 431
2GPR (Evacuees)	13 101	4 310	828
3GPR (Residents)	139 470	56 593	6 731
4GPR (Offspring)	28 487	19 963	96

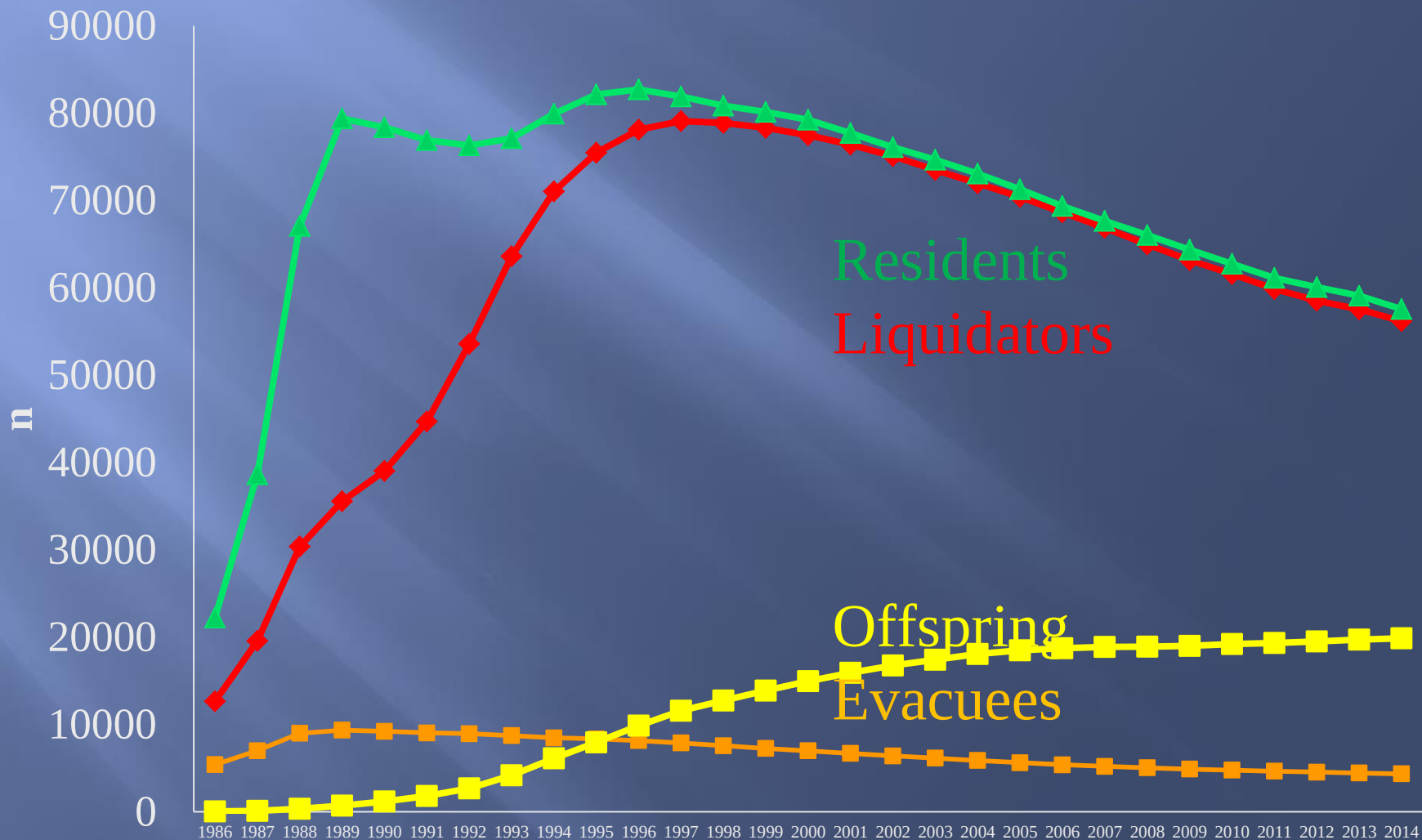
Total number of affected people



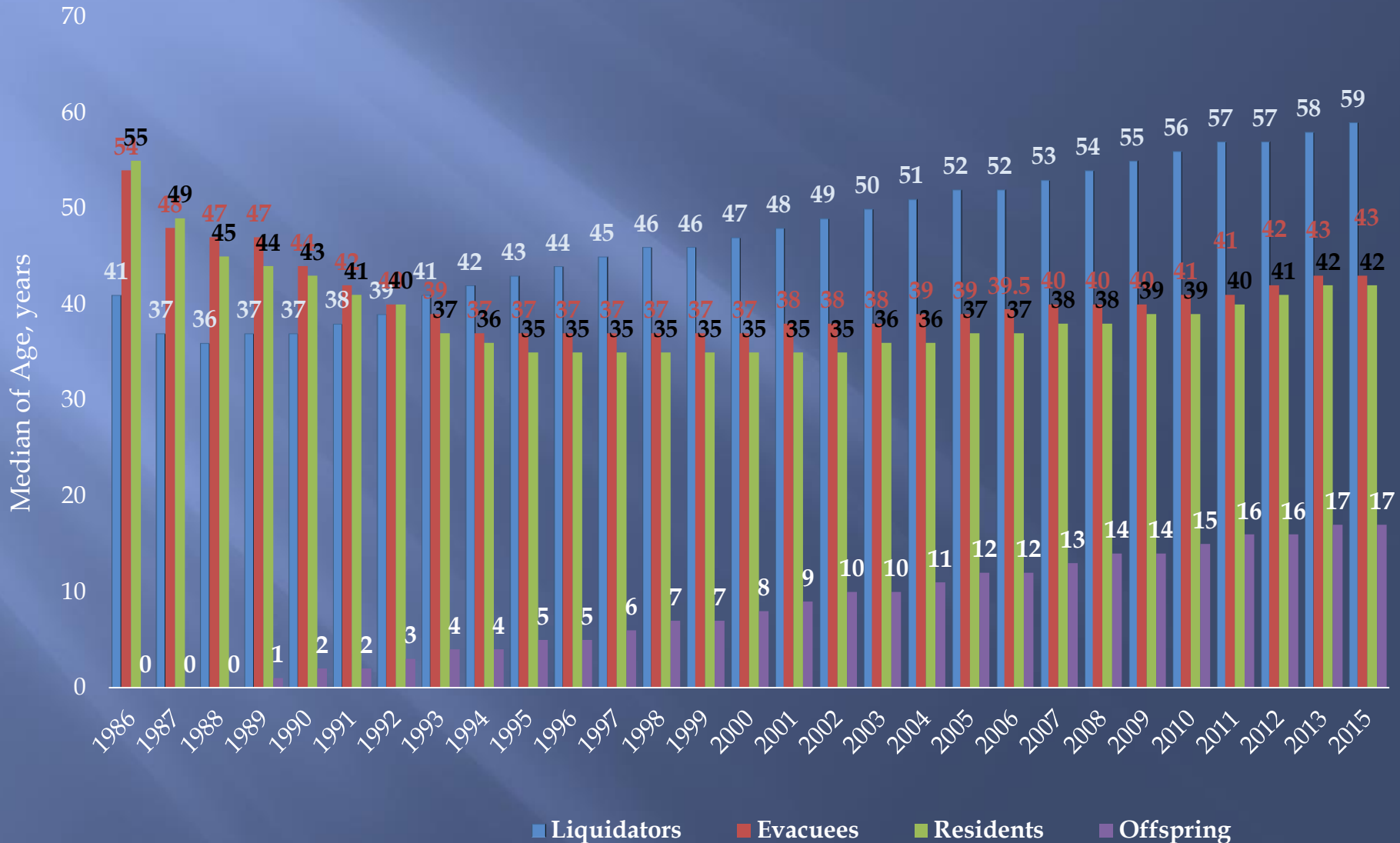
Distribution of Affected People by Regions



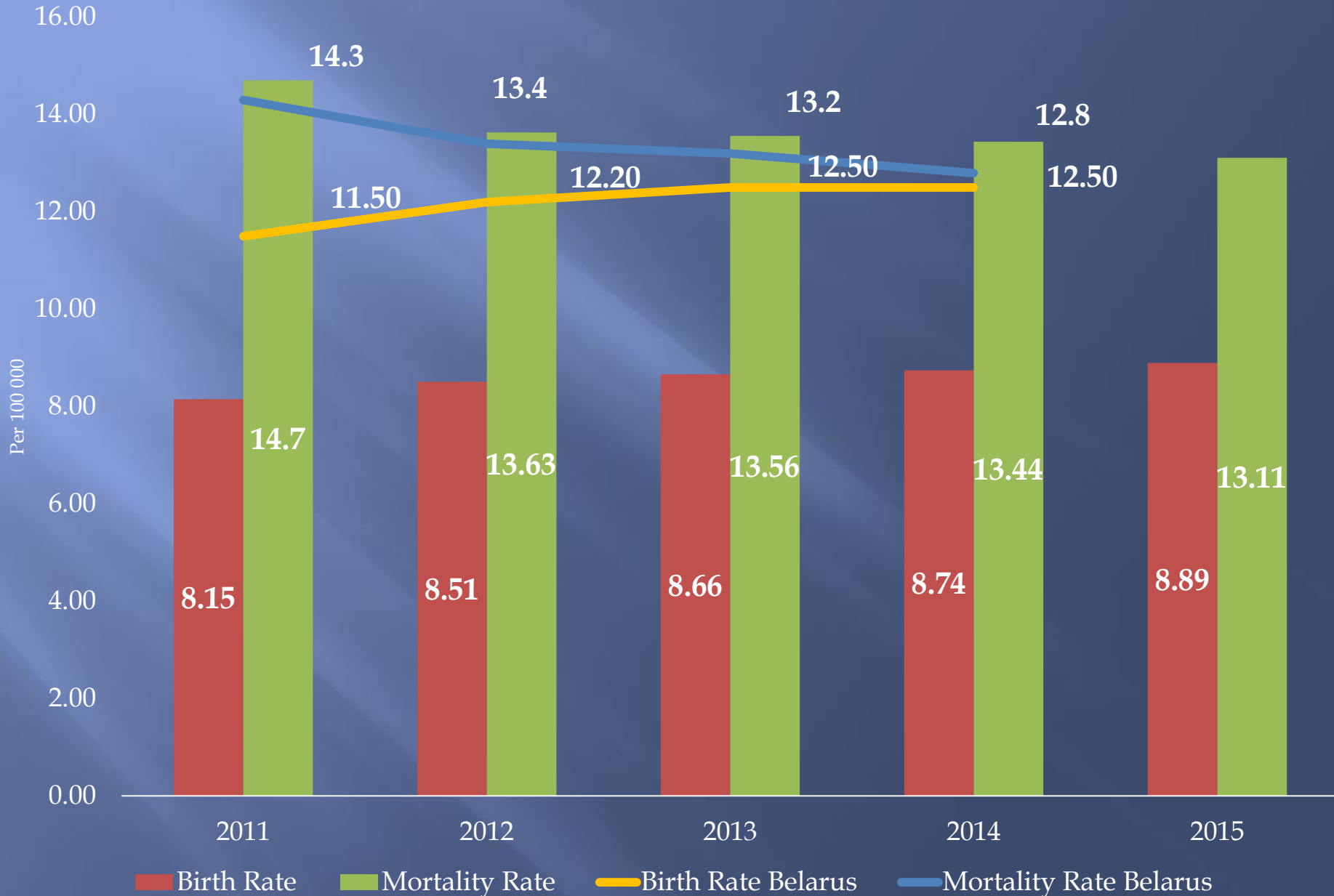
NUMBER OF PEOPLE IN STATE CHERNOBYL REGISTRY



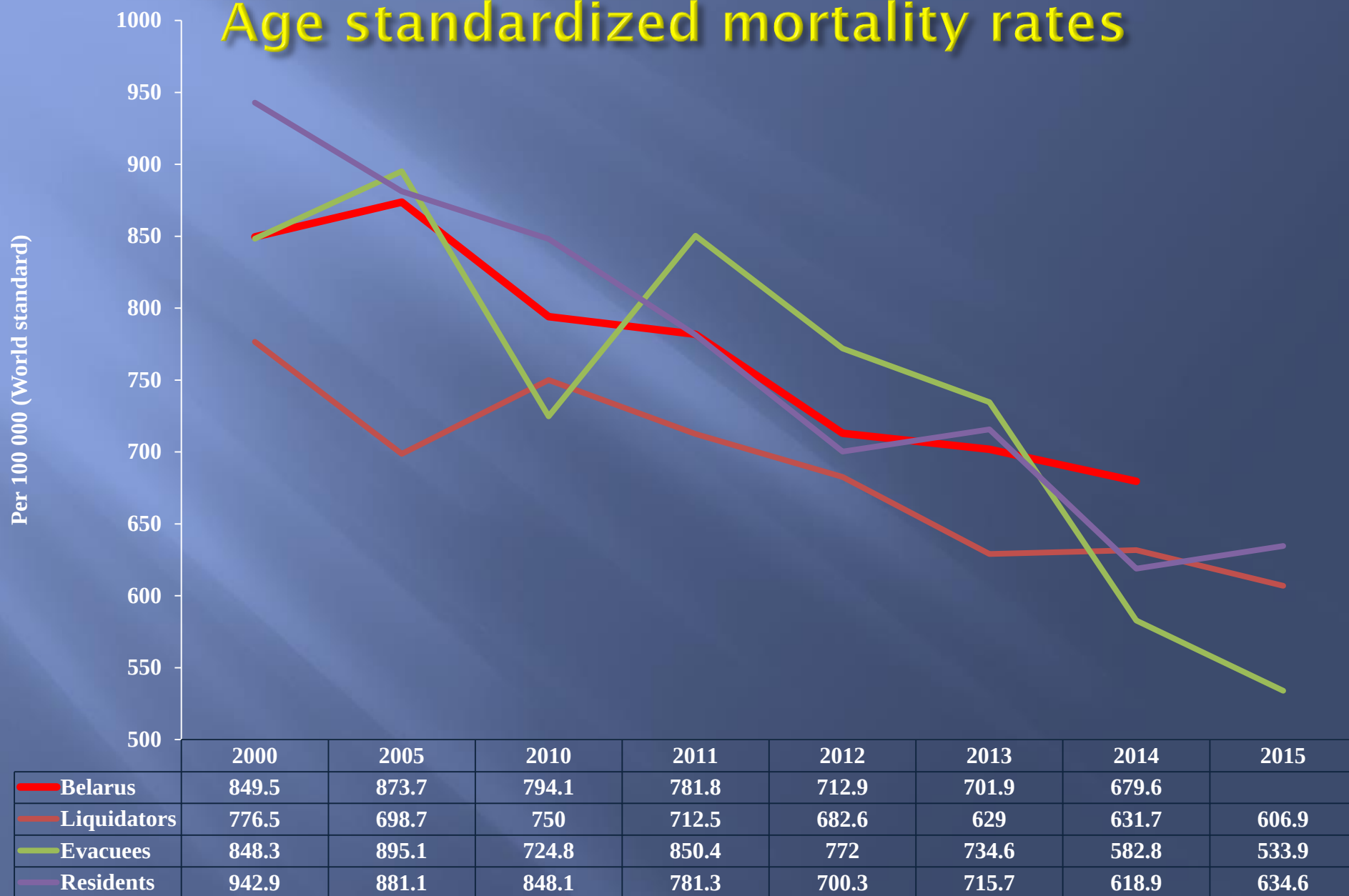
Median of Age



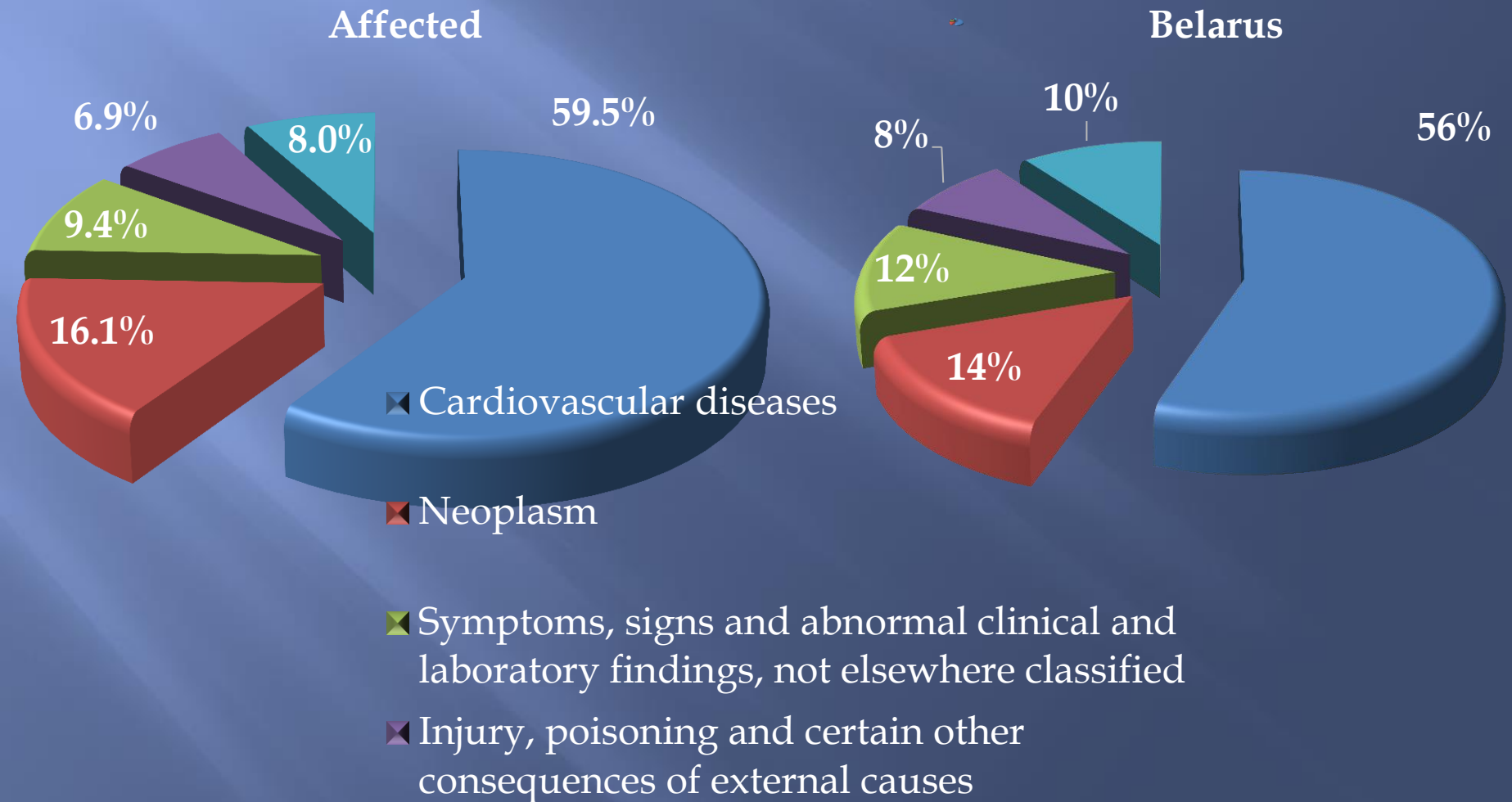
Birth and mortality rates



Age standardized mortality rates

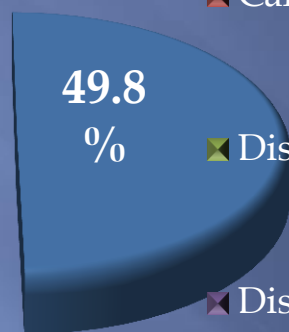
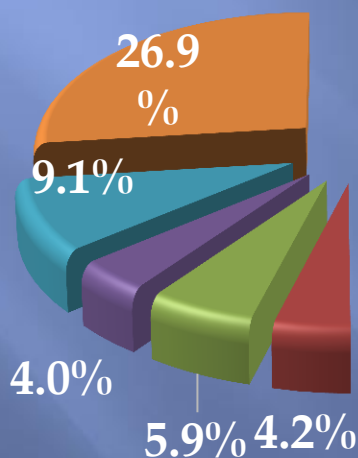


