



MO
U Masaryk Memorial
Cancer Institute

OEI
CLINICAL
Cancer Centre

European Reference Network
for rare or low prevalence complex diseases
Network
Genetic Tumour Risk Syndromes (GTRIS)

EURACAN

BBMRI.cz
Biobanking and BioMolecular resources Research Infrastructure
Czech Republic

DigiCore
Digital Institute for Cancer Outcomes Research

ESMO DESIGNATED CENTRES
of integrated oncology and palliative care services

State of the art of comprehensive cancer care delivery from the perspective of the MMCI

Marek Svoboda

The Czech Republic

Area: 15th EU(/27)

Population: 10,7 million (2,4 % EU)

GDP (per capita) 2021

26 378 USD / 23 232 EUR

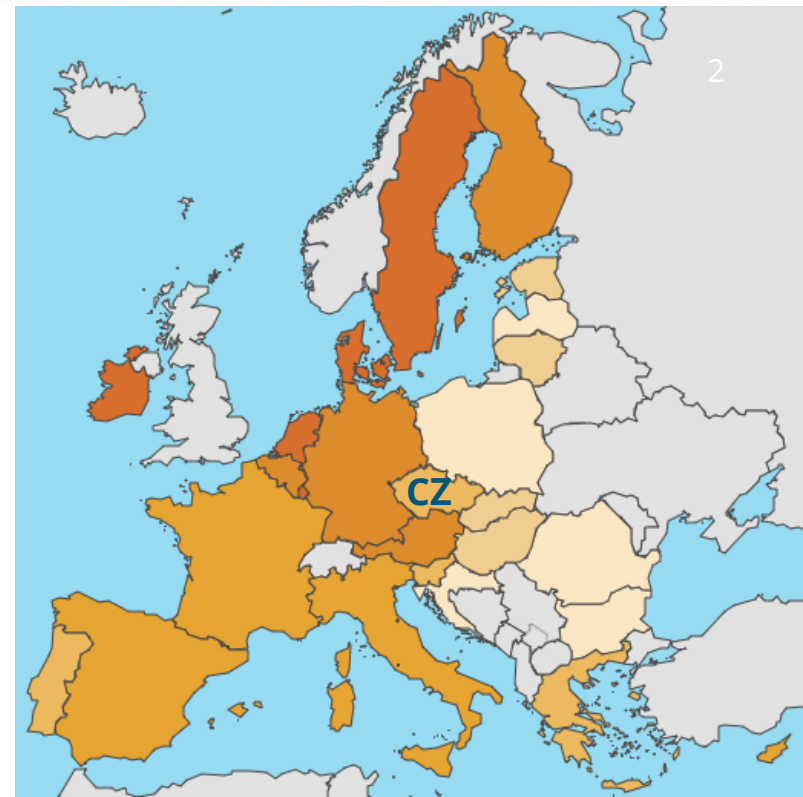
World: 47th / **EU: 17th**

WORLD BANK 2022

Average Gross Wage (2021):

Physicians: 4 595 USD / 3 971 EUR

Nurses: 2 707 USD / 2 340 EUR



Healthcare expenditure

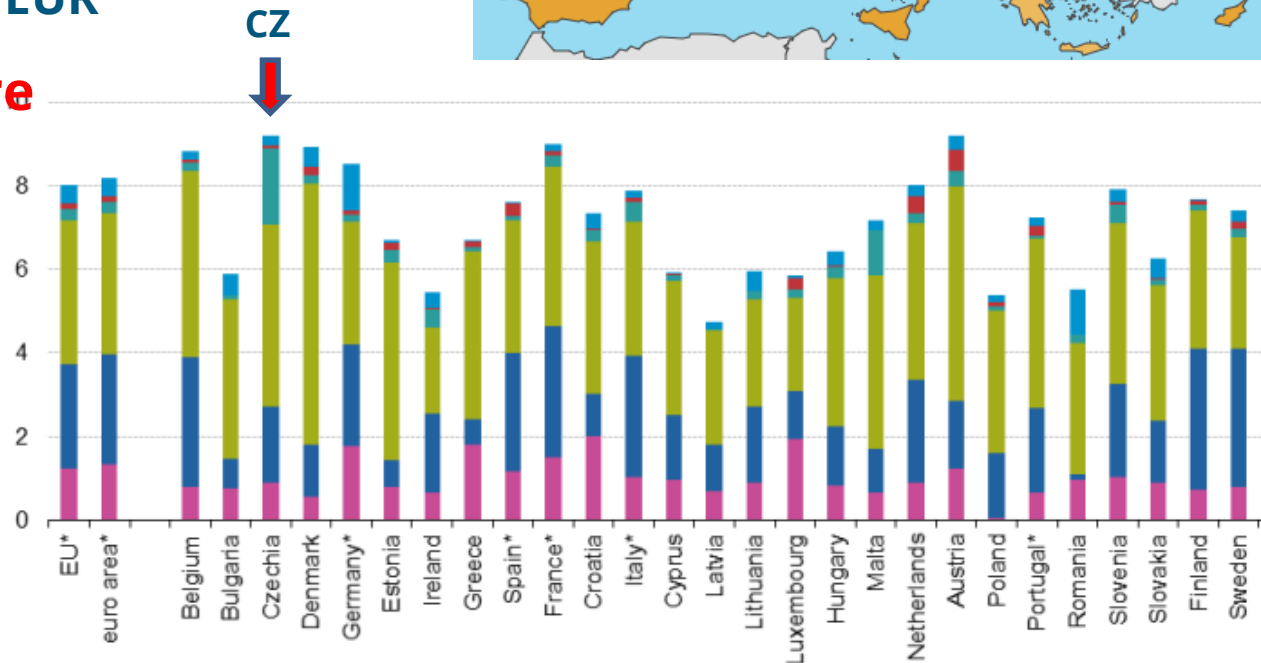
% of GDP (2020)

