



# SURVIVAL IN PEDIATRIC CANCER

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**Romania 2010-2017**

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**Report of the National Registry of  
Pediatric Onco-Hematology**

# PEDIATRIC CANCER IN ROMANIA



**5065 cases**  
**(01.01.2010 -31.12. 2021)**



**422 new cases/year**



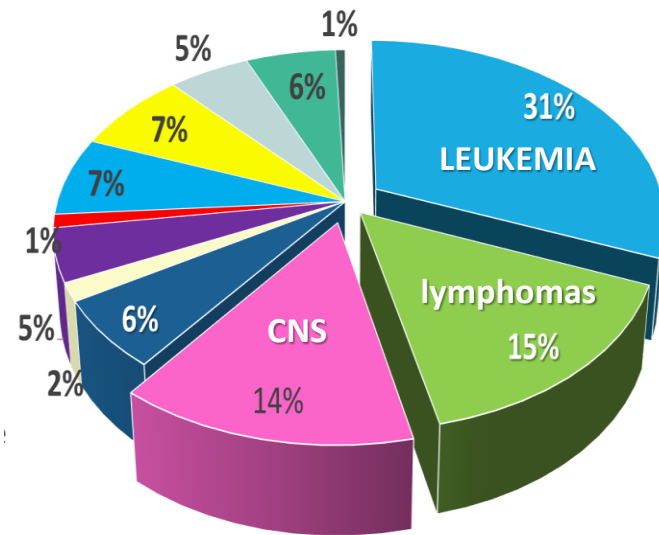
**1 out of 4 cases treated**  
**in  $\geq 2$  OHP centers**