Structure of Mortality 2015



Structure of Incidence rates of affected people Belarus population

Affected



■ Diseases of the respiratory system

■ Cardiovascular diseases

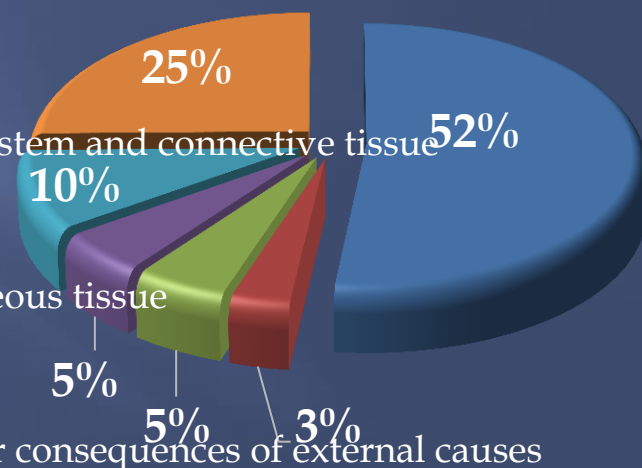
■ Diseases of the musculoskeletal system and connective tissue

■ Diseases of the skin and subcutaneous tissue

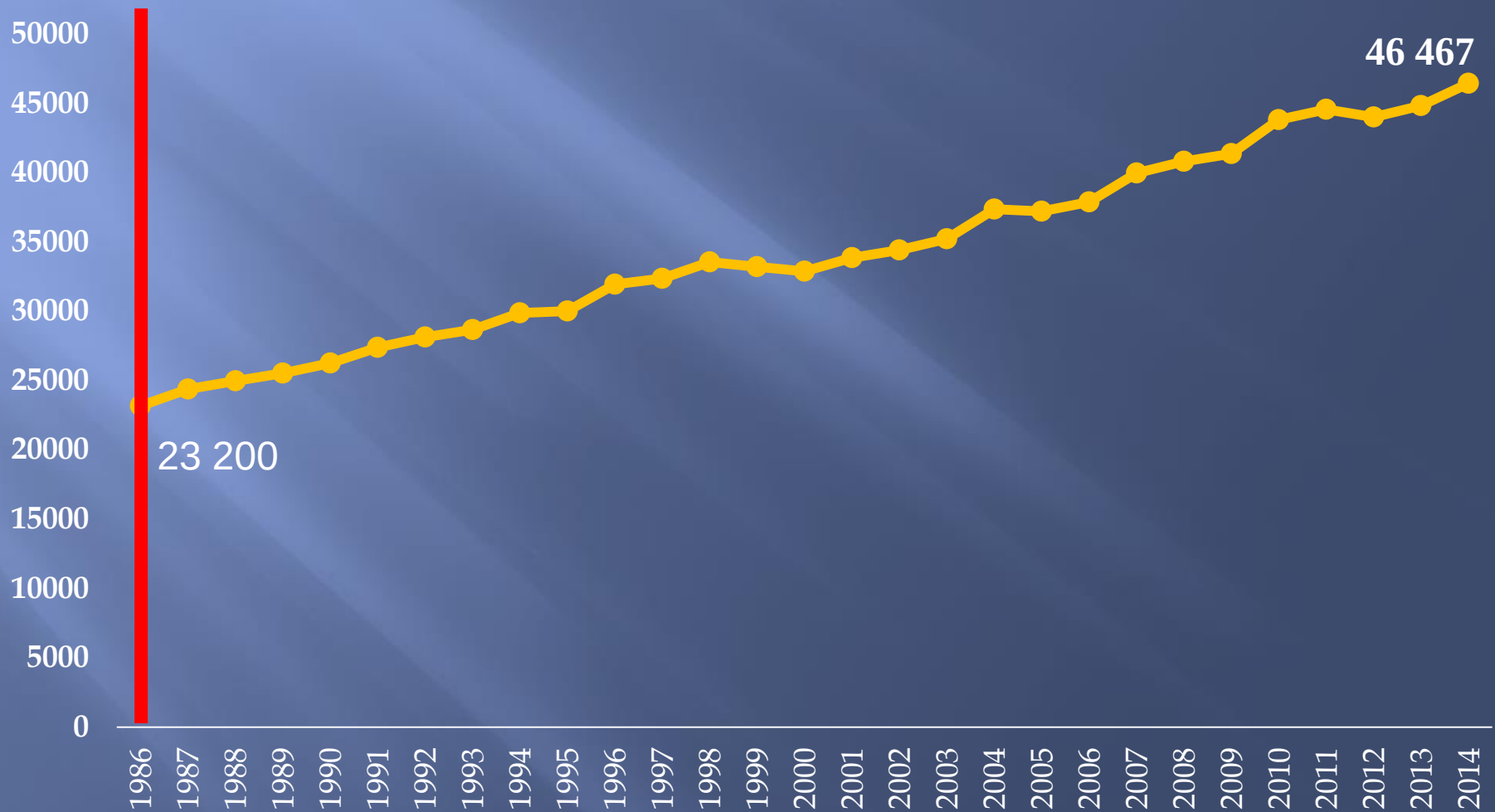
■ Injury, poisoning and certain other consequences of external causes

■ Other

Belarus

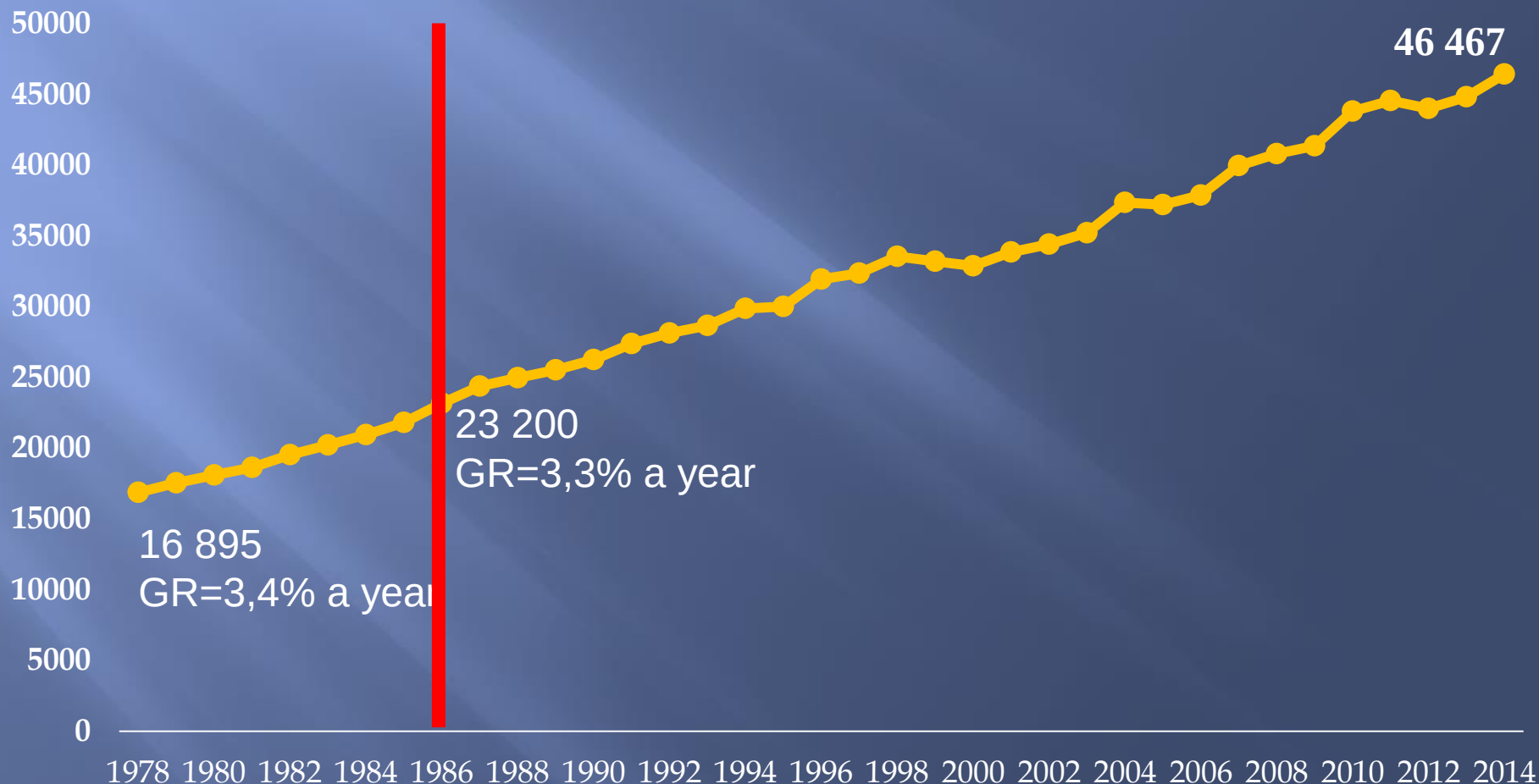


From 1986 to 2014 the number of registered cases of cancer in Belarus increased from 23 200 to 46 467 (2 times)

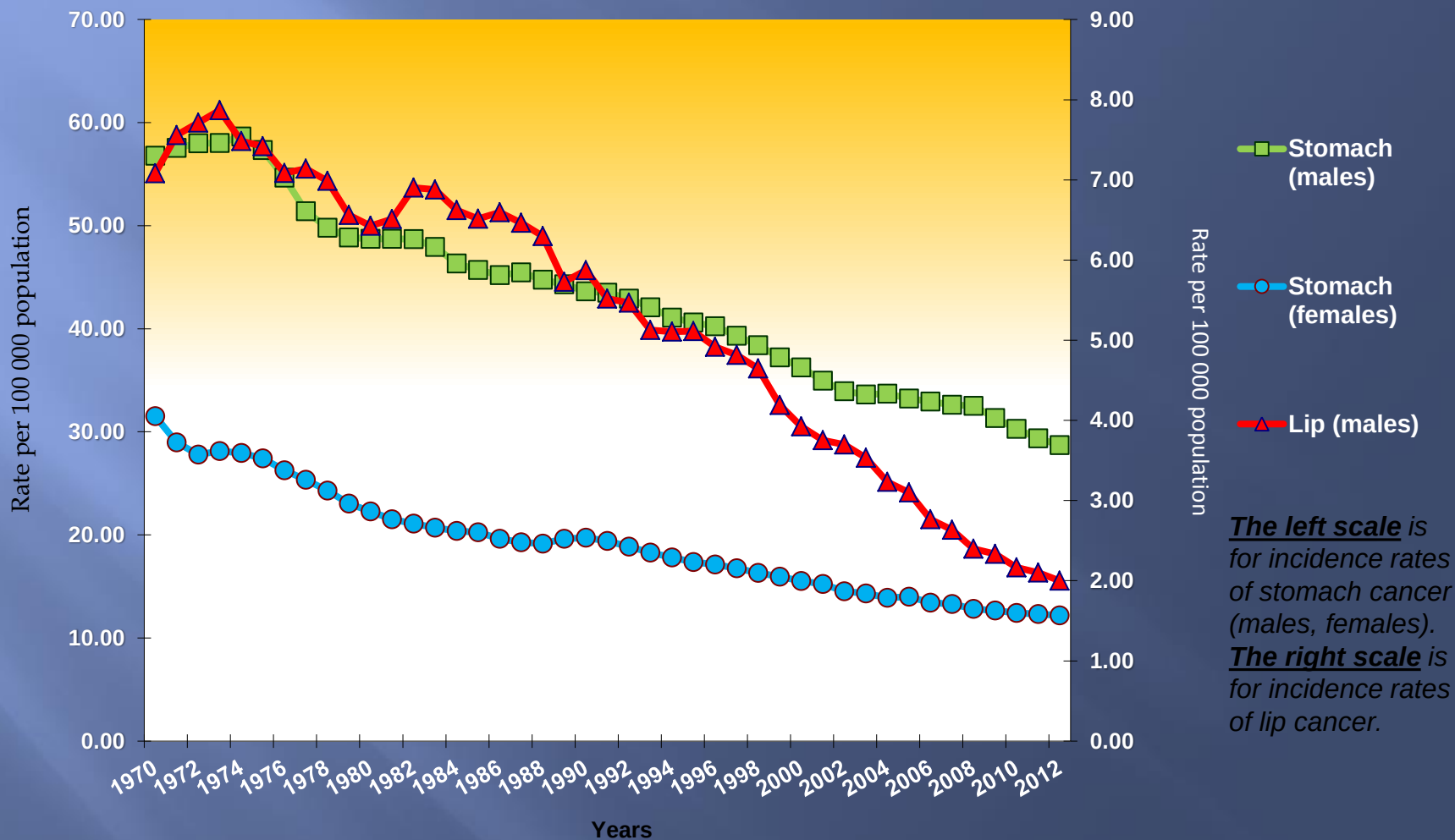


In general there were many speculations, assumptions and predictions about the role of Chernobyl accident in cancer growth in Belarus. Most assumptions have been varying with the time. And till the present the question about role of Chernobyl accident has not been answered. But the growth of Thyroid cancer has been evident.