2020: 9,2 % (1st in EU)

2019: 7,8 % (18th in EU)

eurostat 

- Outpatient services
- Public health services
- Health n.e.c.
- Medical products and equipment
- Hospital services
- R&D Health

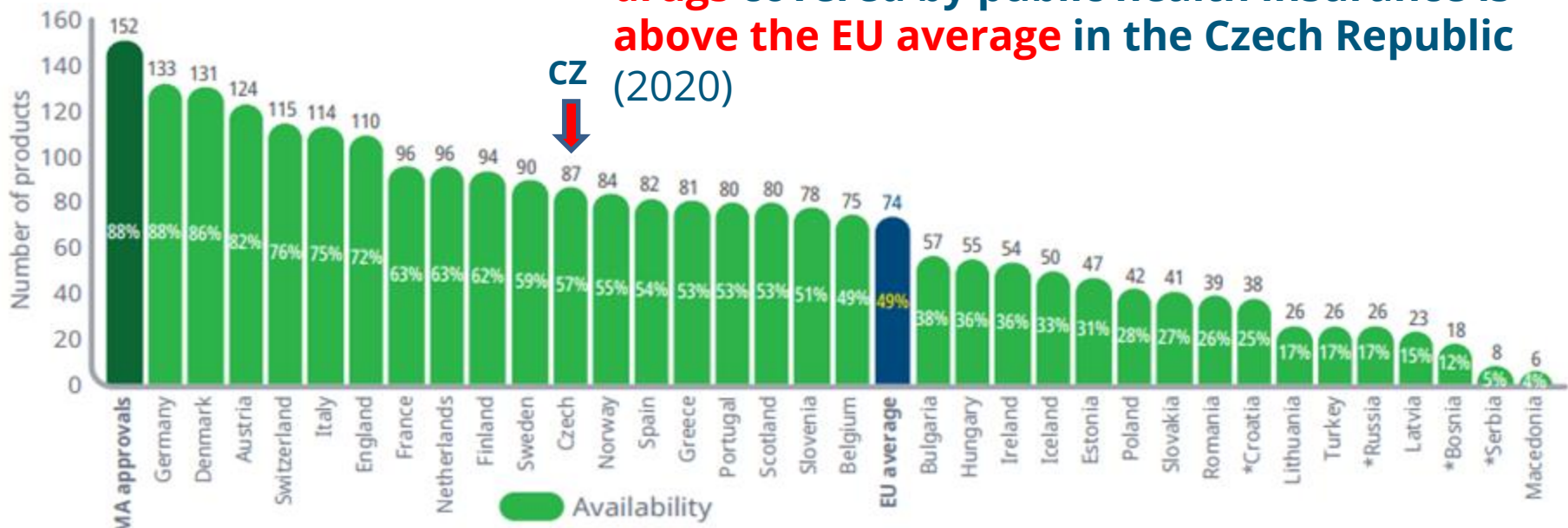


The Czech Republic

The Czech Republic was among the first countries to adopt a **National Cancer Control Plan (2004)**. In 2022, an update to 2030 was approved.

A network of highly specialized **Comprehensive Cancer Centers (CCCs)** that cover the care of adult and pediatric patients with solid and blood tumors was **established in 2005**. In order to strengthen international cooperation in research and rare tumors, two of these centers received the status of **National Cancer Centers** in 2017.

The number of **highly innovative anti-cancer drugs** covered by public health insurance is **above the EU average** in the Czech Republic (2020)

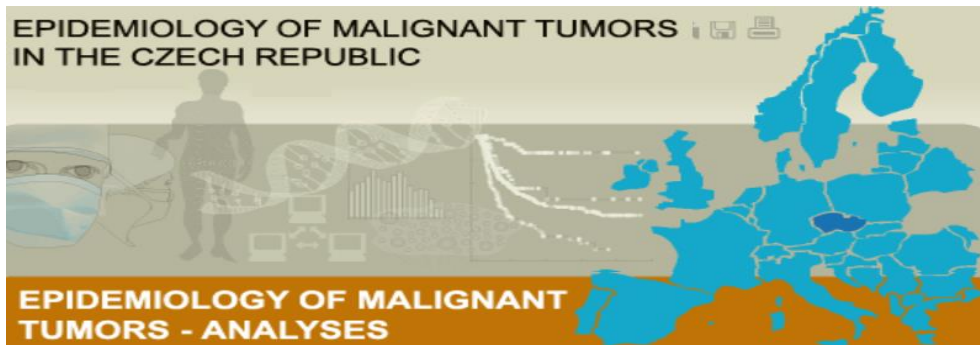


The Czech Republic

There is a **comprehensive information system**, which relies mainly on data from the **National Health Information System (NHIS)** and its components (**Czech National Cancer Registry, National Registry of Reimbursed Health Services**).