**4 girls/5 boys**



**> 1/3 of the cases**  
**appear before age of 5**

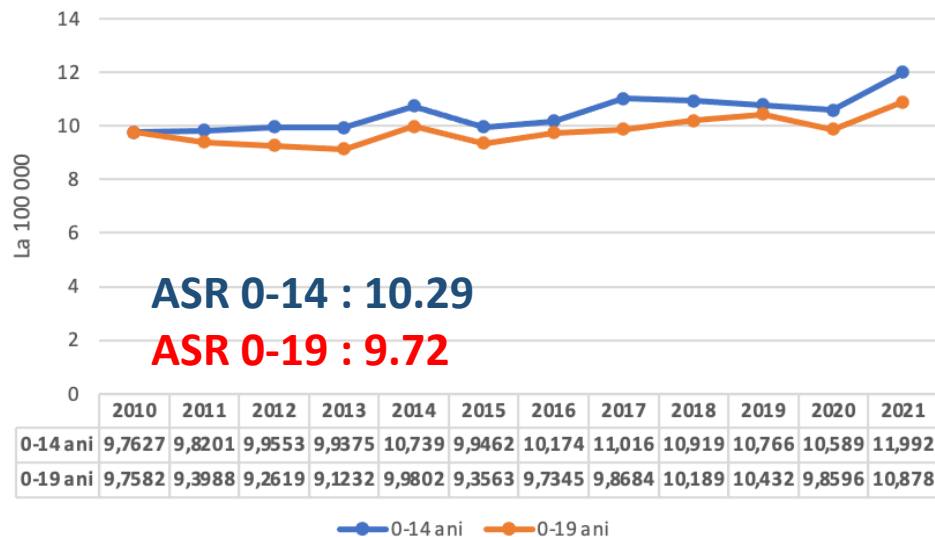


**first 3 locations  $\geq$**   
**60% of cases**

# **National Register of Pediatric Onco-Hematology RNOHP**

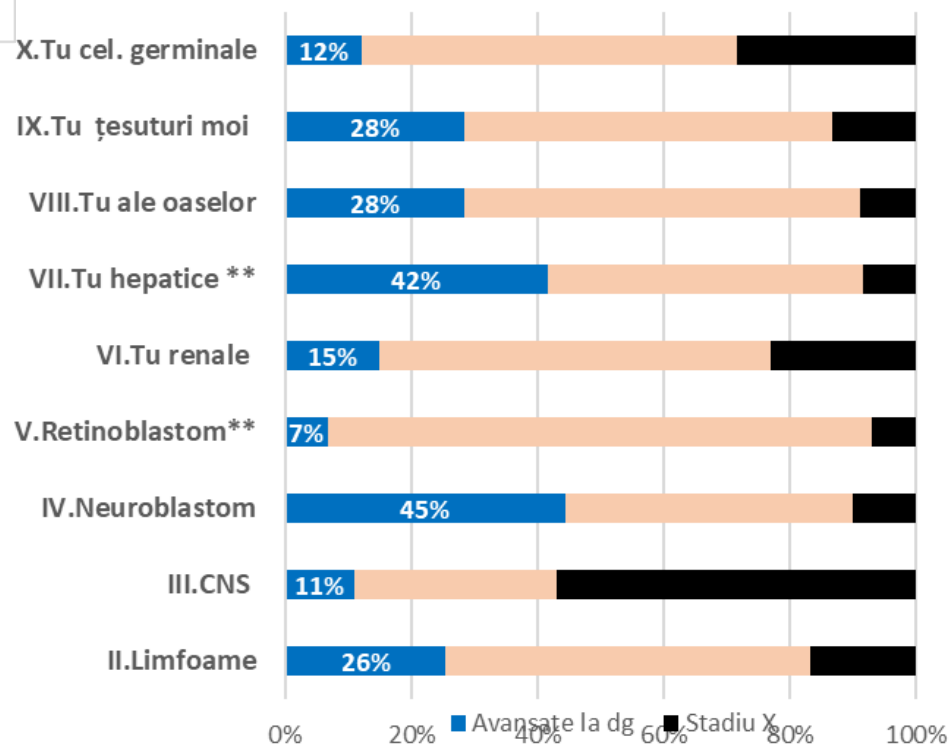
- ❑ founded and directed by the Romanian Society of Pediatric Onco-Hematology since 2010 (since 2018 supported by the partnership with Daruieste Aripa Association)**
- ❑ voluntary participation of all the centers of the national pediatric onco-hematology network**
- ❑ data collected, validated and processed according to the standards recommended by IACR/ENCR (affiliation since 2018)**
- ❑ cases are notified online on a dedicated, secure platform and customized (since 2019) for specific pediatric oncology requirements**
- ❑ audited by ENCR/JRC (European Network of Cancer Registries / Joint Research Center - EC) in 2021**
- ❑ participation in international data-calls and studies: ECIS (2022), CONCORD4 (2023) BENCHISTA (2021-2023)**
- ❑ financed exclusively from non-governmental sources**