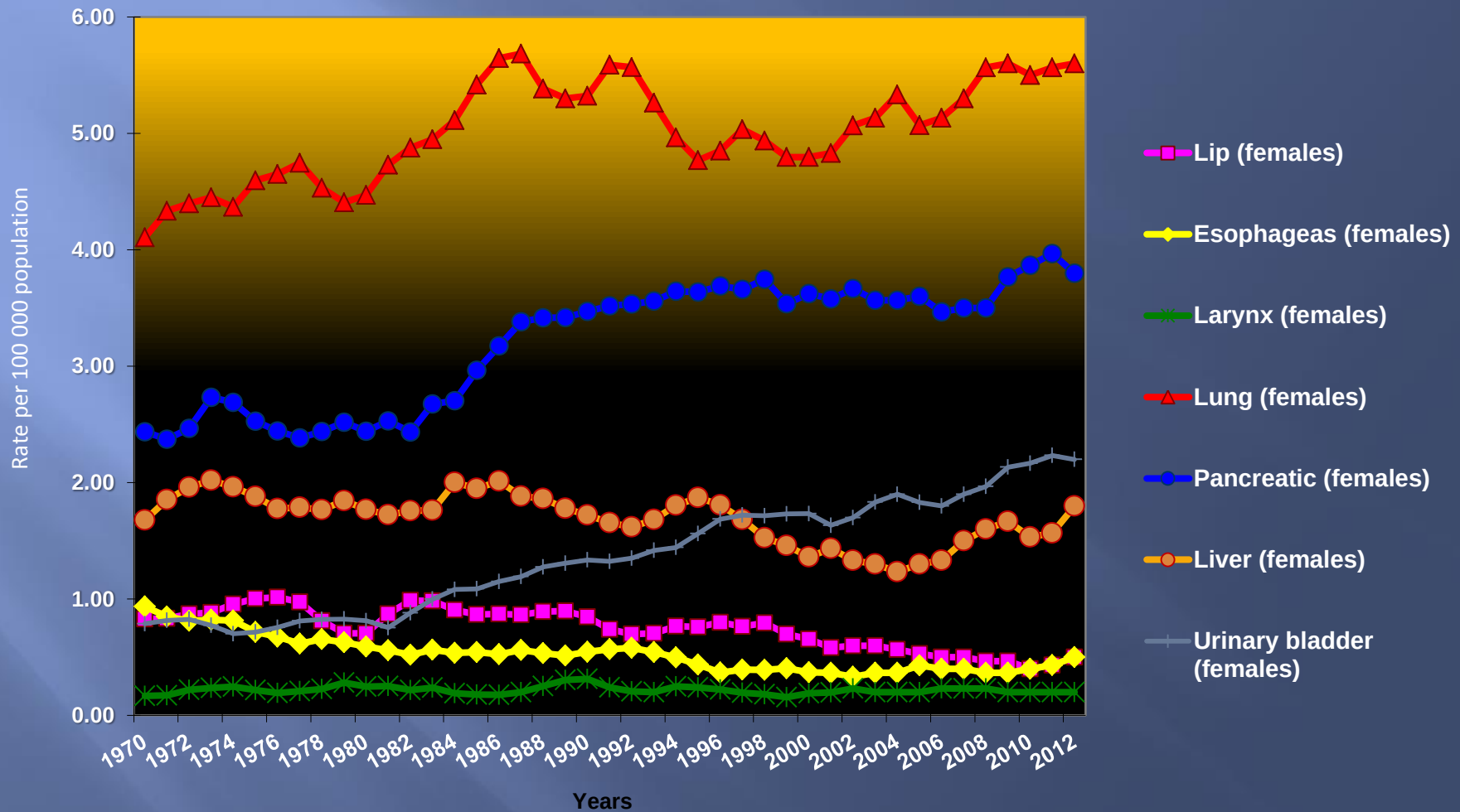
From 1978 to 2014 the number of registered cases of cancer in Belarus increased from 16 895 to 46 467



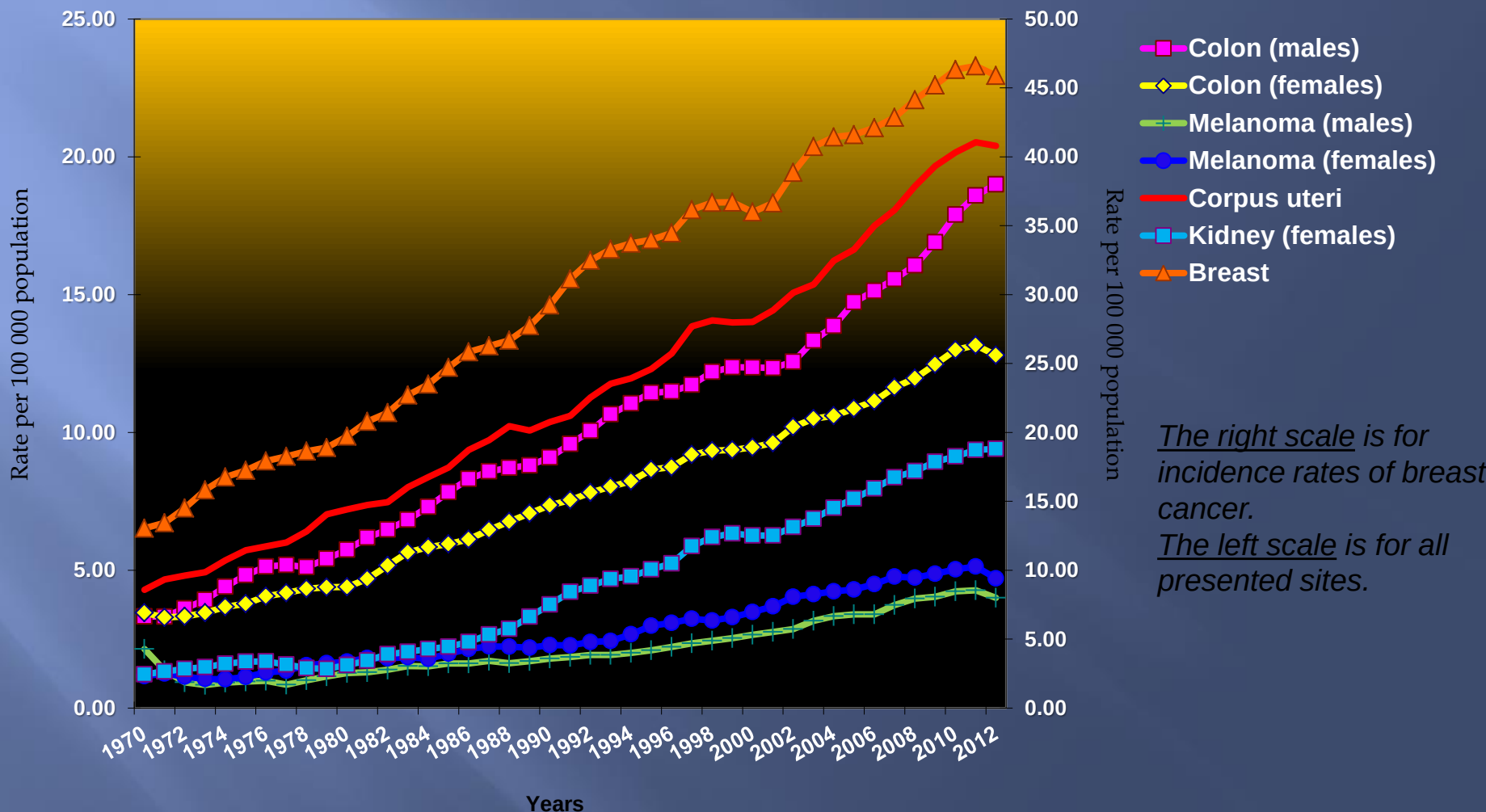
Incidence rates of malignant neoplasm with a negative trend



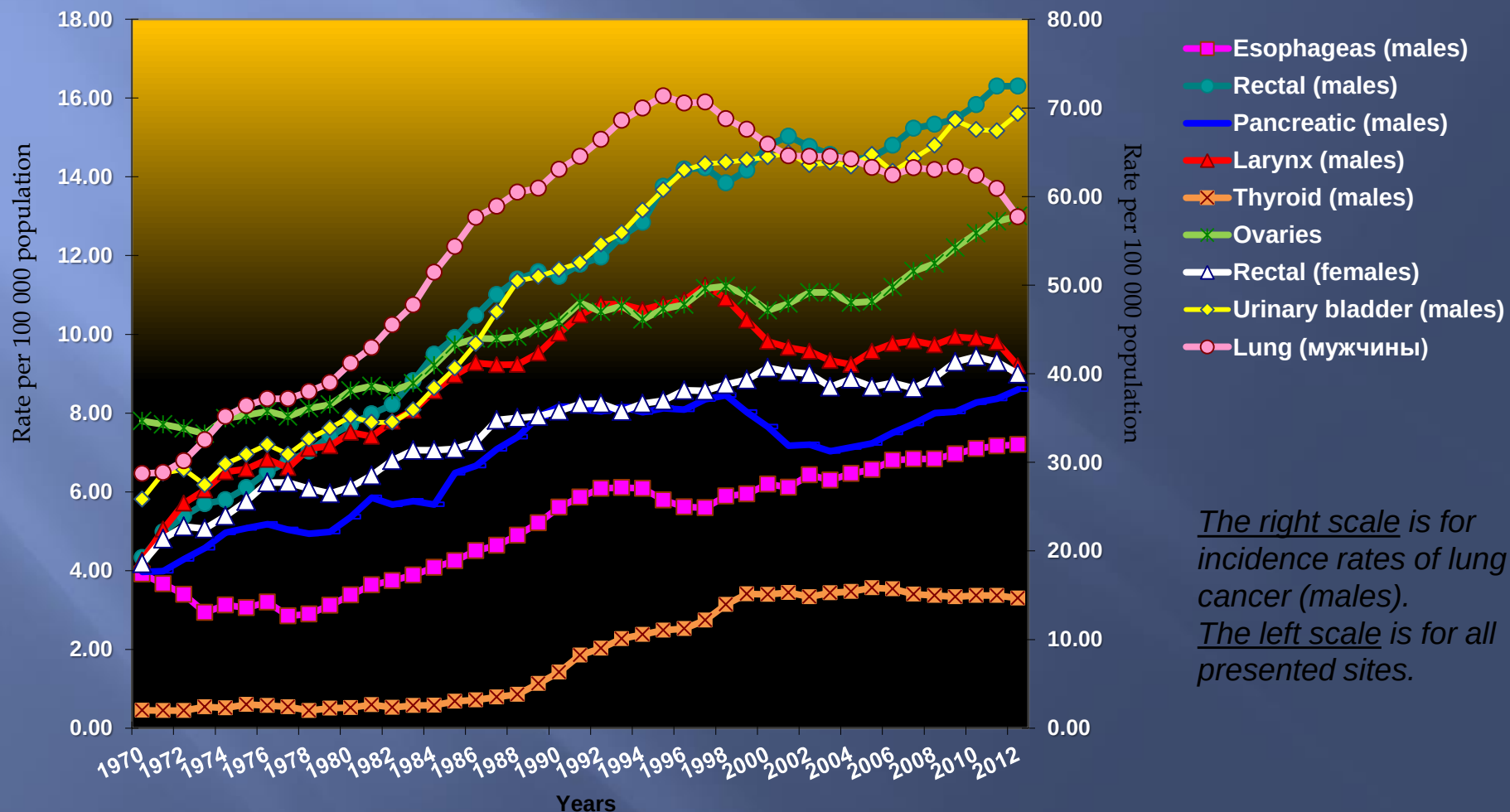
Trends in malignant neoplasm incidence rates with insignificant changes



Incidence rates of malignant neoplasm, that trend were growing relative uniformly

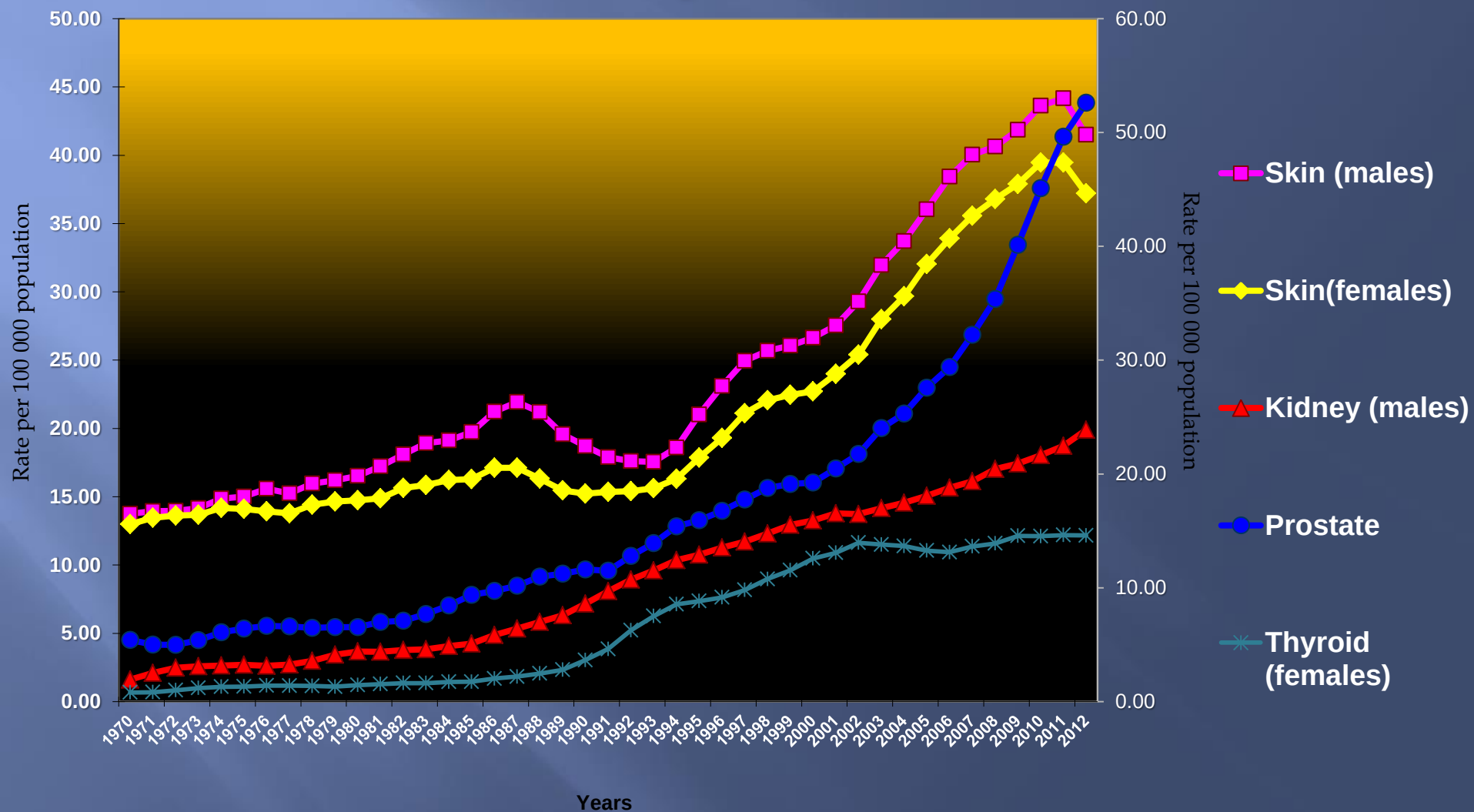


Incidence rates of malignant neoplasm with a positive trend, that have become stable since 1990s