This data is used for **evaluation and planning of cancer care** in the Czech Republic.

2005 Software for Visualizing of Oncological Data
from National Cancer Register (www.svod.cz)



Since 2005, **National guidelines** („Blue Book“) for cancer treatment have been published.



The Czech Republic

National Cancer Control Programme

Nationwide cancer prevention programs

2001 Colorectal cancer screening program

citizens aged 50 and over, **imFOBT** a year (every 2 years by 55),
colonoscopy every 10 years

target population **coverage: 27 %** (50 % 3-years)

5-years incidence / mortality: - 8,9 % / - 18,8 %

2002 Breast cancer screening program

women aged 45 and over, **MMG** every 2 years

target population **coverage: 57,4 %** (

5-years incidence / mortality: - 0,8 % / - 4,8 %

2008 Cervical cancer screening program

all adult women, **cervical smear test** once a year and

DNA HPV test at the age of 35 and 45 years

target population **coverage: 57 %** (79 % 3-years)

5-years incidence / mortality: - 13,7 % / - 14,7 %

2014 Vaccination against HPV

girls and boys aged 12 -13 years

target population **coverage: 61,9 % in girls / 40,8 % in boys**

2022 Pilot program for early detection of lung cancer

The Czech Republic

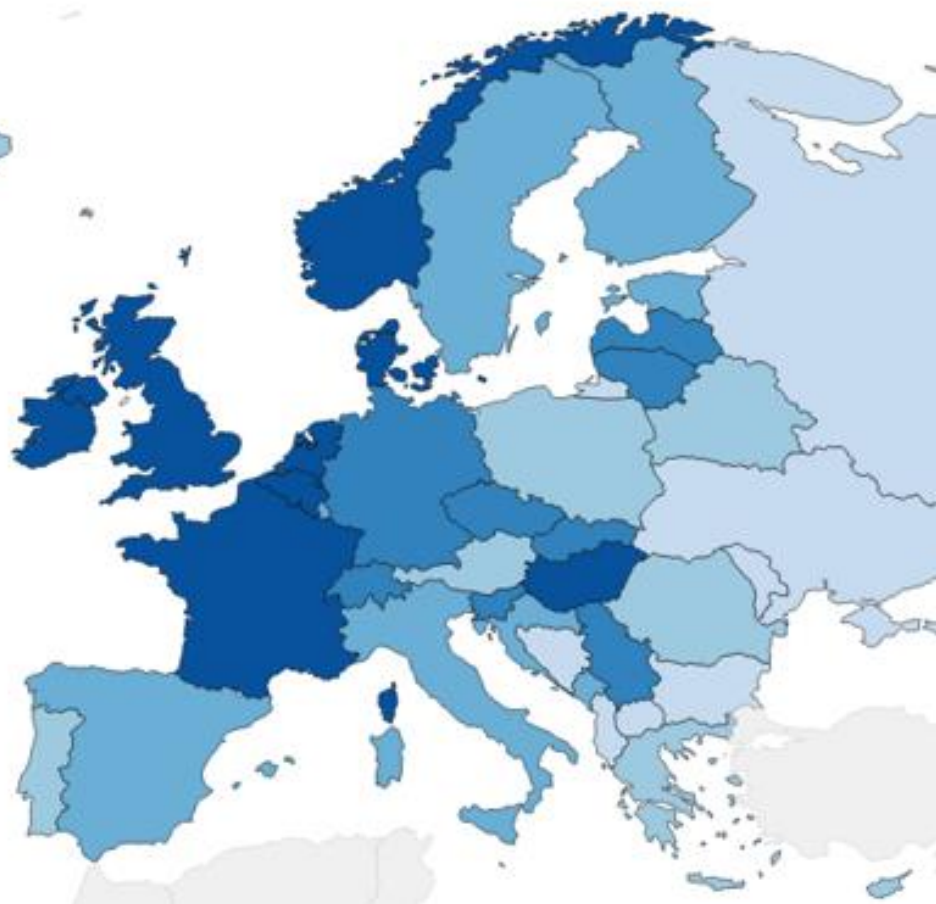
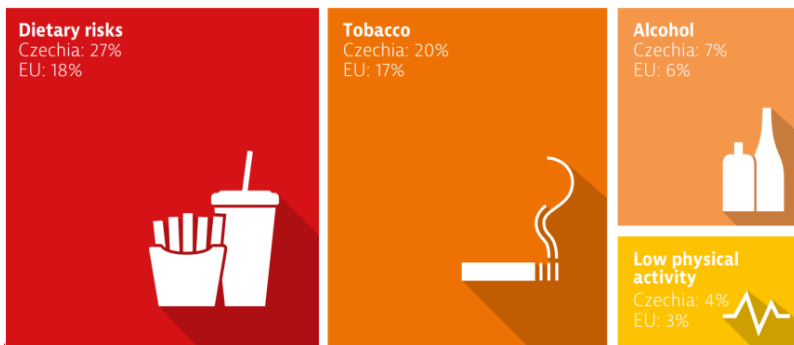
Cancer incidence (C00–C97) in international comparison