# RNOHP – Key Data



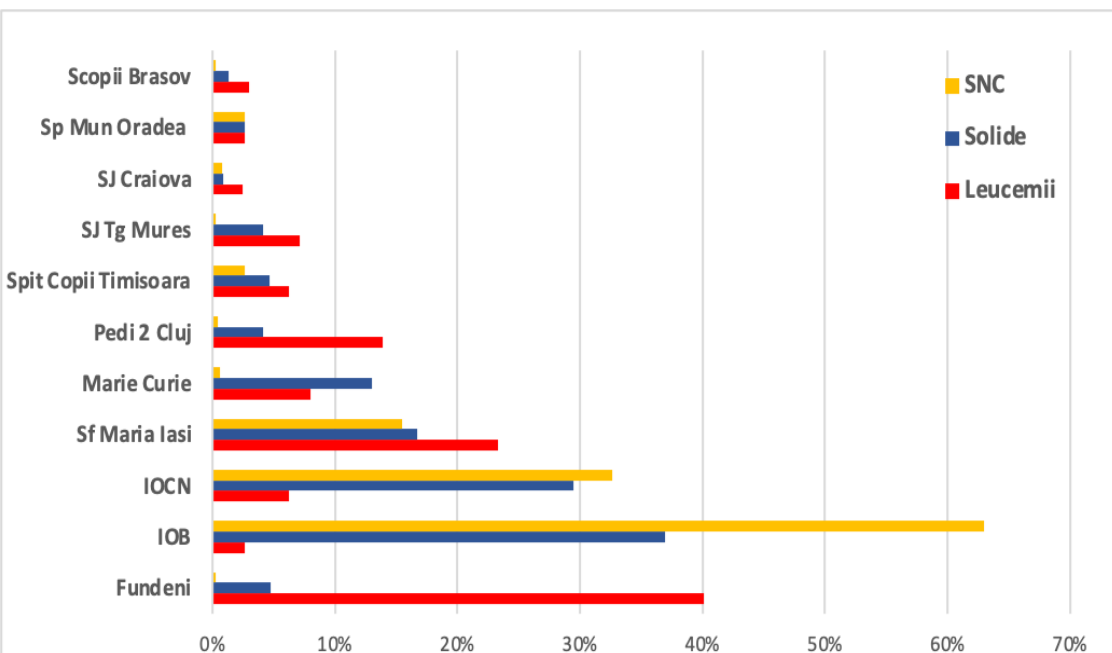
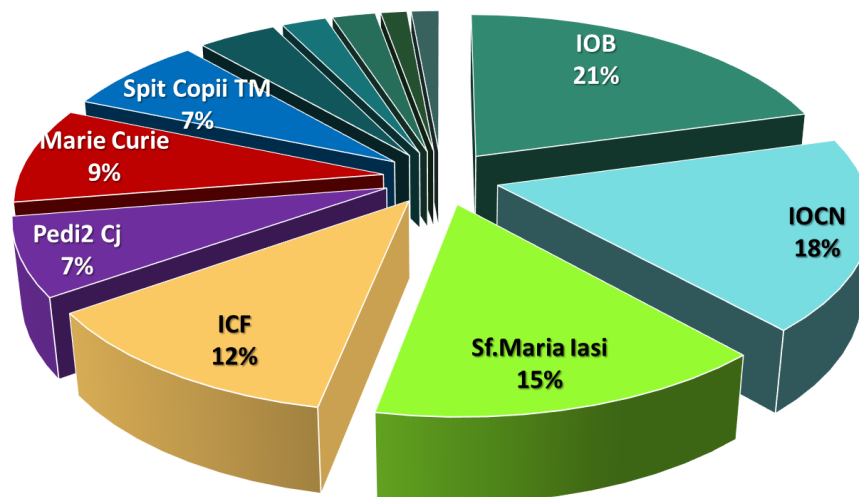
**Metastatic cases \_ at diagnosis** ( all locations excl. Leukemia) - **30.5%** ( 2018-2021 )