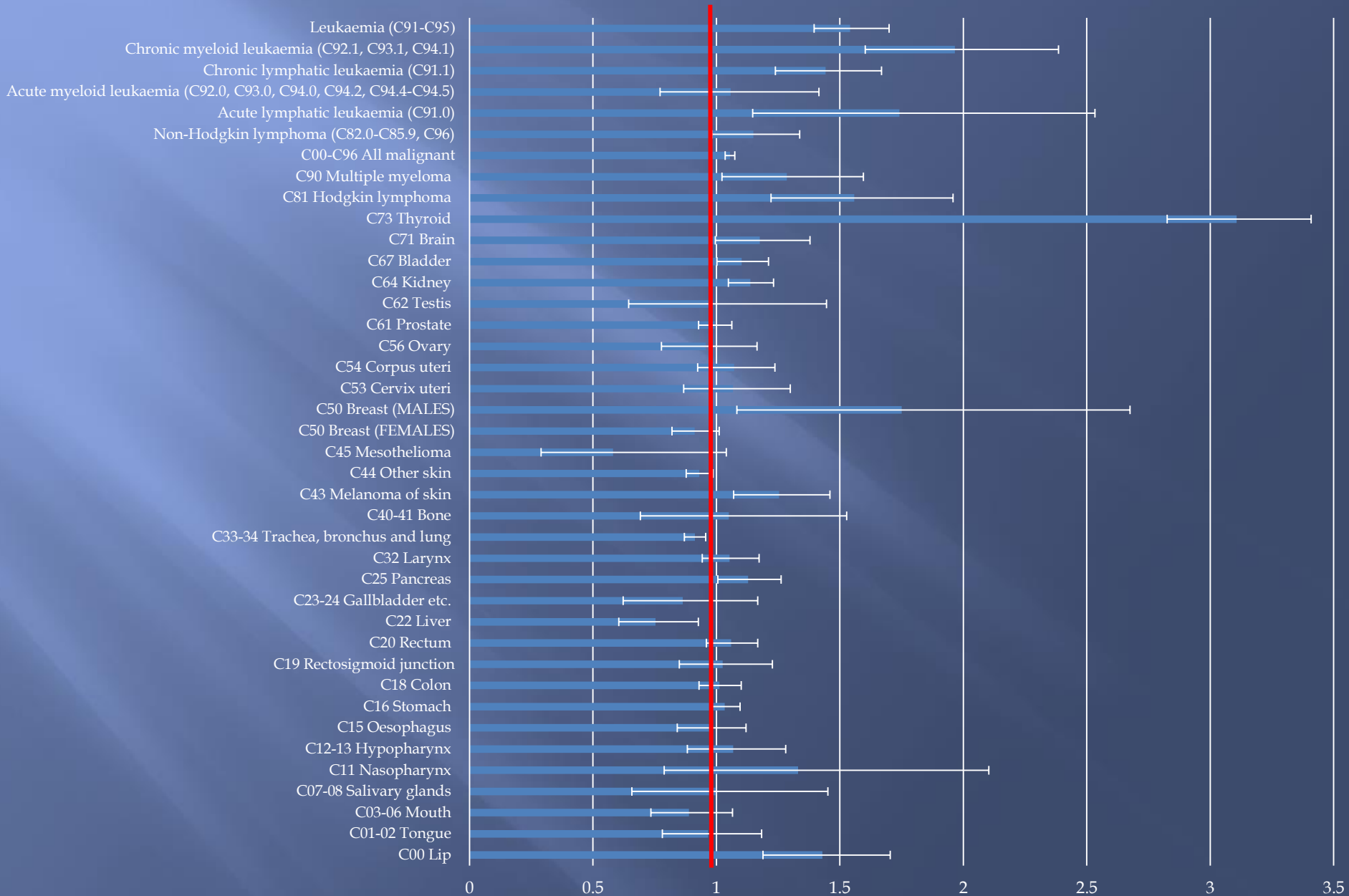




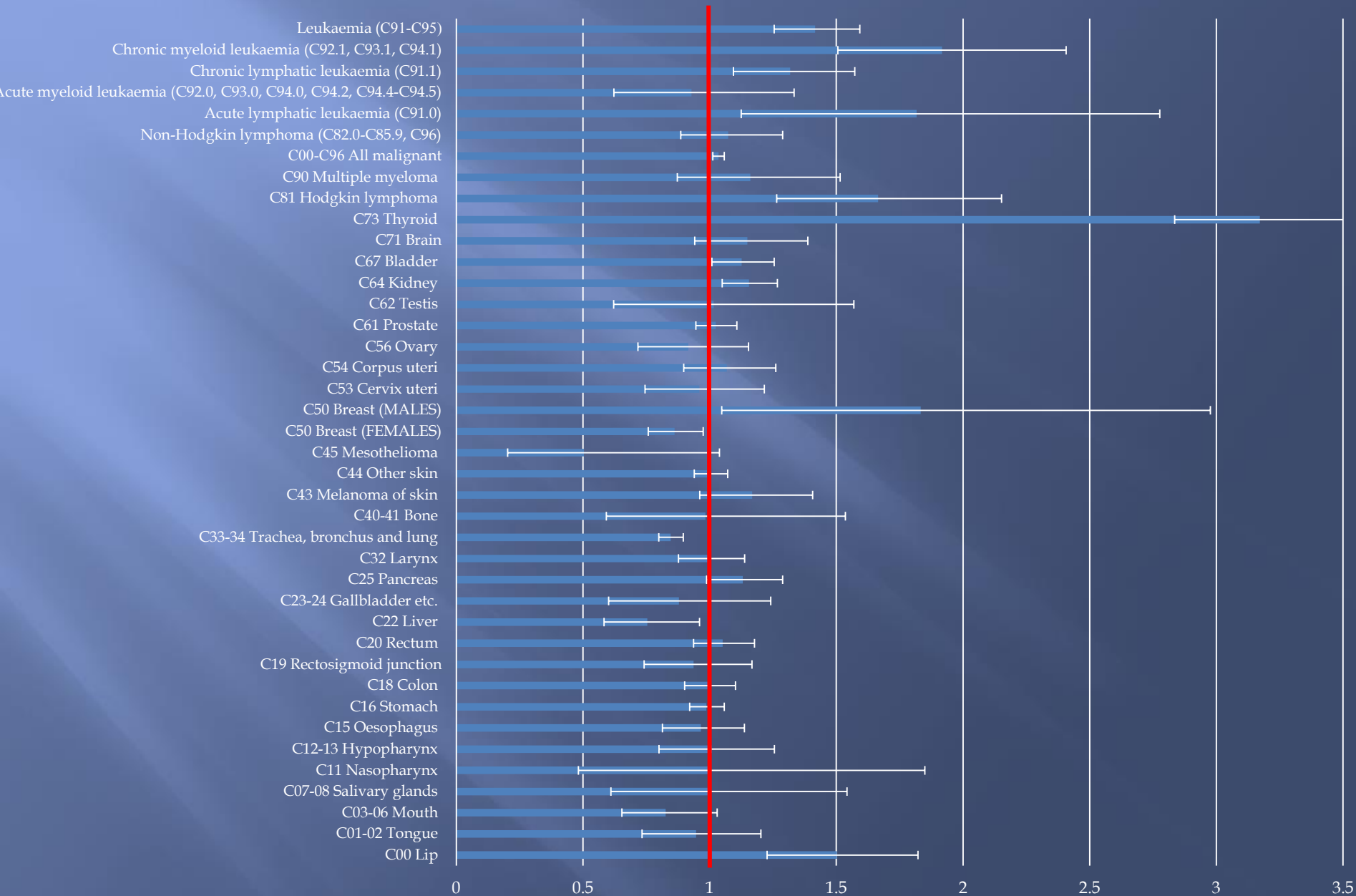
Malignant neoplasm incidence rates with **strongly pronounced positive trend over the past 10 years**