Cancer incidence 2020: 85 596 (abs), 13th EU (/17), 16th Europa (/39)

(800/100 000; ASR 293/100 000 ASR)

One of the highest (Europe):

- kidney cancer (2nd)
- pancreas (3rd)
- gallbladder (3rd)
- prostate (8th)



Data source:

GLOBOCAN (2020), <http://gco.iarc.fr/today>

UZIS (2020), <http://www.uzis.cz>

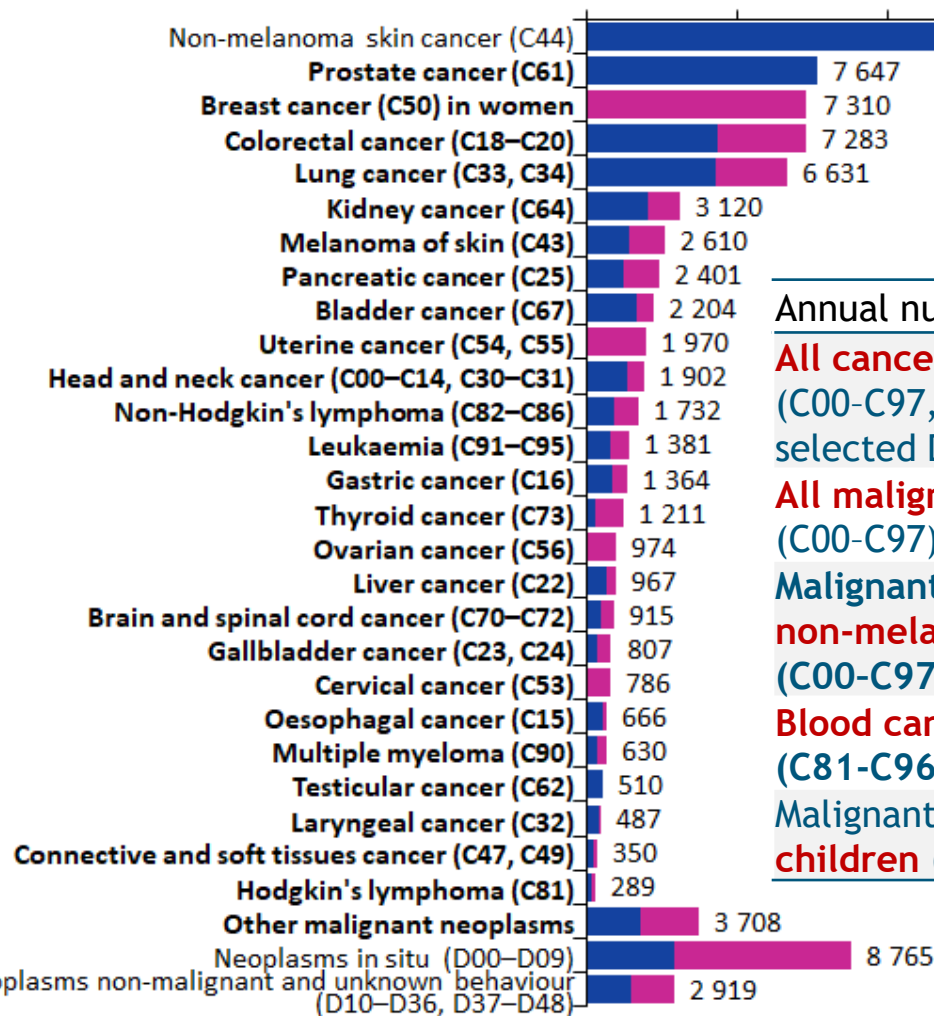
IHME (2020), Global Health Data Exchange

The Czech Republic

Cancer incidence (all cancers)

Annual number of new cases

0 5 000 10 000 15 000 20 000 25 000 30 000



Annual numbers of new cases	men	women	total
All cancers (C00-C97, D00-D09, selected D10-D36, D37-D48)	50 033	47 246	97 280
All malignant neoplasms (C00-C97)	45 634	39 962	85 596 (88 %)
Malignant neoplasms excl. non-melanoma skin cancer (C00-C97 excl. C44)	32 084	27 770	59 854 (62 %)
Blood cancers total (C81-C96, D45-D47)	2 681	2 325	5 006 (5 %)
Malignant neoplasms in children (0-19 years)	210	183	393 (0.4 %)