**Stable incidence rates over time** (quality indicator)



# RNOHP – Key Data

**90% of cases get treatment in one of the 4 big medical centers: Bucharest, Cluj, Iasi, Timisoara**



**A "specialization,, trend among centers:**

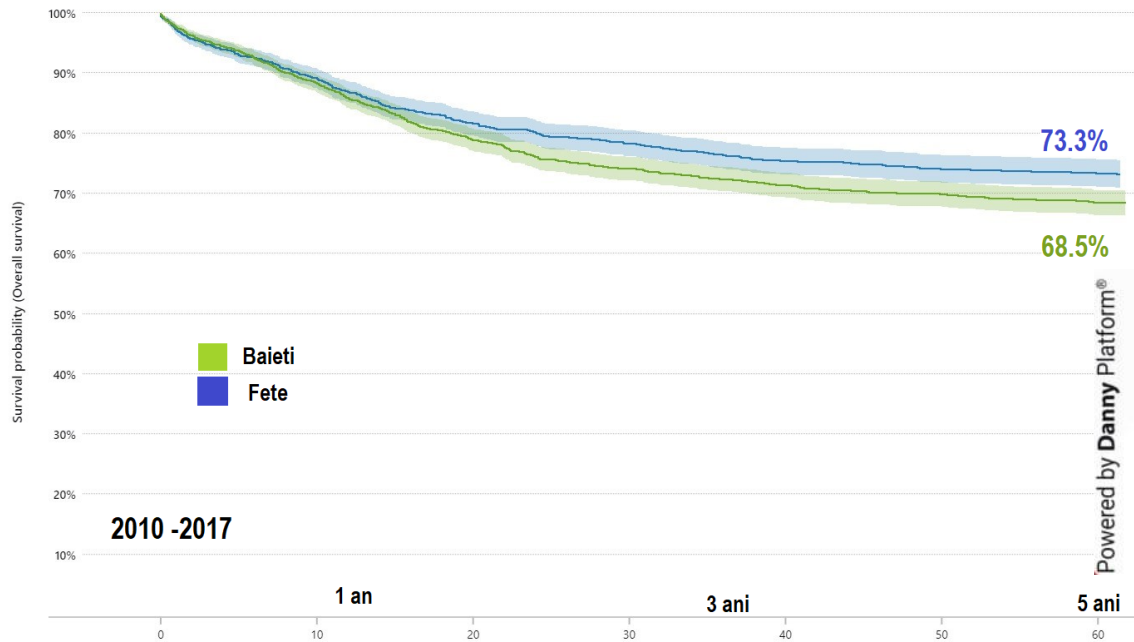
**hematology - vs solid tumours**

- 40% of all leukemias arrive at ICF
- 60% of all CNS tumors reach the IOB

# SECOND SURVIVAL STUDY ON NATIONAL DATA

- ❑ The first study - in 2019 with JRC-EC technical support , cases diagnosed from 2010-2013
- ❑ Current study - in 2023 for 3328 cases of the RNOHP database diagnosed from 01.01.2010 to 31.12.2017
- ❑ Verification of “death“ information - DEPABD data on vital status on 31.12.2022
- ❑ Data processing - with the support of the Danny Platform, an analytics platform developed by SQILLINE BUSINESS SOLUTIONS OOD, Bulgaria
- ❑ Overall survival was analyzed using the Kaplan – Meier method
- ❑ Survival analyzed for the entire 2010-2017 period and by incidence cohorts (cases diagnosed in 2010-2013 survival vs cases diagnosed in 2014-2017 )
- ❑ In order to increase the degree of certainty ( statistical significance ), the analysis units with a too small number of cases ( < 50 ) were not included
- ❑ Also, the variations with very small amplitude (< 3%) are not not considered significant

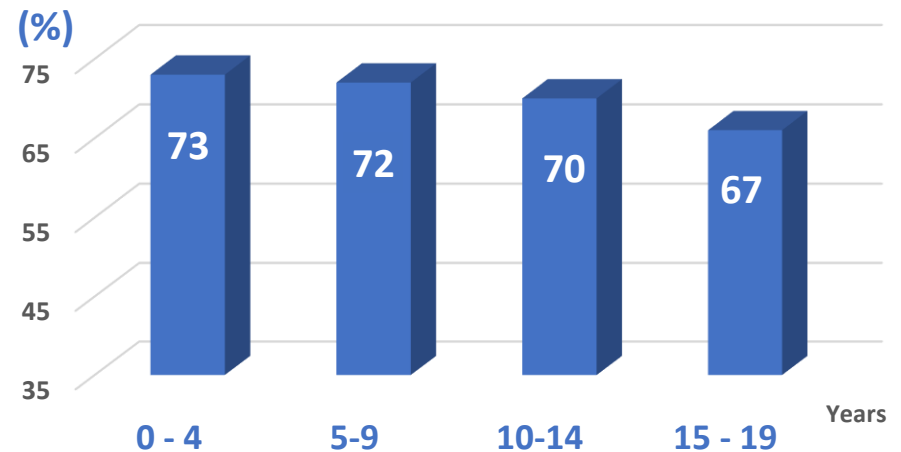
# SURVIVAL - main results (I)