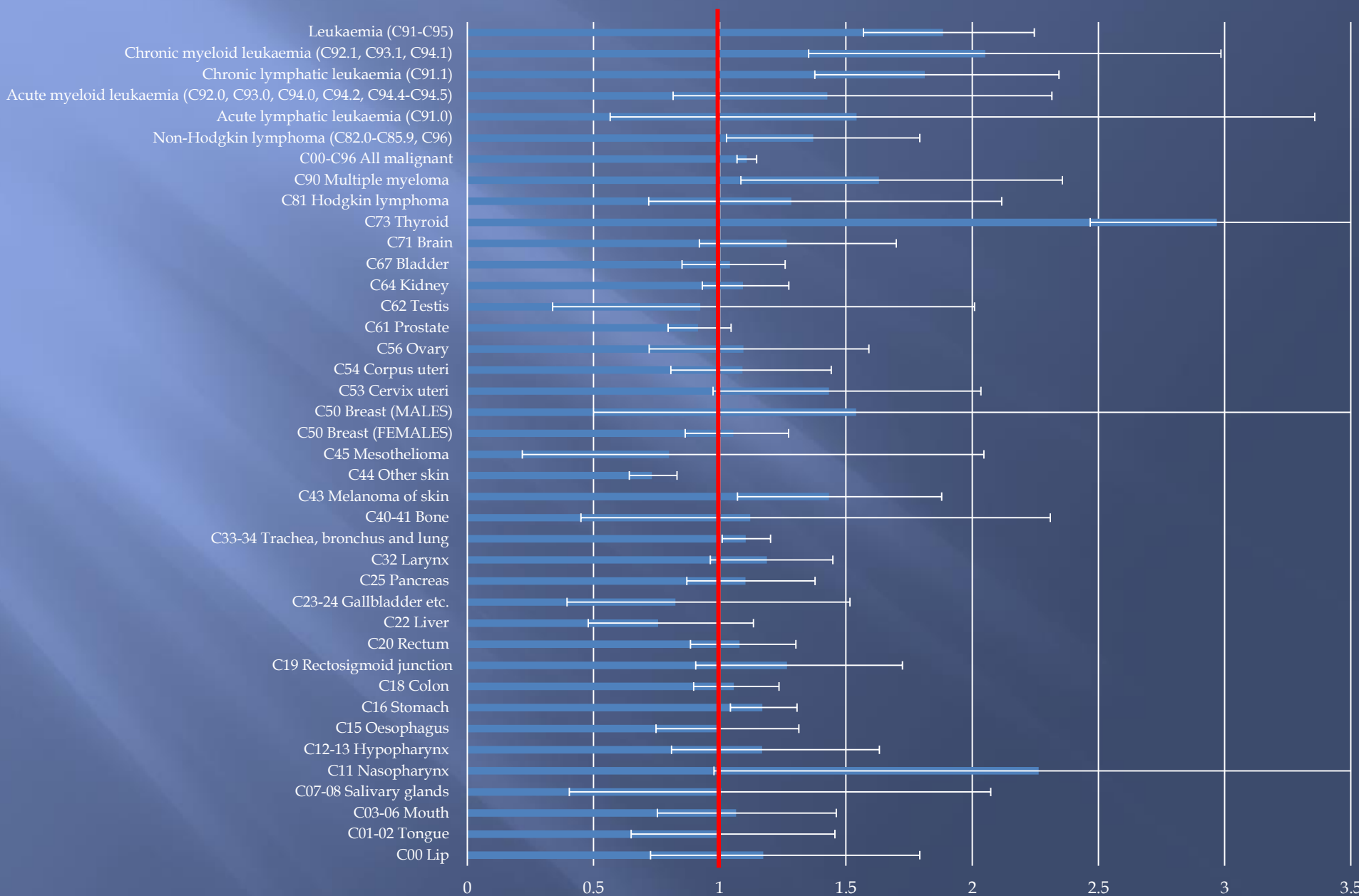
SIR liquidators



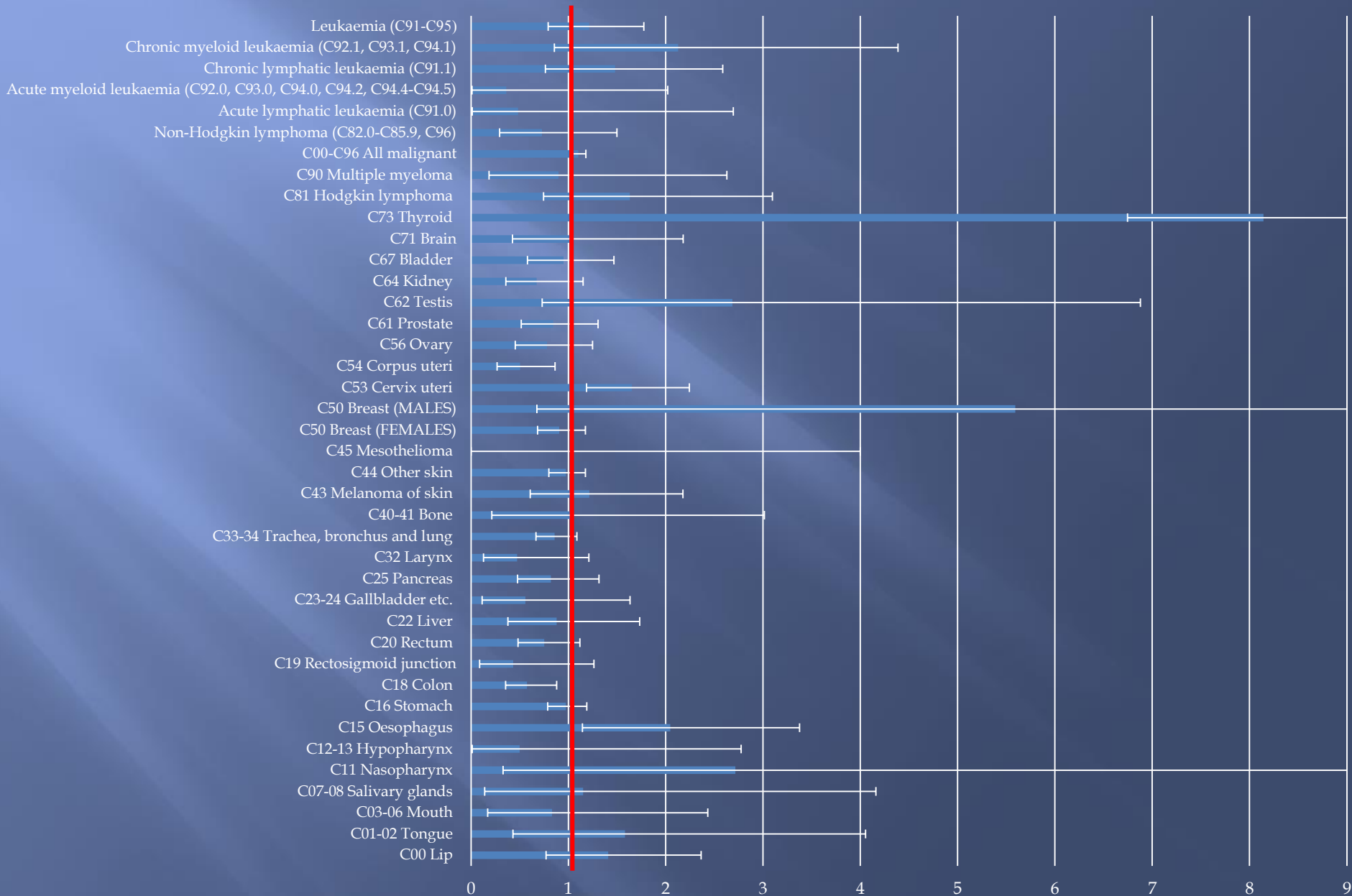
SIR liquidators 1986-1987



SIR liquidators after 1987

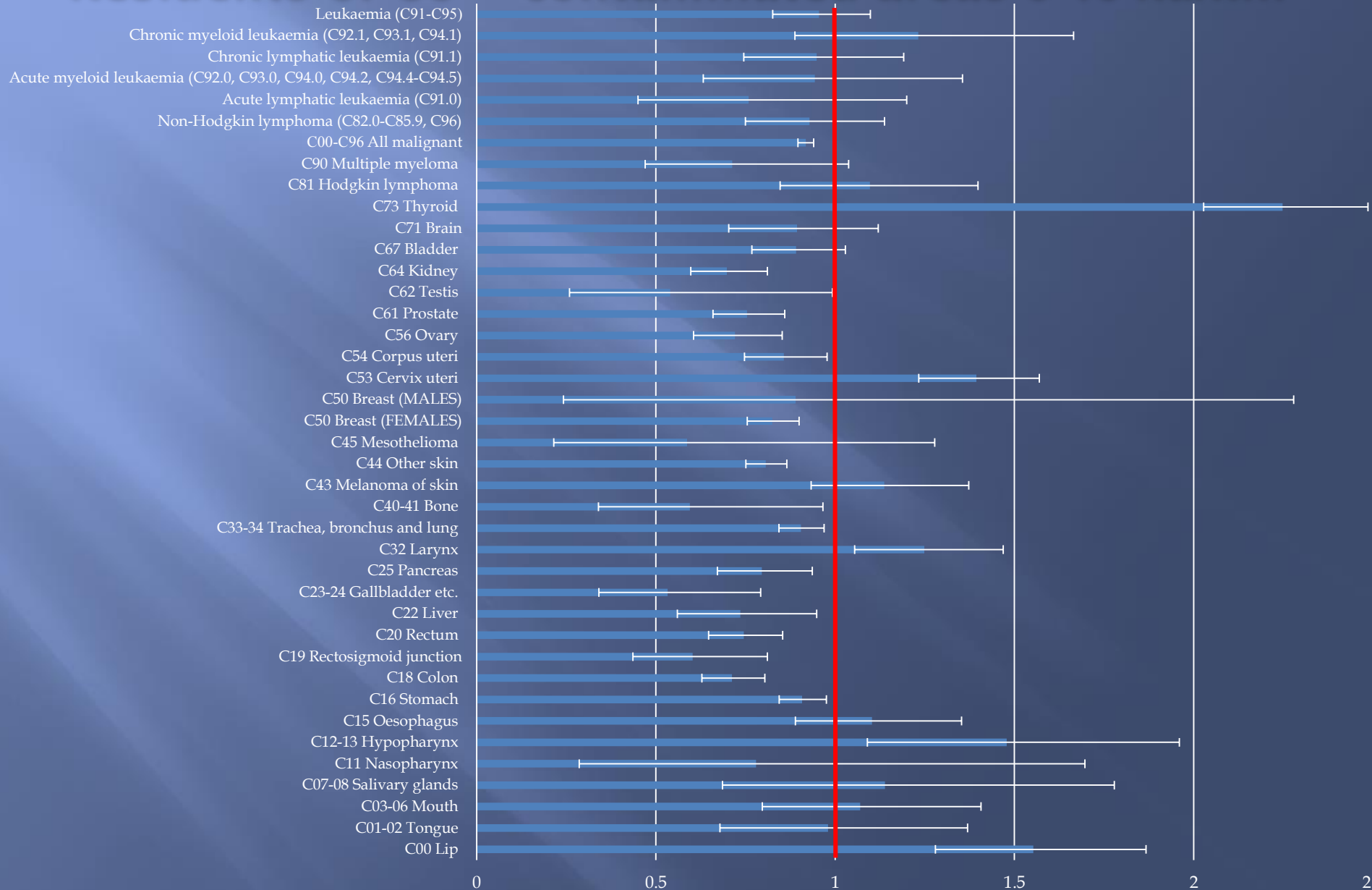


SIR Evacuees



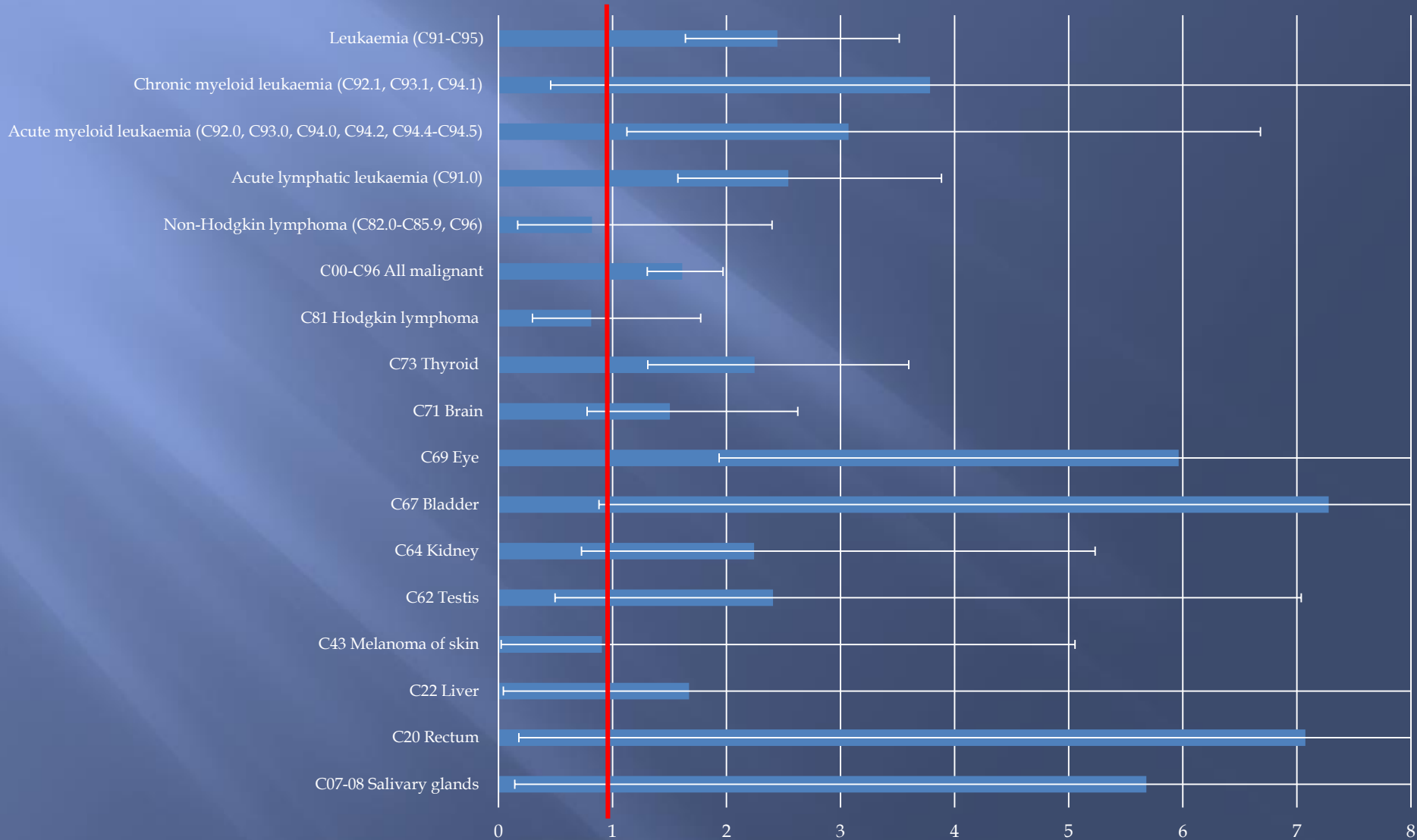
SIR

Residents of Cs¹³⁷ contaminated areas 5-15 Ku/km²

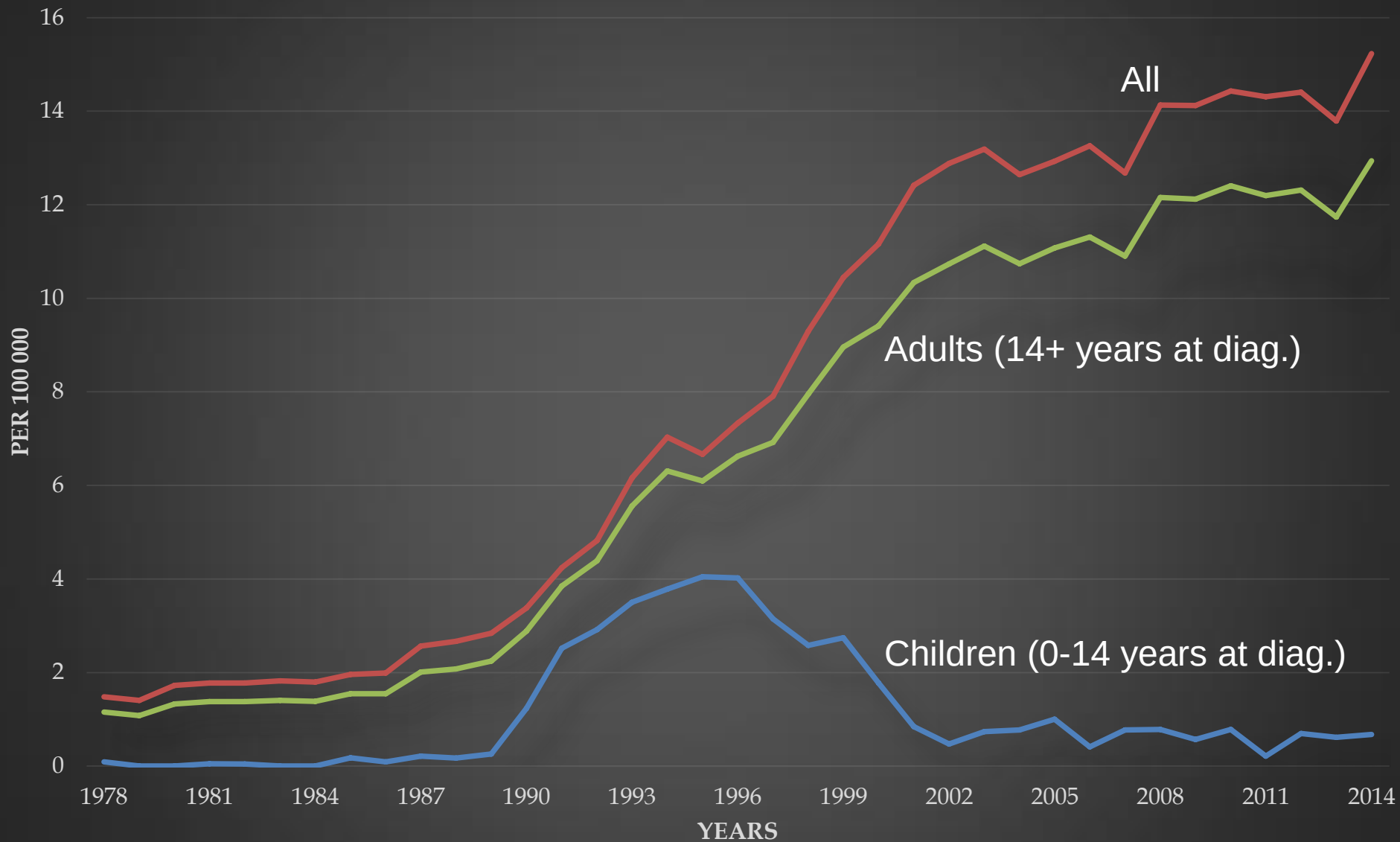


SIR

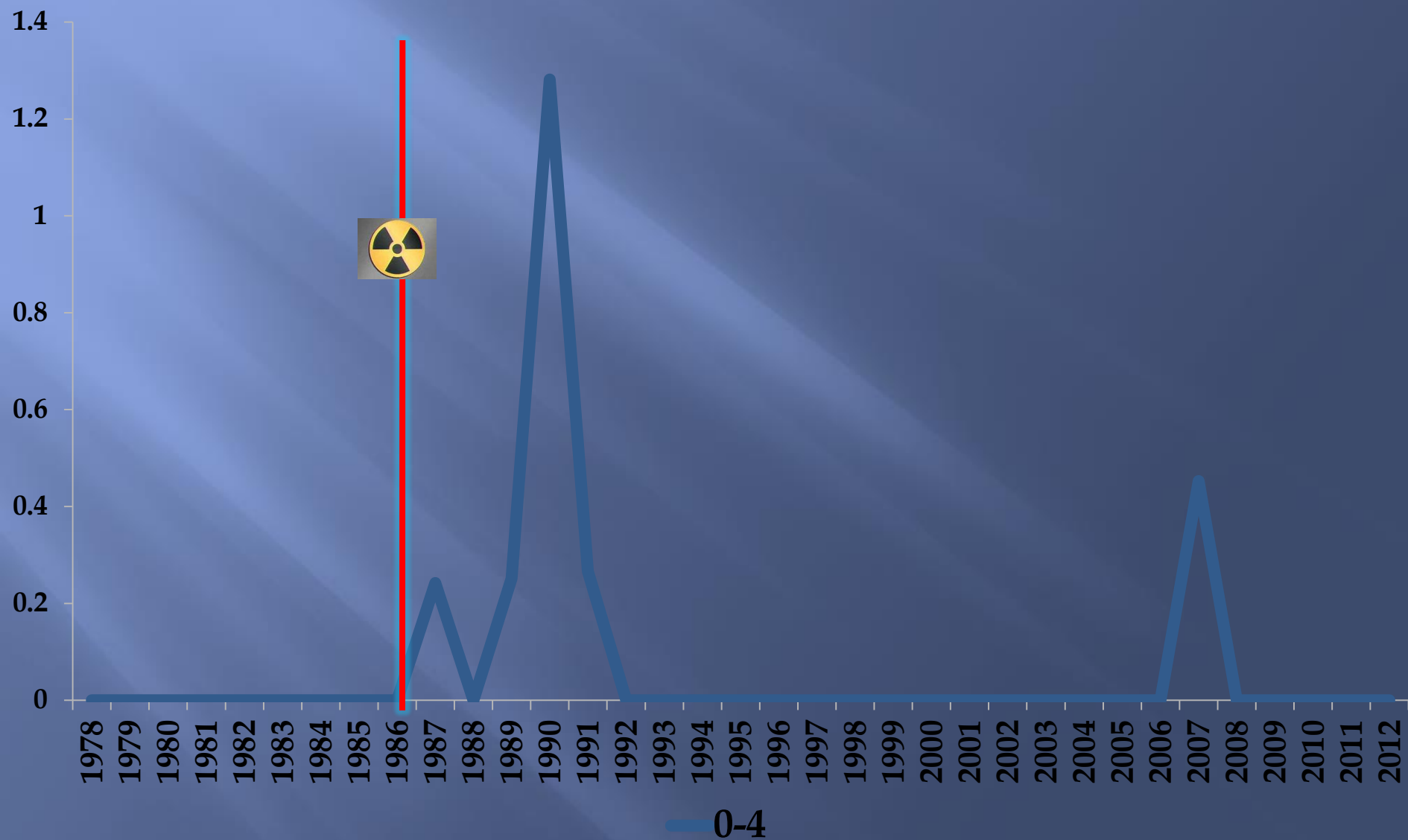
Offspring of Affected People



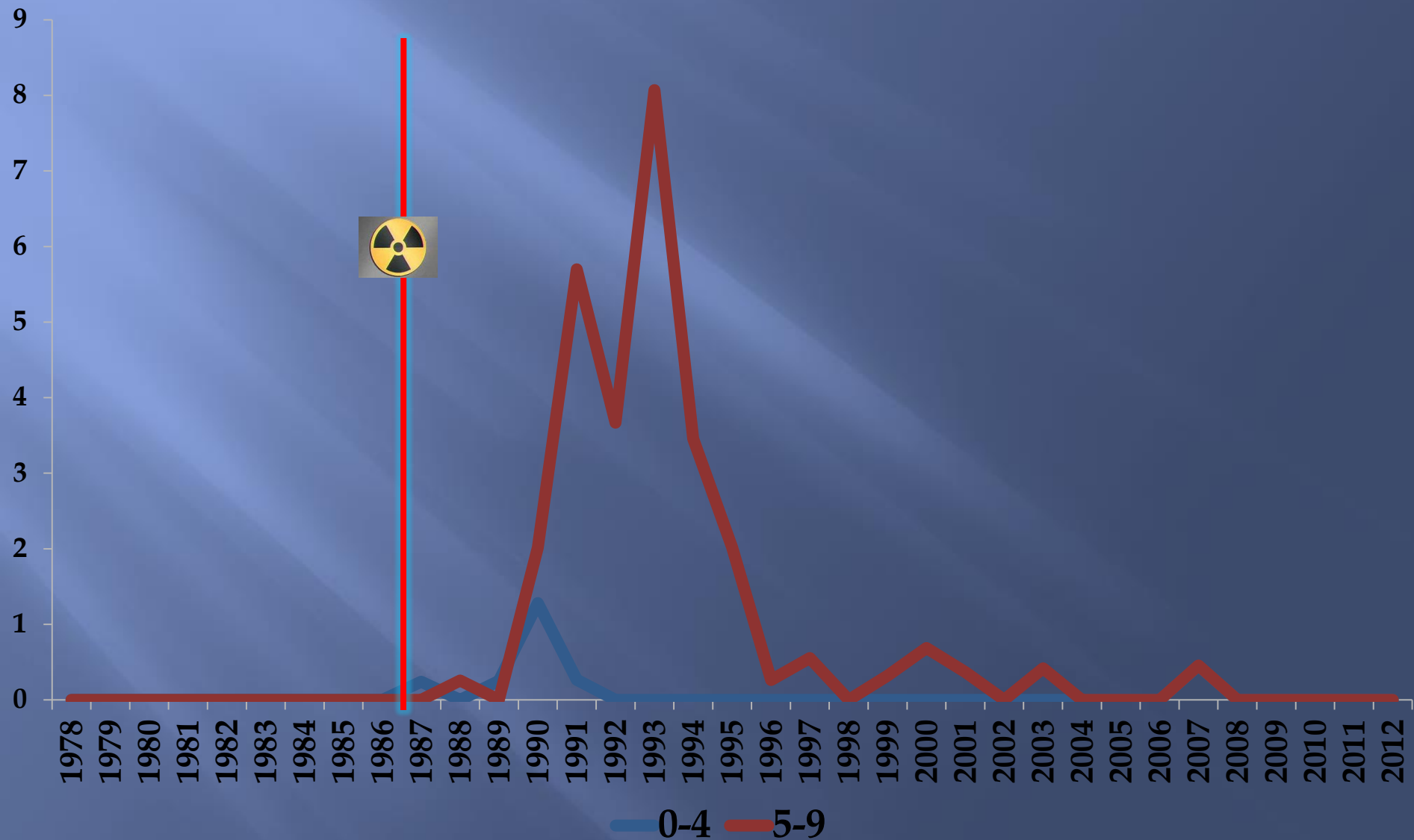
Thyroid Cancer Incidence



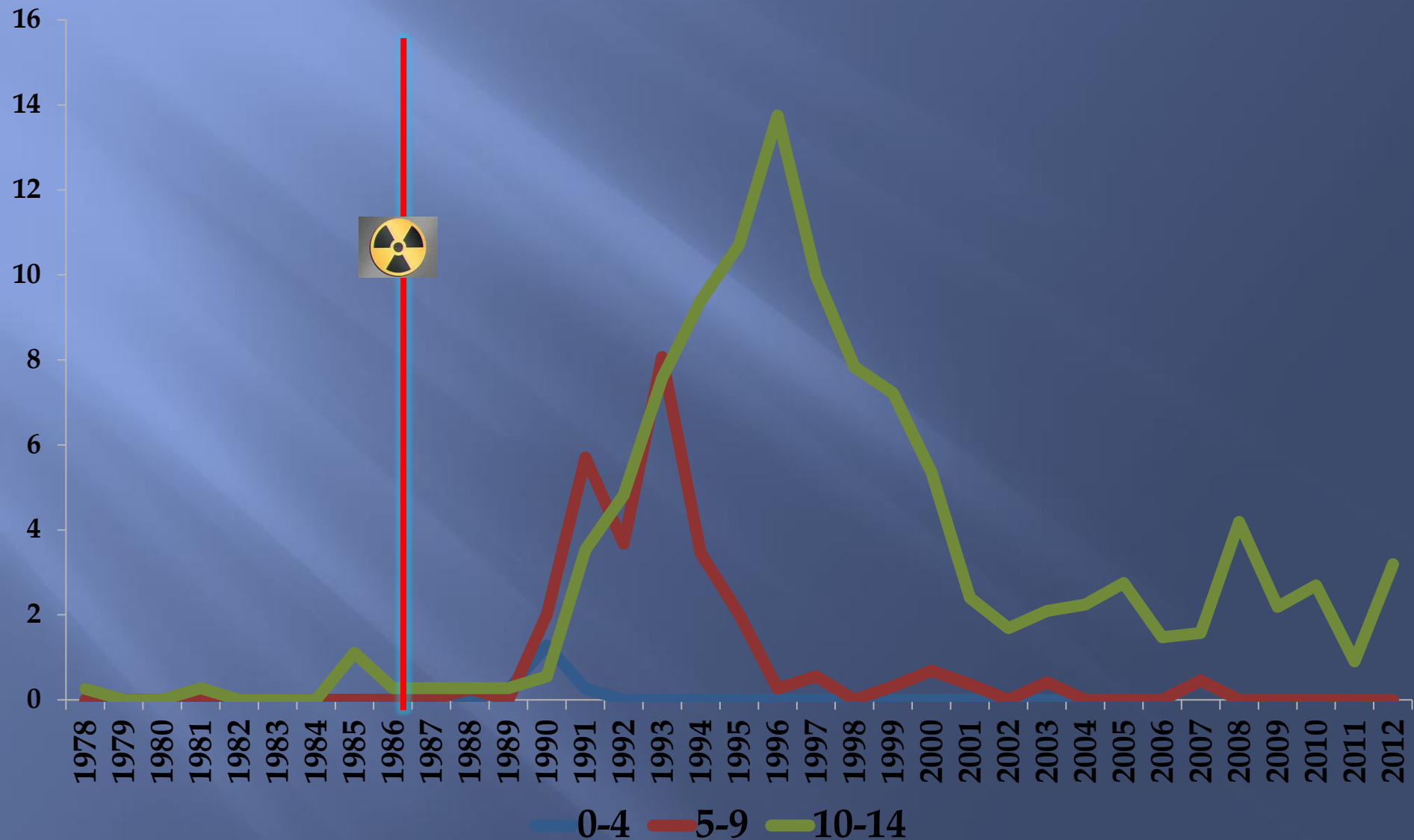
Incidence rates of thyroid cancer by age groups (0-19) female (per 100 000)