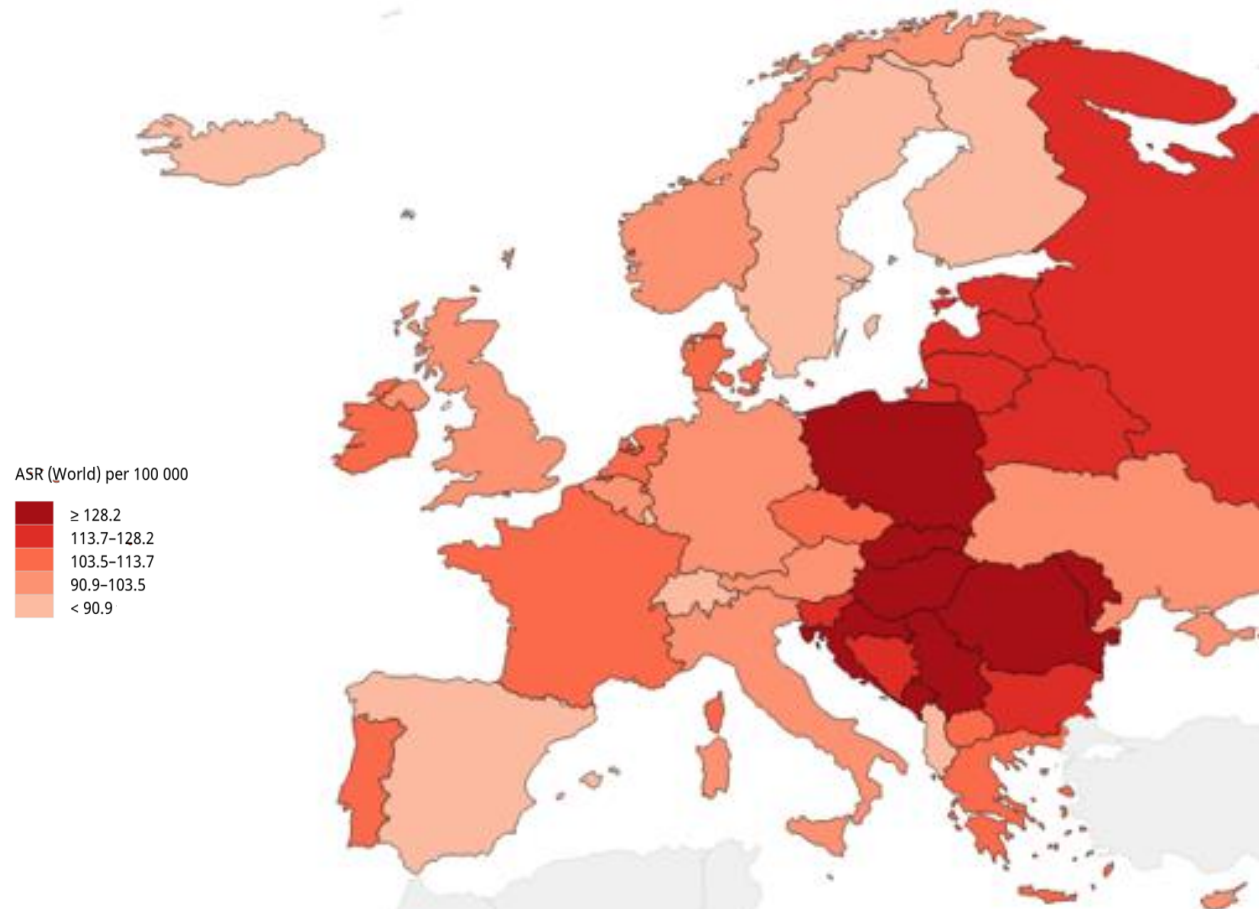
The Czech Republic

Cancer mortality (C00–C97) in international comparison

Cancer mortality 2020: 27 536 (abs), 15th EU, 22th Europa (/39)
(256,5/100 000, ASR 106/100 000)

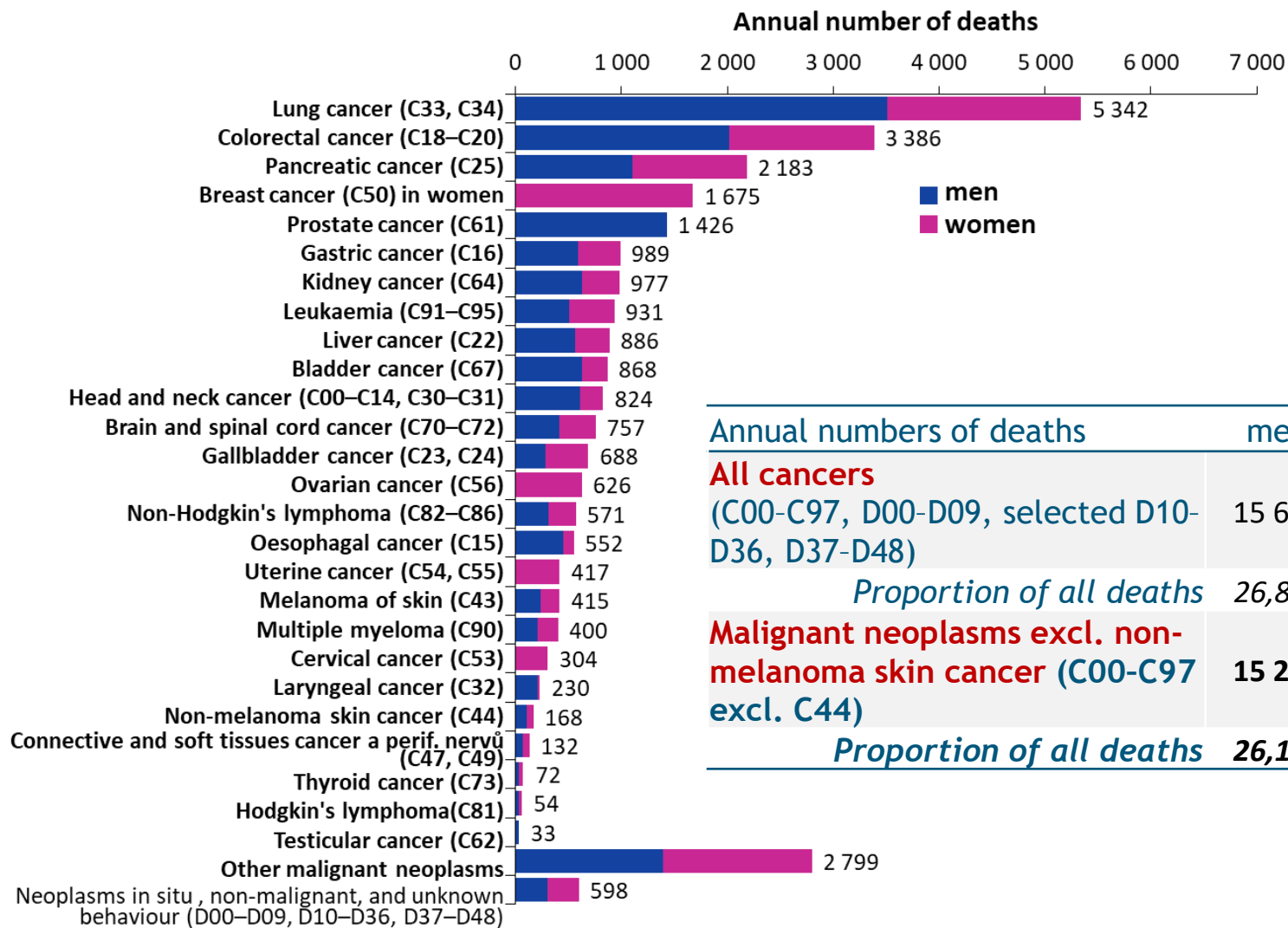
One of the highest (Europe)