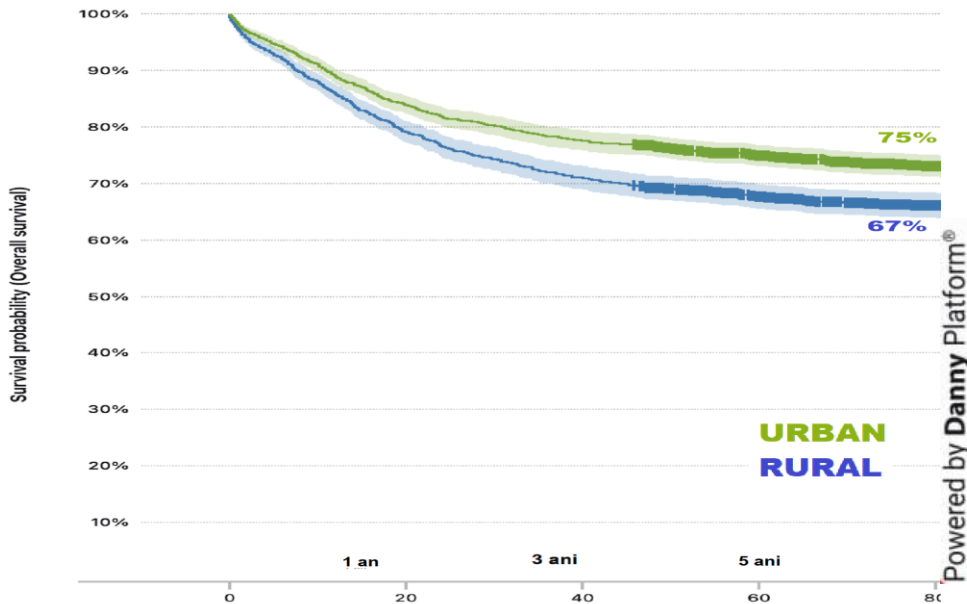
**Average survival at 5 years (2010-2017):**