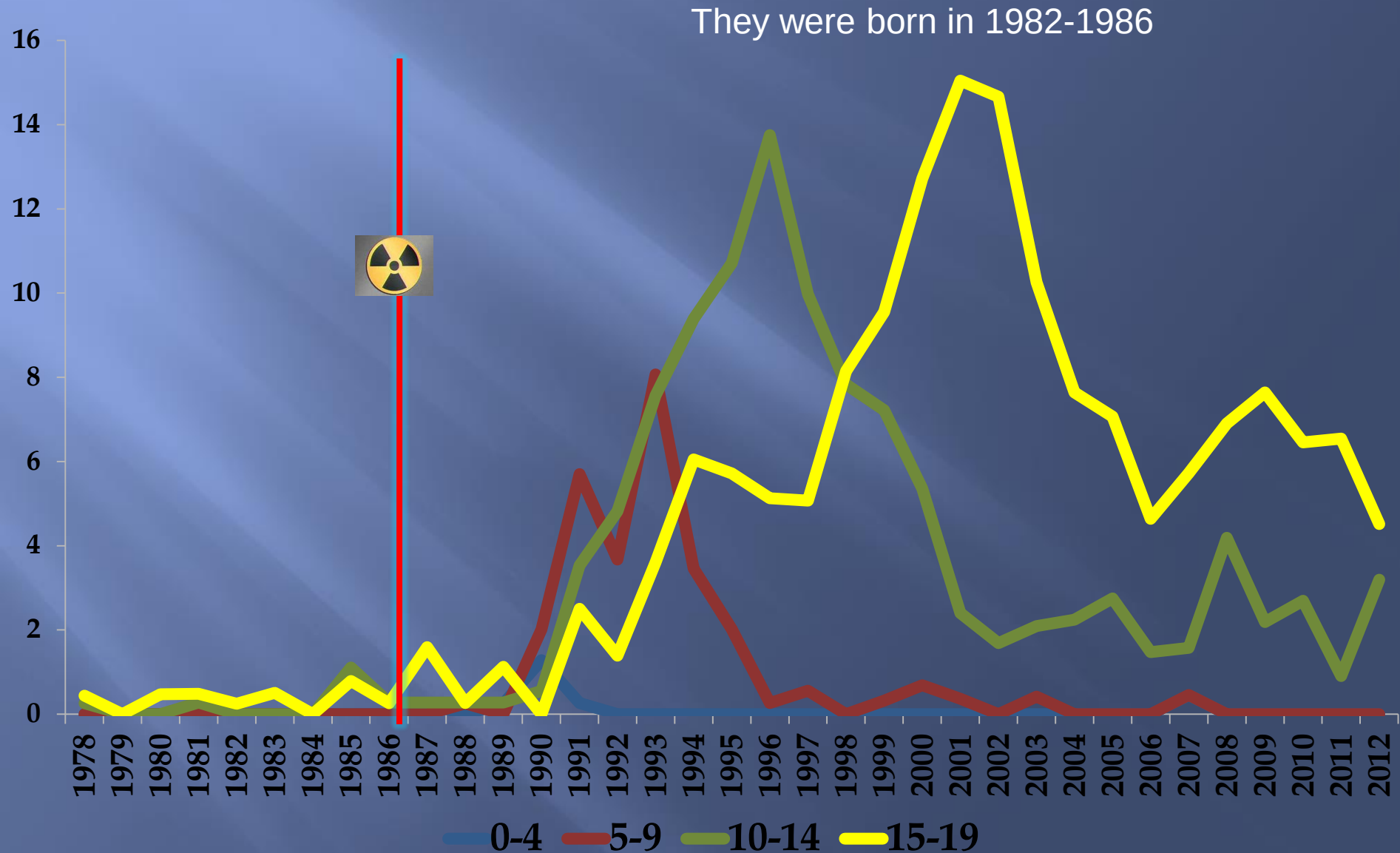
Incidence rates of thyroid cancer by age groups (0-19) female (per 100 000)



Incidence rates of thyroid cancer by age groups (0-19) female (per 100 000)

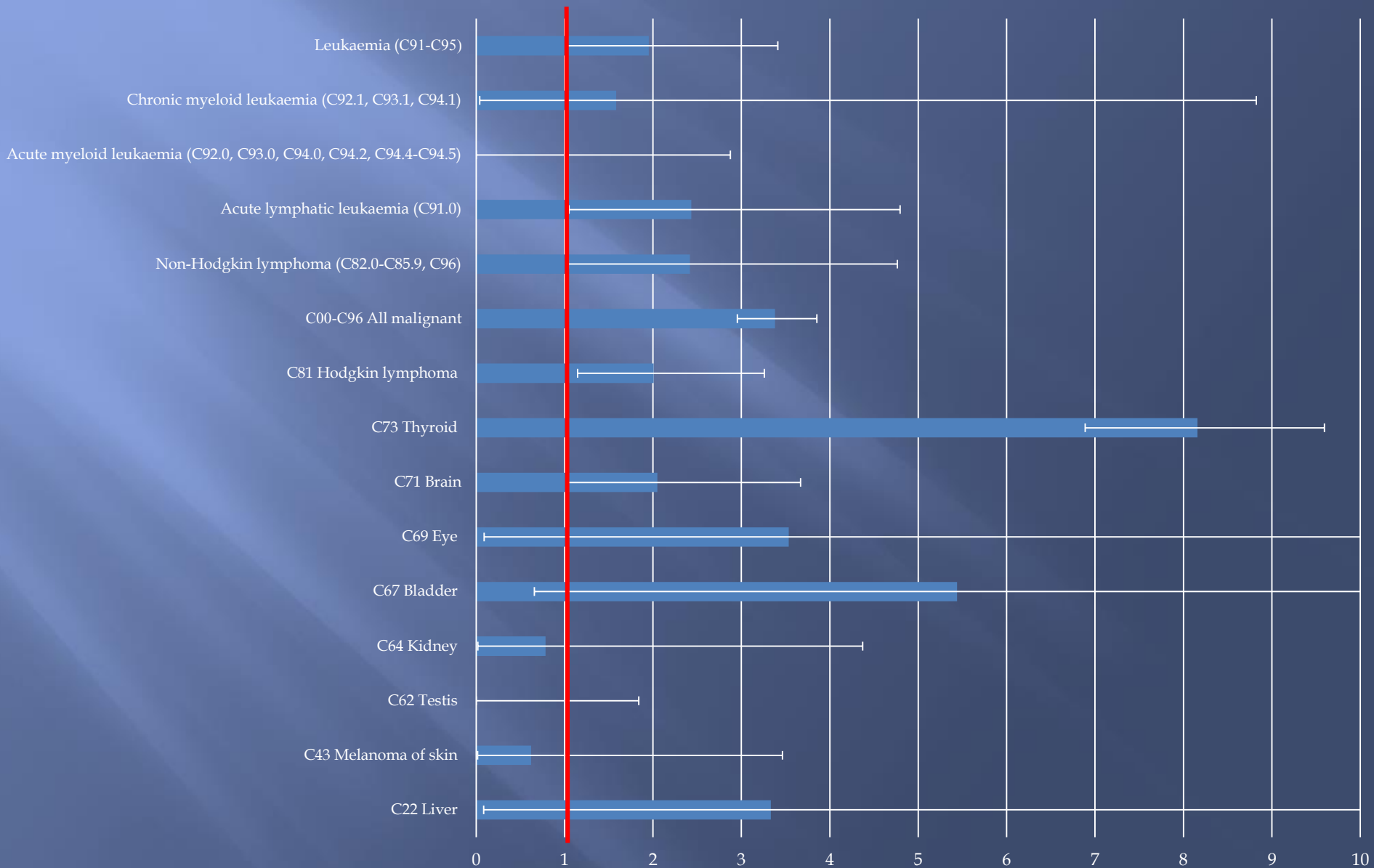


Incidence rates of thyroid cancer by age groups (0-19) females (per 100 000)