- kidney cancer (2nd)
- pancreas (2nd)
- gallbladder (5th)



The Czech Republic

Cancer mortality (all cancers)



Annual numbers of deaths	men	women	total
All cancers (C00–C97, D00–D09, selected D10–D36, D37–D48)	15 652	12 650	28 302
<i>Proportion of all deaths</i>	26,8 %	22,5 %	24,7 %
Malignant neoplasms excl. non-melanoma skin cancer (C00–C97 excl. C44)	15 248	12 287	27 536
<i>Proportion of all deaths</i>	26,1 %	21,8 %	24,0 %

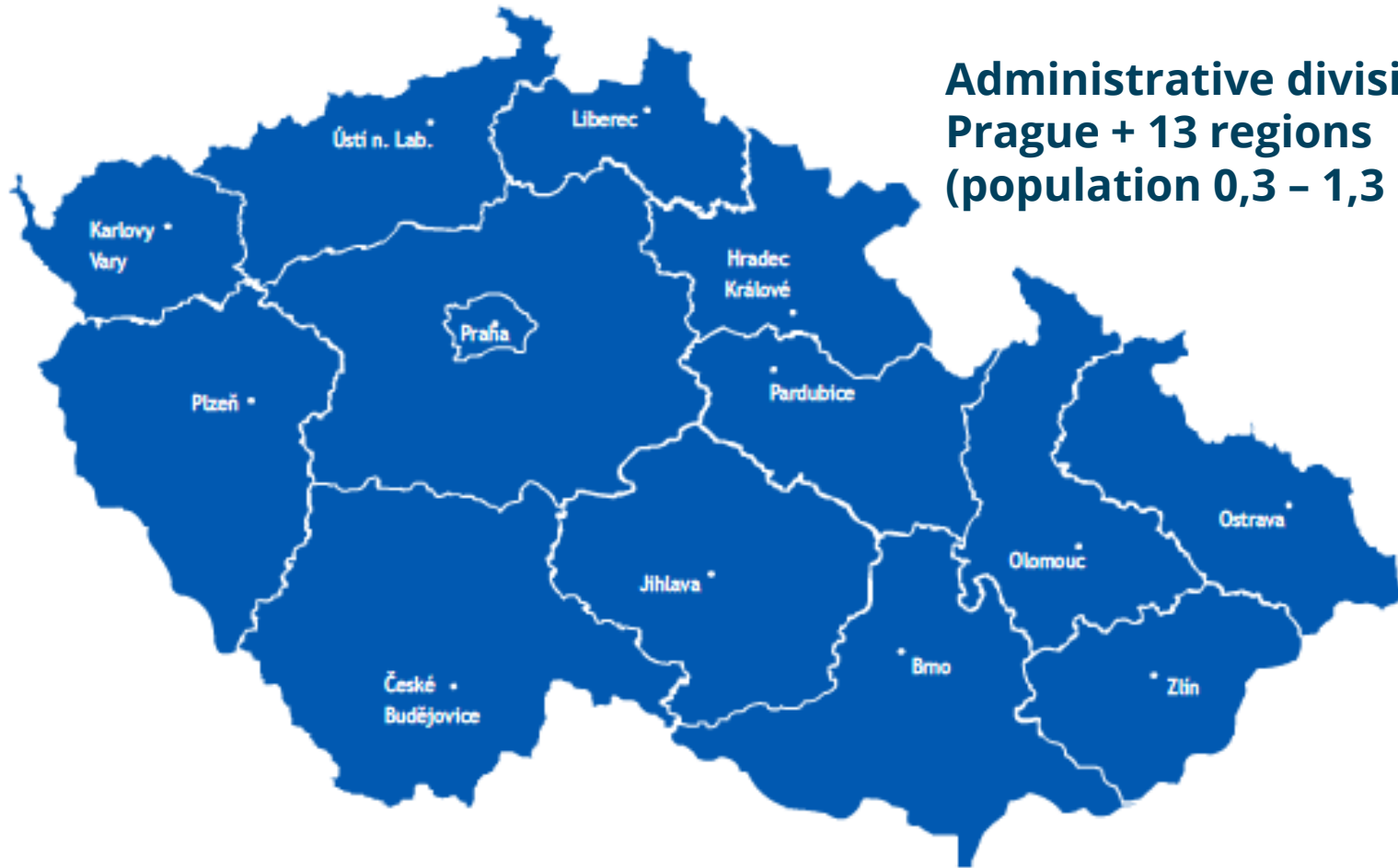
The Czech Republic

- Area: 15th / 27 EU countries
- Population: 10th / 10,7 million (2,4 % EU)



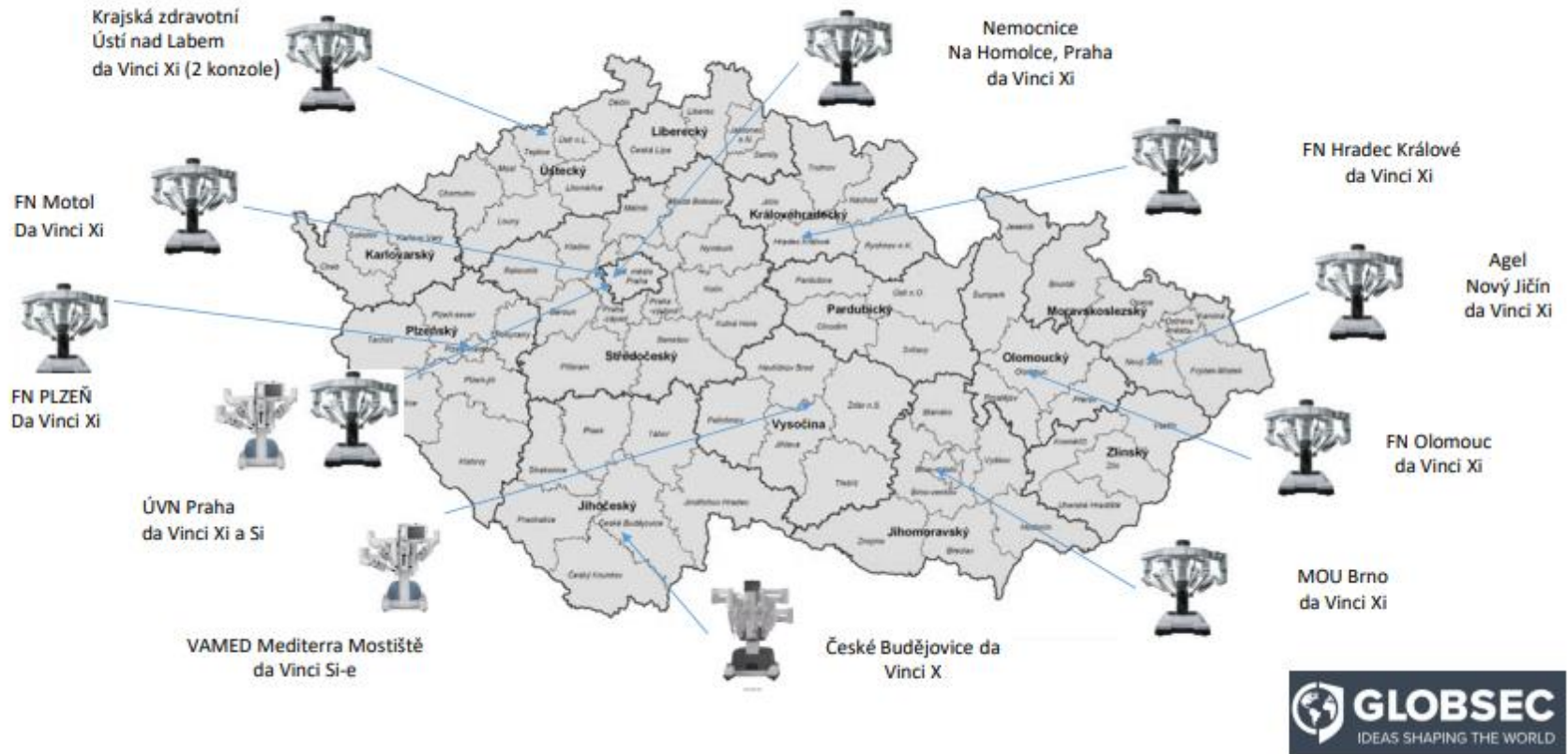
BOHEMIA

MORAVIA



**Administrative divisions:
Prague + 13 regions
(population 0,3 – 1,3 mil.)**

The Czech Republic



Multidisciplinary cooperation and equal access to innovative treatment are ensured in these centers. For this purpose, they have **special contracts with health insurance companies.**

The treatment must be carried out in accordance with the guidelines issued by the Czech Oncological Society (Blue Book)

The Czech Republic

The most complex and most expensive care of adult cancer patients is provided in **a network of 15 Comprehensive Cancer Centres (CCCs)**

Ministry of Health is the founder of half of the CCCs (8) and these centers operate at **university hospitals**. **Other centers operate at large regional hospitals** (5), their founders are mostly regional authorities or private legal entities (2).