- **72% (0-14 years)**
- **70% (0-19 years)**

**Survival at 5 years  
by age groups,  
2010-2017**

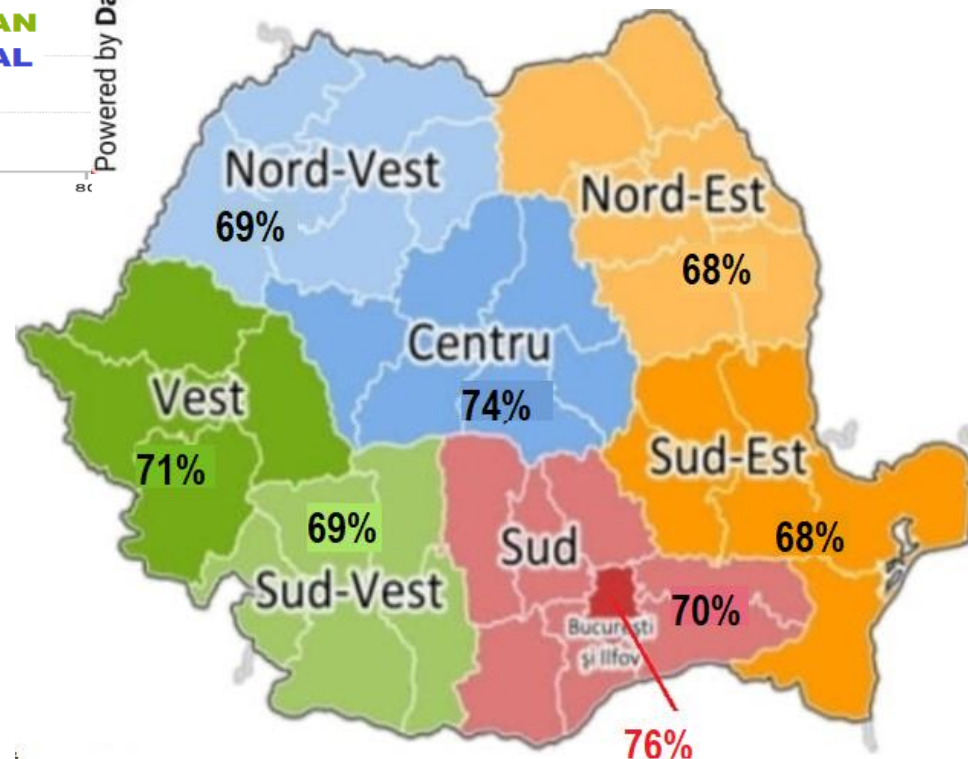


# SURVIVAL - main results ( II )

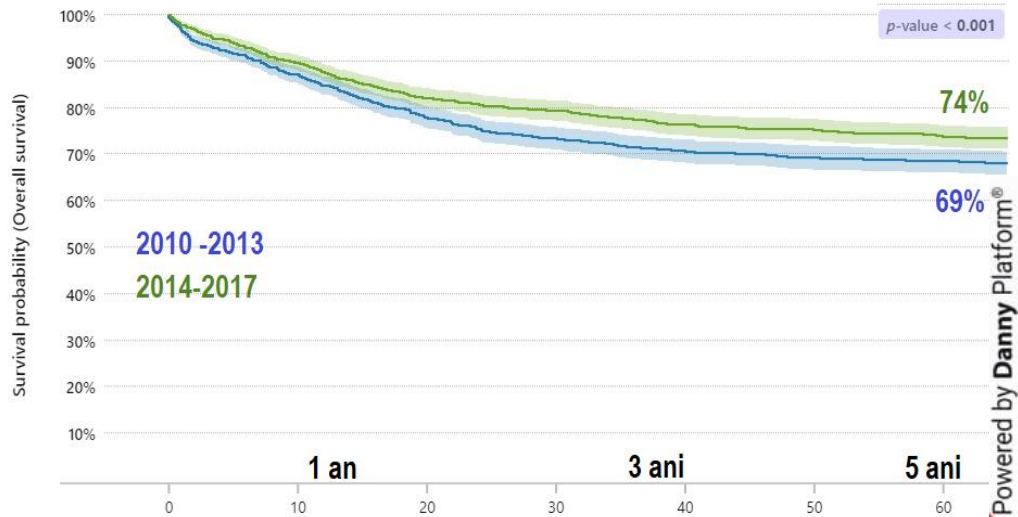


Survival is significantly higher for children dwelling in the urban area compared to those in the rural area : **75% vs 67%**

Survival differences according to the region of residence - significant gradient between the region with the highest survival rate (BIF -76%) and the regions with the lowest rate (NE and SE - 68%)

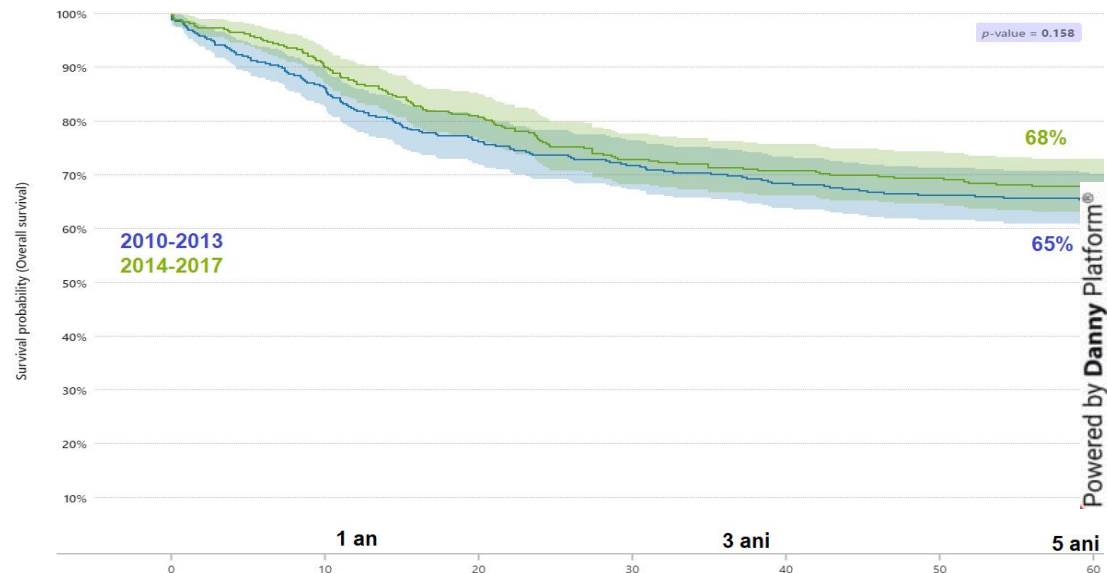


# SURVIVAL - main DEVELOPMENTS



Significant increase in the 5 year overall survival for 0-14 years (children) : from 69% to 74%