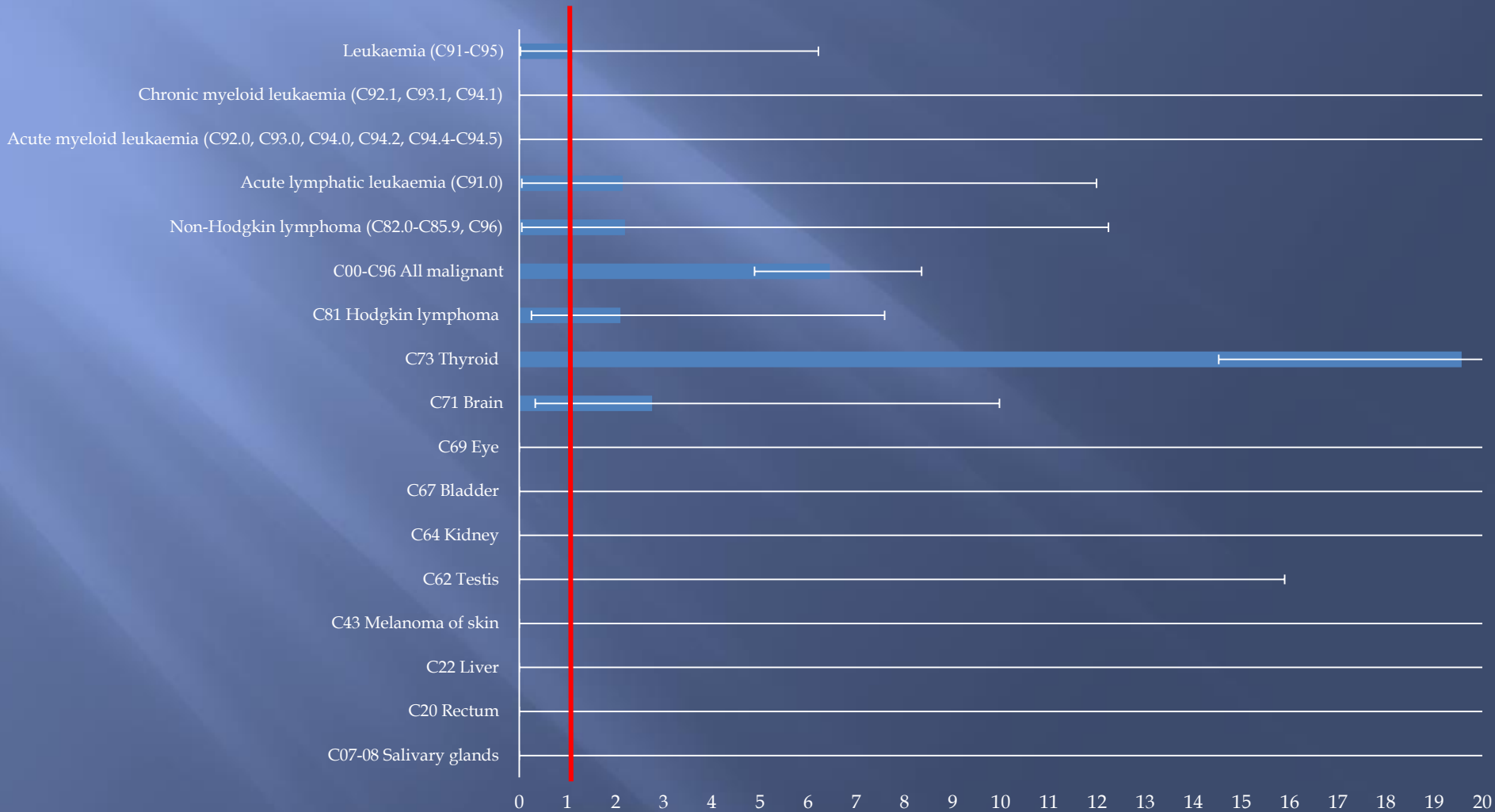
SIR

0-4 years at time of the accident



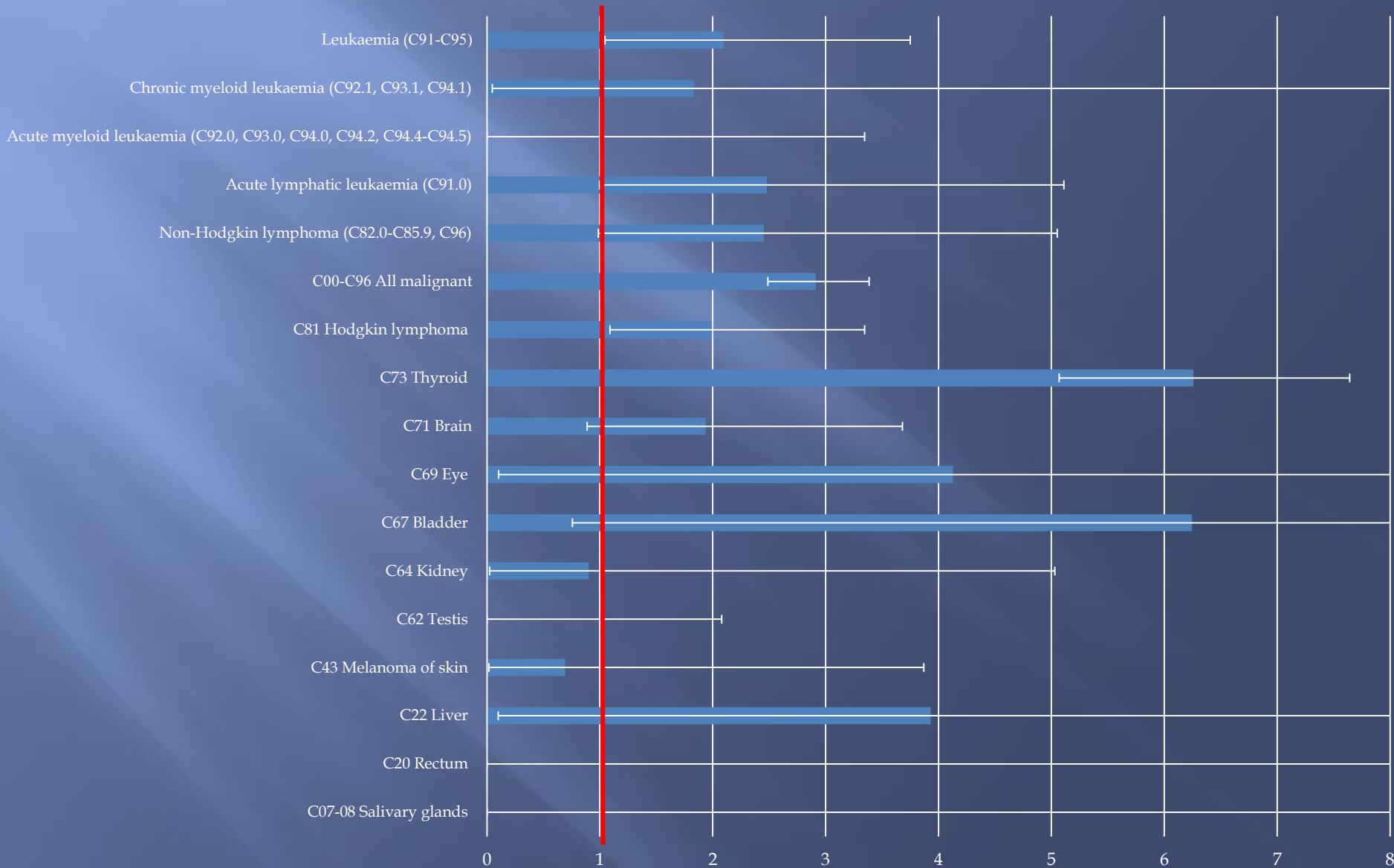
SIR Evaquees

0-4 years at time of the accident

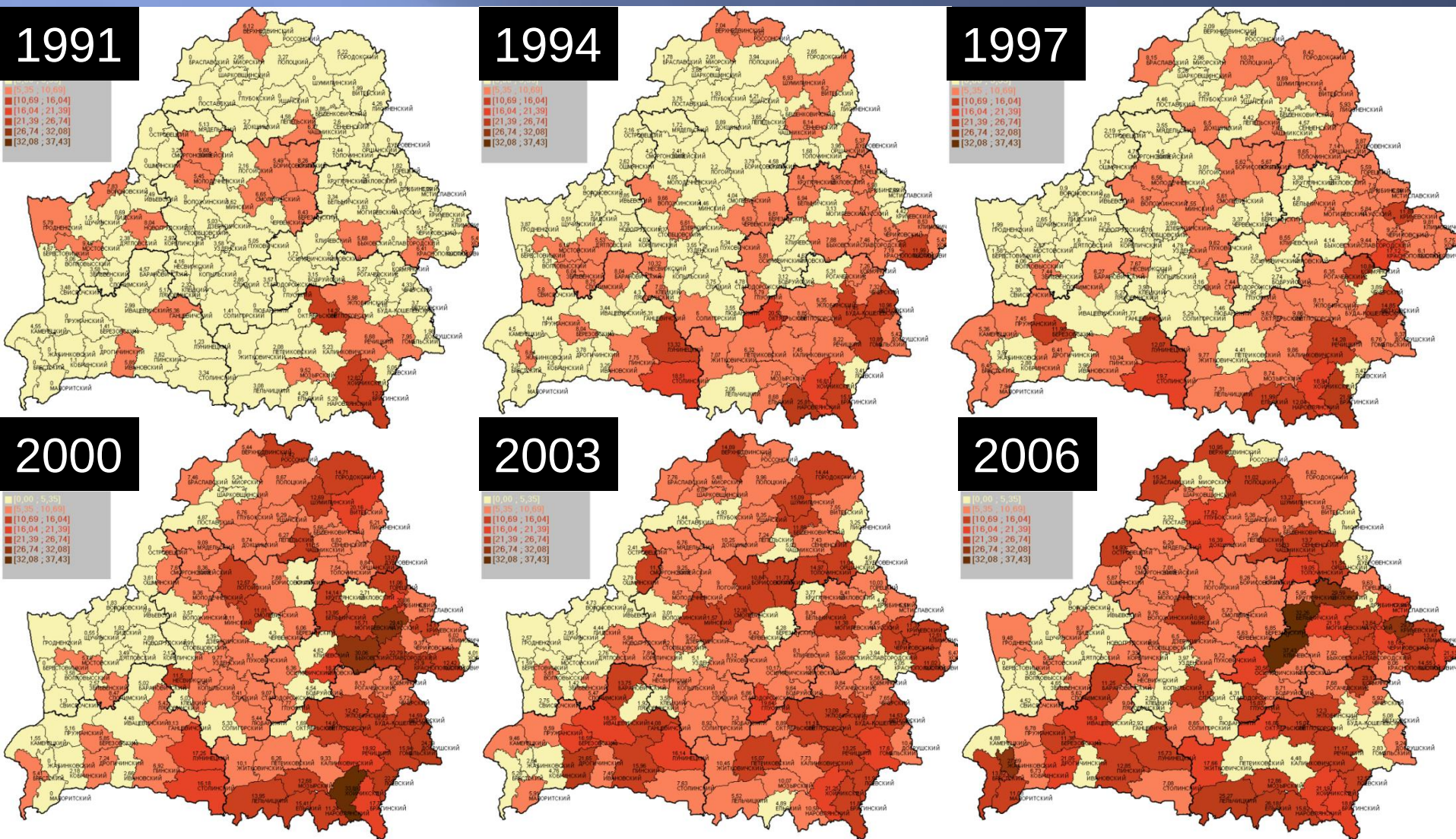


SIR Residents

0-4 years at time of the accident

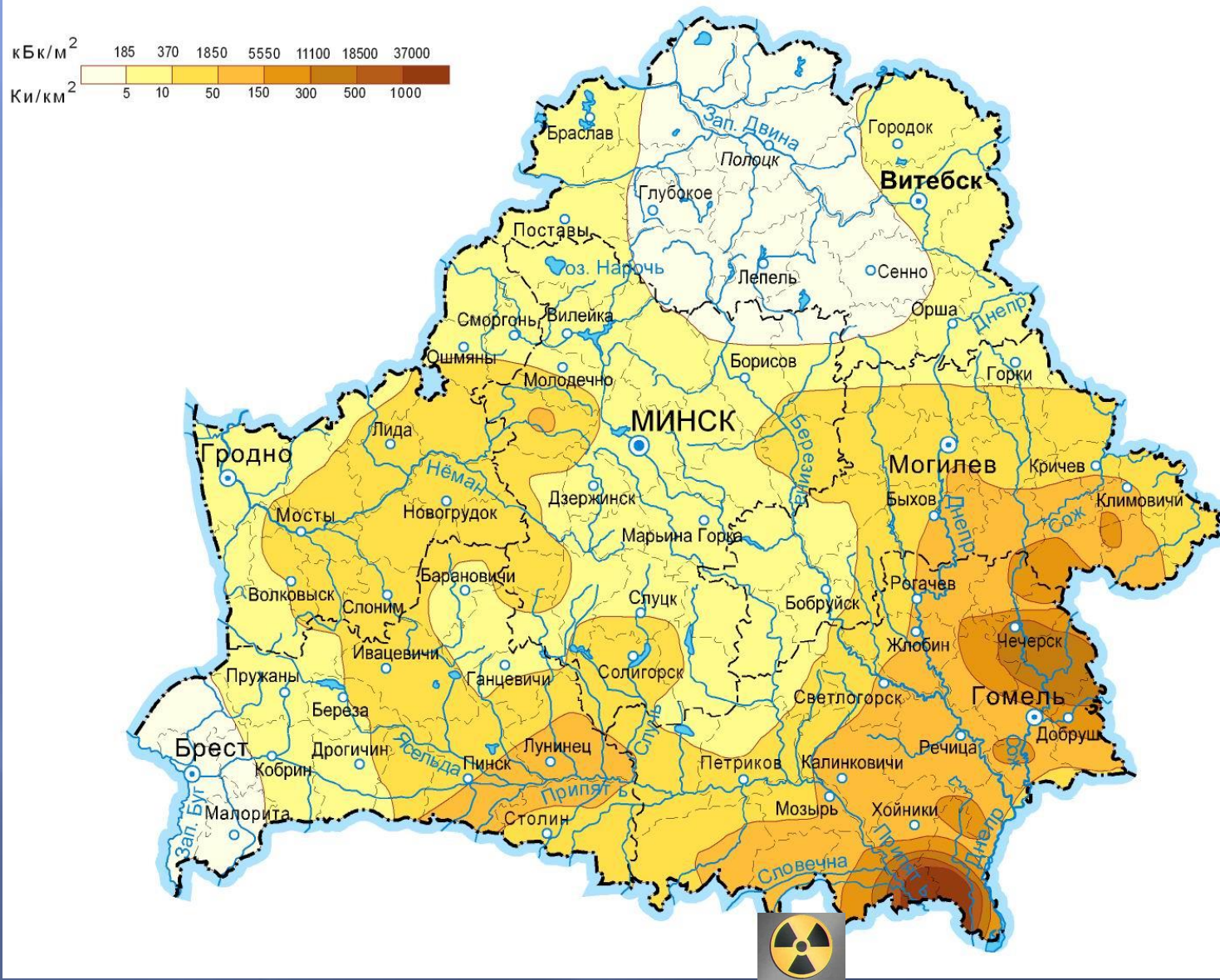


Thyroid Cancer Incidence

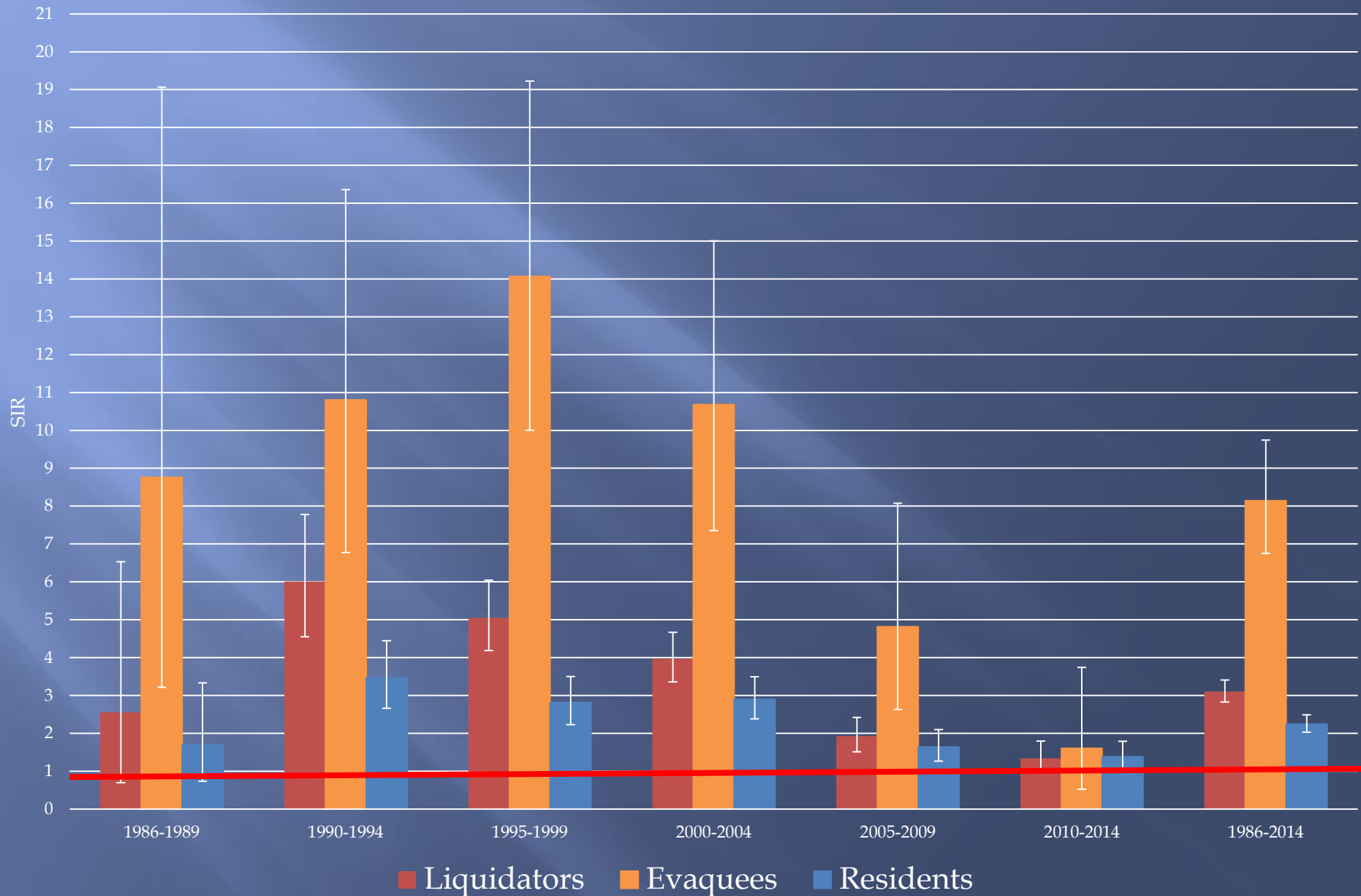


The contamination of the territory of Belarus with iodine-131 (reconstruction) estimated 10 May, 1986