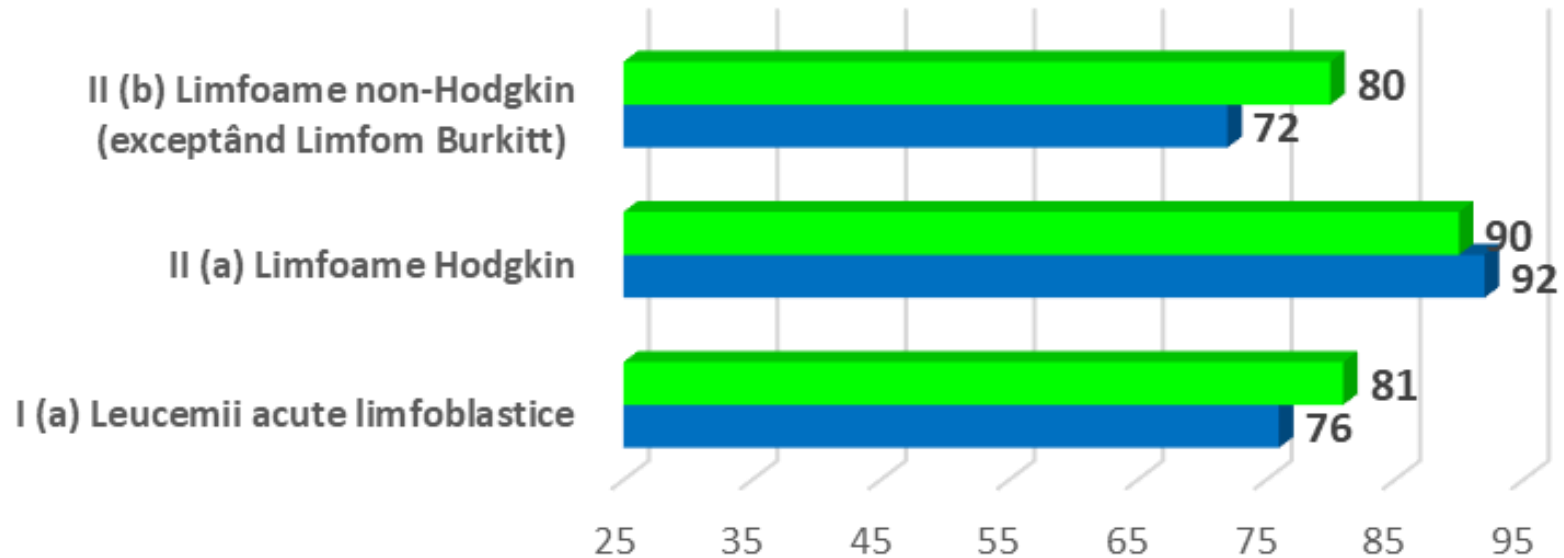
The increase in 5-year overall survival for teenagers (aged 15-19) is sensibly lower : from 65% to 68%



# MALIGNANT HEMOPATHIES

0-14 ani

■ 2014-2017 ■ 2010-2013

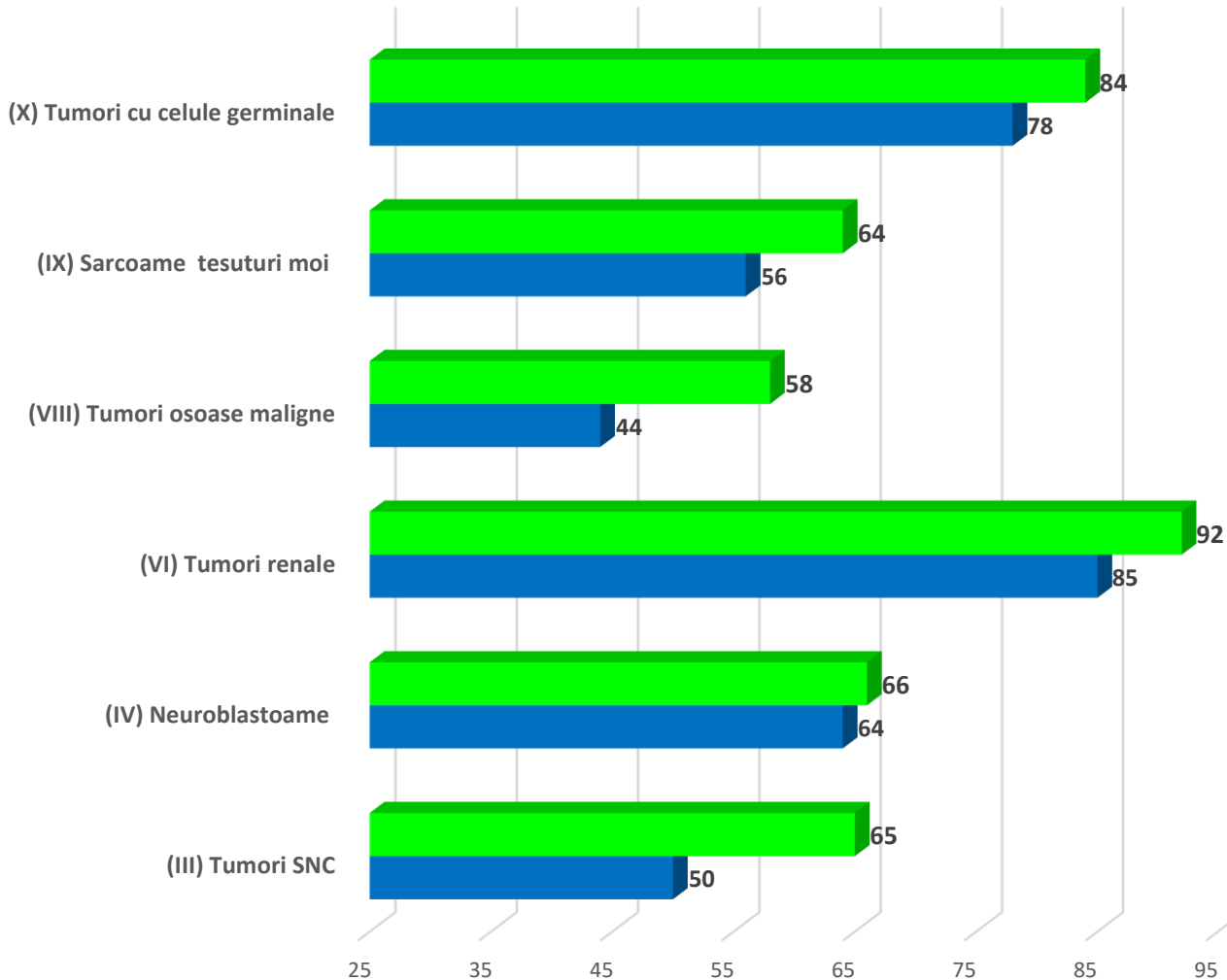


- ❑ Significant increase in survival in the most frequent form of leukemia - **acute lymphoblastic leukemia**
- ❑ Significant increase in survival for **non-Hodgkin's lymphomas** (ex. L. Burkitt) (even if case number is low)
- ❑ Maintaining high survival rates in **Hodgkin's Lymphomas**

# SOLID TUMOURS

0-14 YEARS

■ 2014-2017 ■ 2010-2013



□ Significant increase in survival in **most cancer types** with solid tumors

□ Major increase in survival in tumors with poor prognosis in the previous interval : **brain, bone, soft tissue tumors**

□ Unmodified survival in **neuroblastoma**

# CONCLUSIONS

- ❑ Survival at 5 years (in the 0-14 years group) in Romania stands at 72% (2010-2017), compared to the EU average of 81% and 71% in Eastern Europe (according to EURO CARE 6).
- ❑ The increase in survival in Romania is very accelerated, rising from 69% to 74% for small consecutive incidence cohorts (2010-13 to 2014-17).
- ❑ Chances of survival for children (0-14 years) are better than for adolescents and young people (15-19), highlighting the need for dedicated services (PNCC and SIOPE objective).
- ❑ Survival rates differ significantly depending on the area/region of residence of the case, with an 8% difference between urban and rural areas, as well as between BIF and NE/SE regions.
- ❑ Survival rates increased significantly in 2014-2017 compared to 2010-2013 for most types of tumors, especially in the 0-14 age group, including – hemopathies (>5% ALL, NHL) and solid tumours (>5% in soft tissues, renal, germinal; >10% in CNS, bone).