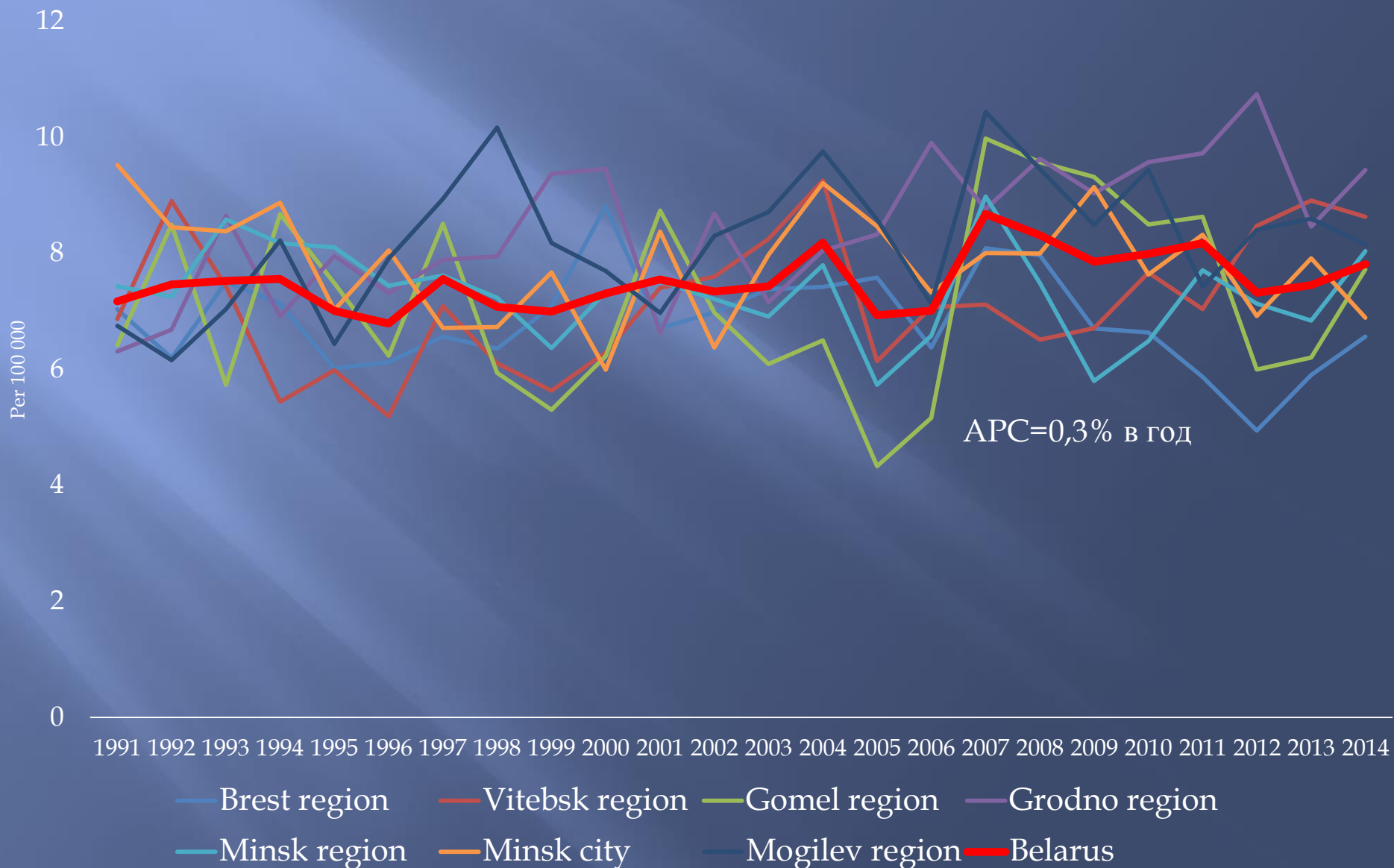
Условные обозначения



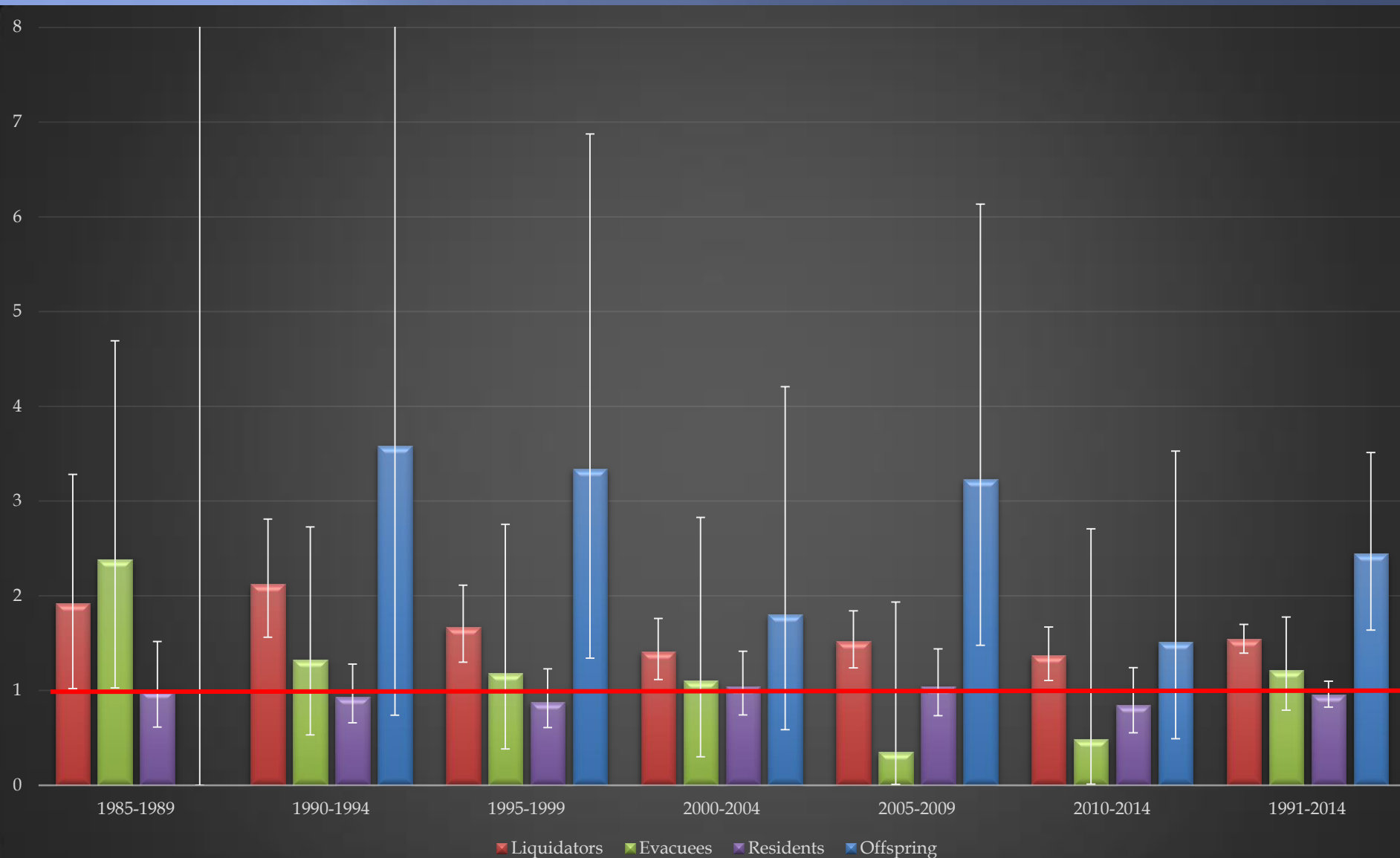
Thyroid Cancer SIR



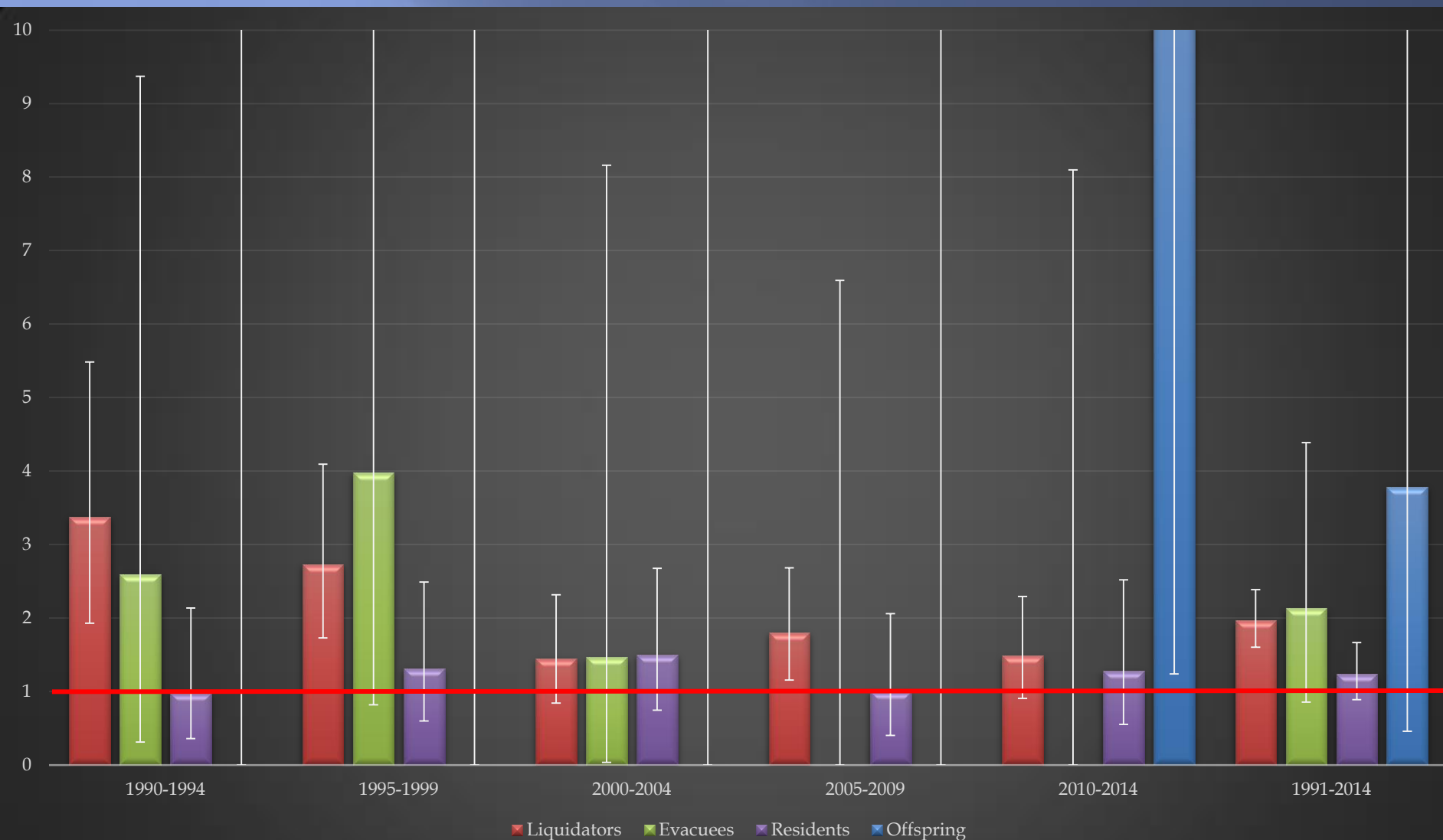
LEUKEMIA ASR (C91-C95) IN BELARUS



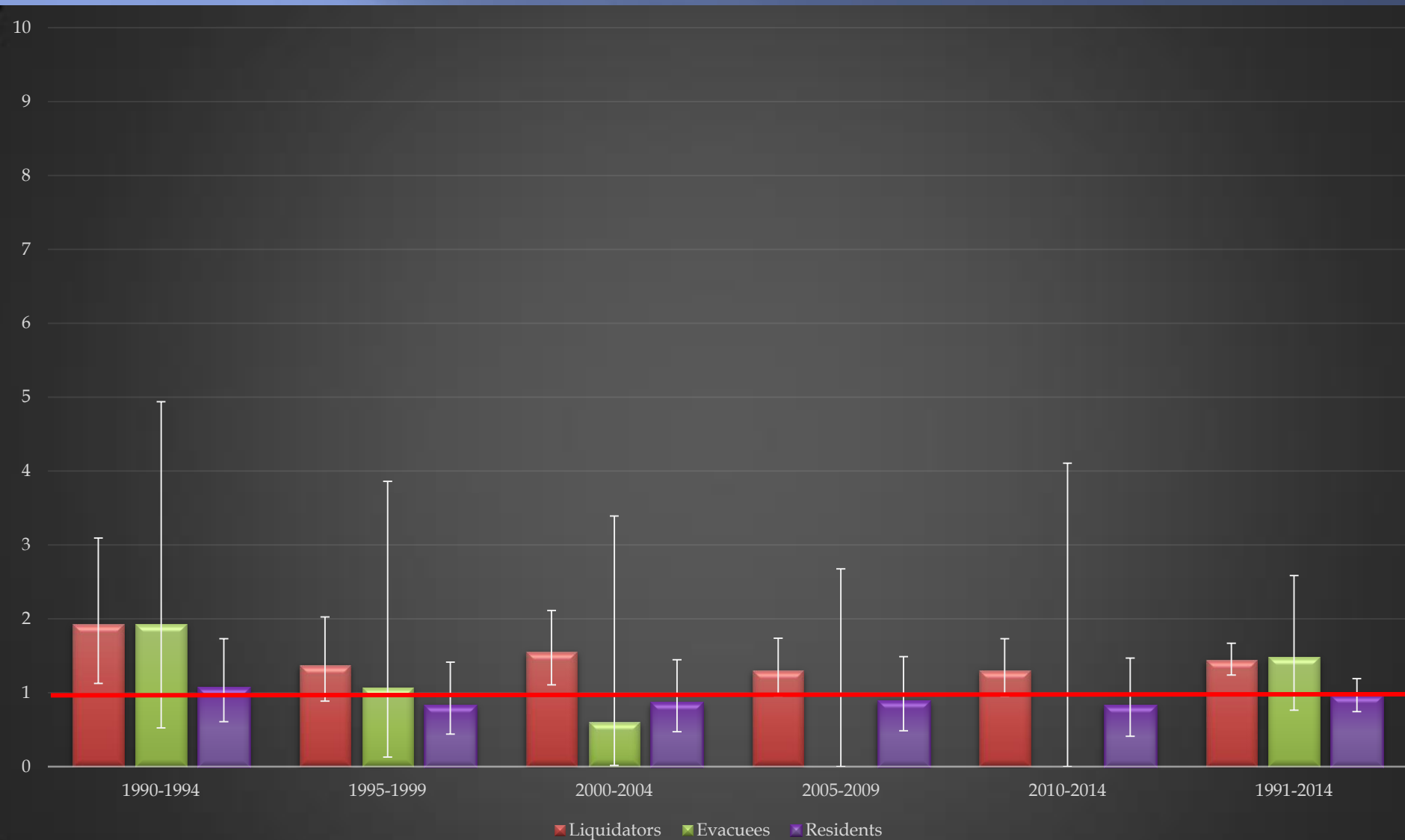
SIR leukemia (C91-C95) of affected people



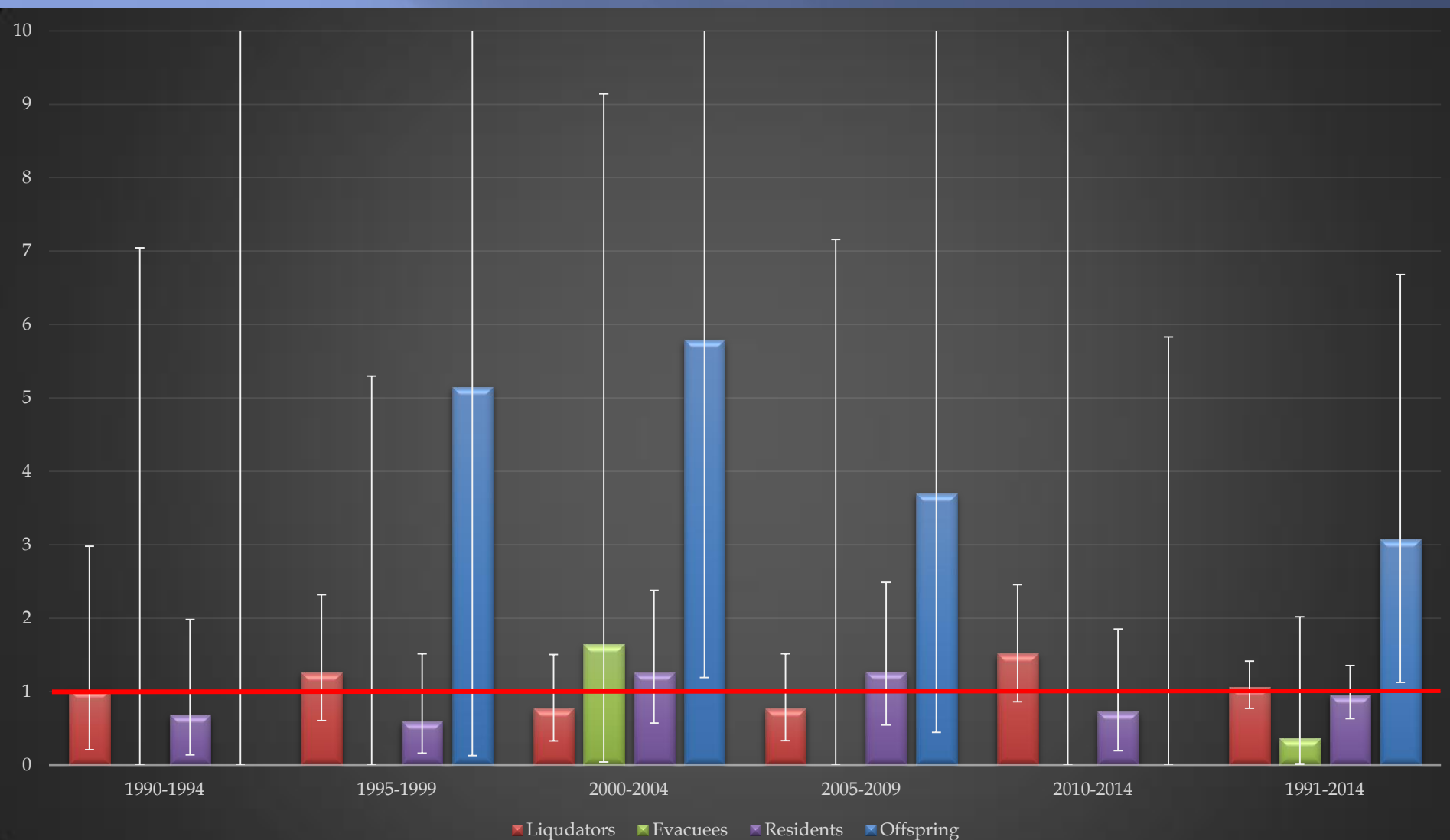
SIR Chronic myelocytic leukemia (C92.1, C93.1, C94.1) of affected people



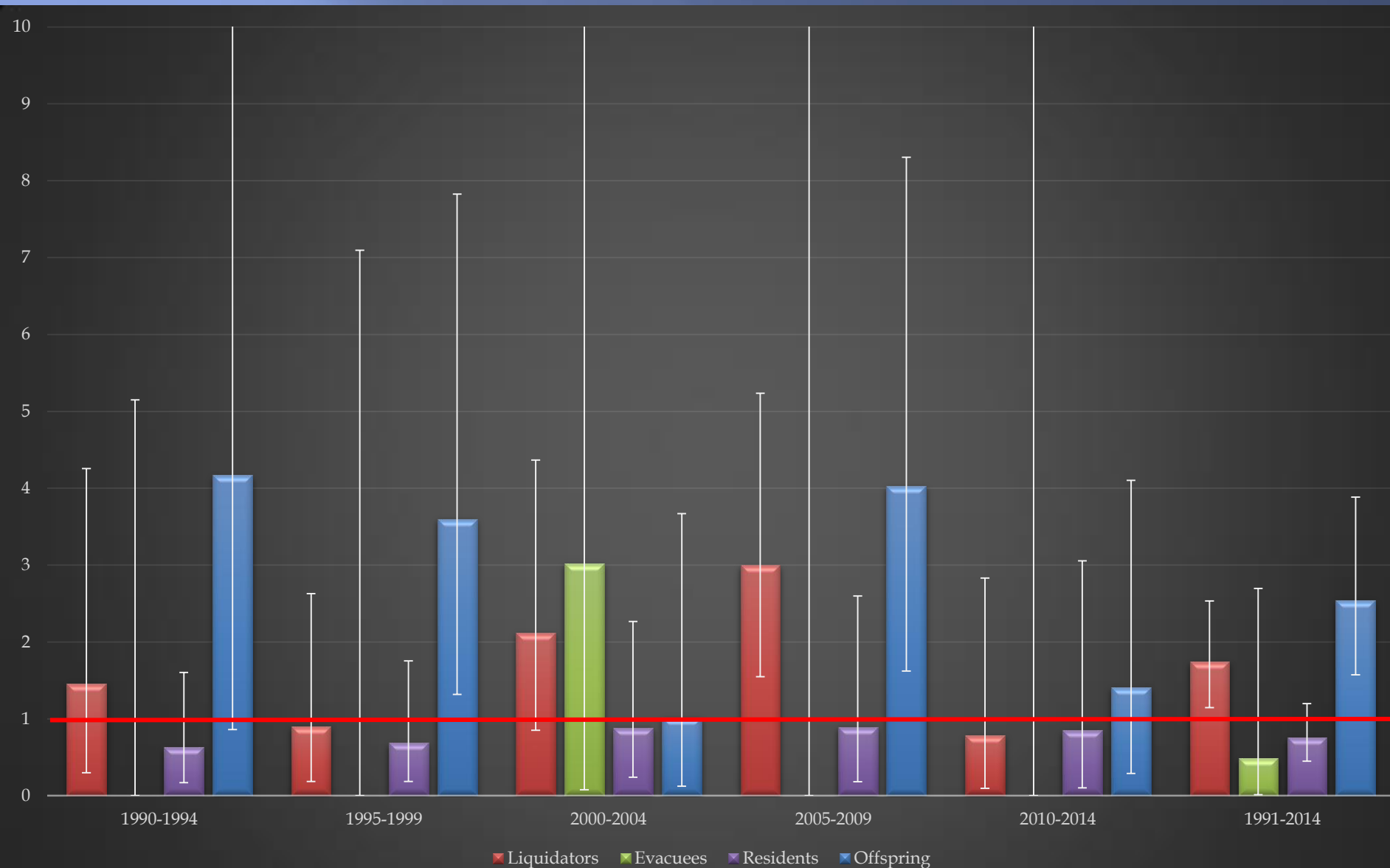
SIR Chronic lymphocytic leukemia (C91.1)



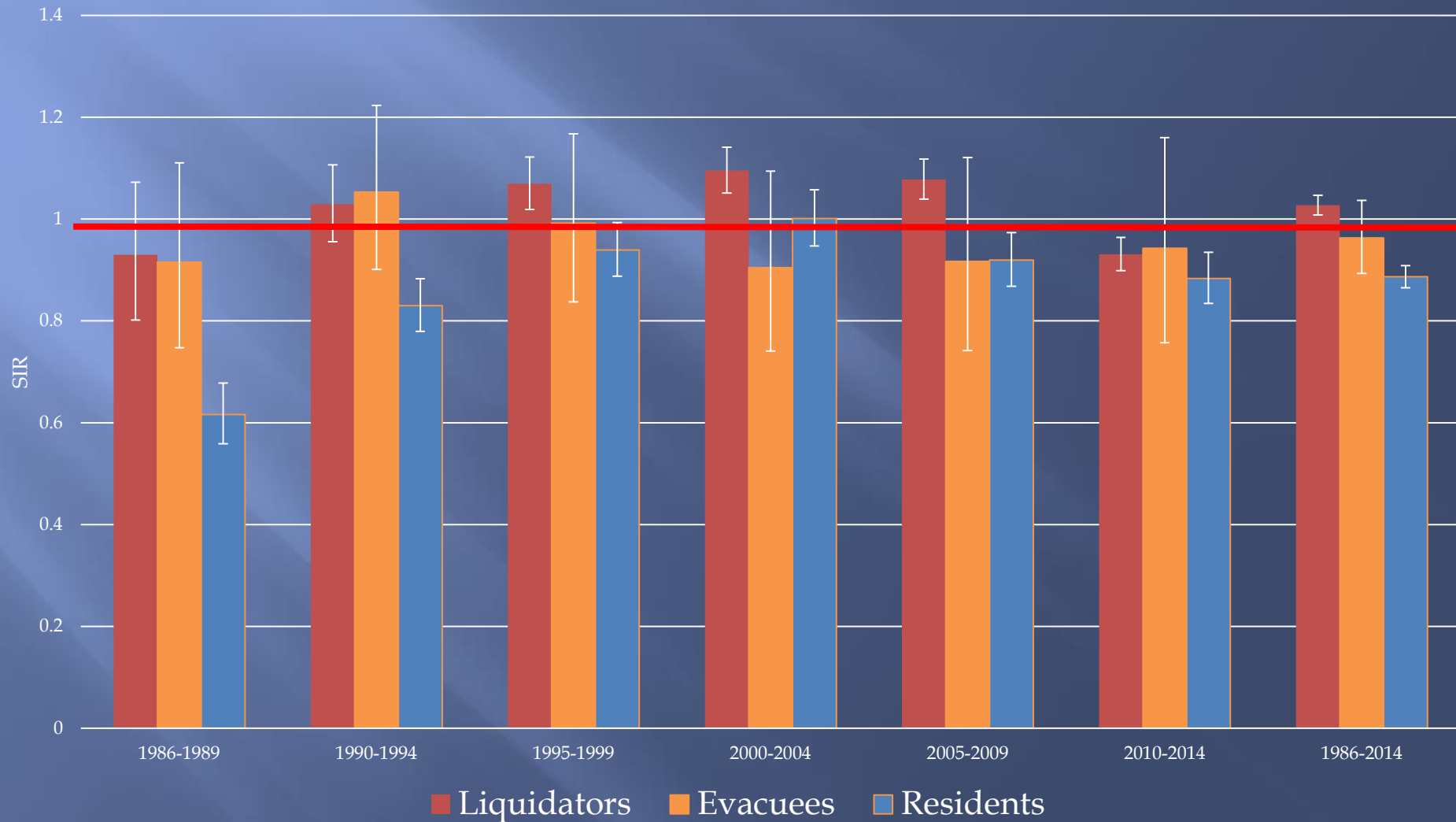
SIR Acute myeloblastic leukemia (C92.0, C93.0, C94.0, C94.2, C94.4-C94.5)



SIR Acute lymphoblastic leukemia (C91.0)



SIR of all sites cancer



A photograph of a modern, multi-story white building with numerous blue-tinted windows. The building is set back from a paved area by a green lawn and some low-lying shrubs. In the foreground, there are bare, reddish-brown branches of a tree or bush, some with small, dried leaves. A few people are visible walking on a path in the middle ground. The sky is overcast and grey. The text "THANK YOU FOR YOUR ATTENTION" is overlaid in large, bold, yellow capital letters across the center of the image.

**THANK YOU FOR
YOUR ATTENTION**