The CCCs are independent of each other from the management point of view. **The interaction takes place mainly through regular meetings of the centers' leaders** organized by the Czech Oncological Society.

The CCCs cooperate with each other in the field of diagnostics and treatment of the most complicated cases and selected rare tumors.

The CCCs are responsible for the organization of cancer care in their catchment areas. They establish contractual cooperation with regional oncology outpatient units, hospices and other health care providers. **By this way, a Regional oncology group is created.**



Prague and Central Bohemian Region:

1. Comprehensive Cancer Centre of **University** Hospital in Motol. Prague (ERN EURACAN, PeadCan)
2. Comprehensive Cancer Centre of General **University** Hospital in cooperation with Hospital Na Bulovce and Thomayer Hospital, Prague.
3. Comprehensive Cancer Centre of **University** Hospital Kralovske Vinohrady





Western Bohemia
Comprehensive
Cancer Centre of
University Hospital
Plzen,

Northwestern Bohemia
Comprehensive
Cancer Centre of
Masaryk **Regional**
Hospital in Usti nad
Labem,



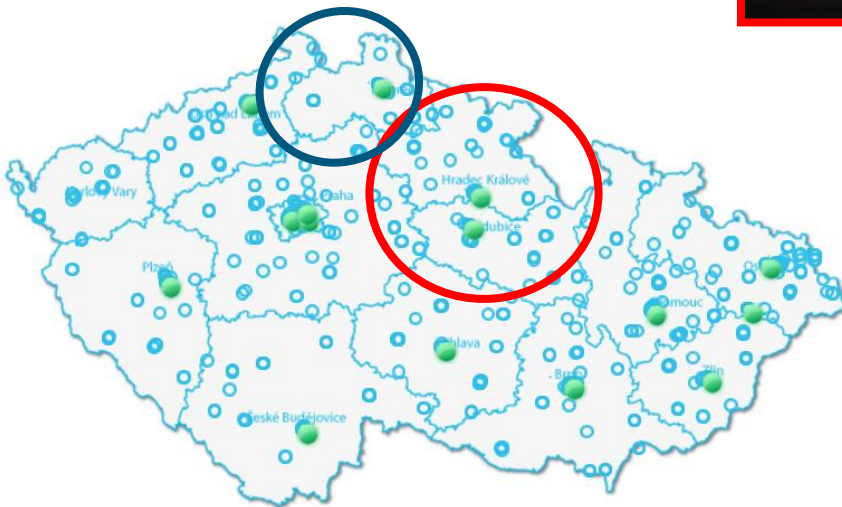
Northern Bohemia

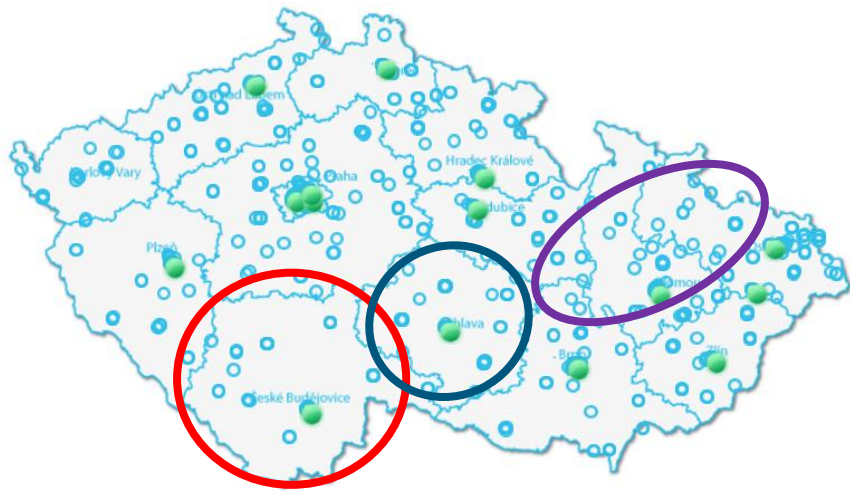
Comprehensive Cancer
Centre of **Regional**
Hospital Liberec



North-Eastern Bohemia

1. Comprehensive Cancer Centre of **University** Hospital Hradec Kralove
2. Comprehensive Cancer Centre of **Regional** Hospital Pardubice (Multiscan)





Southern Bohemia
Comprehensive Cancer
Centre of **Regional** Hospital
Česke Budejovice

Central Moravia
Comprehensive Cancer Centre of
University Hospital Olomouc



Northern Moravia
Comprehensive Cancer Centre of
Regional Hospital Jihlava



Moravian-Silesian Region

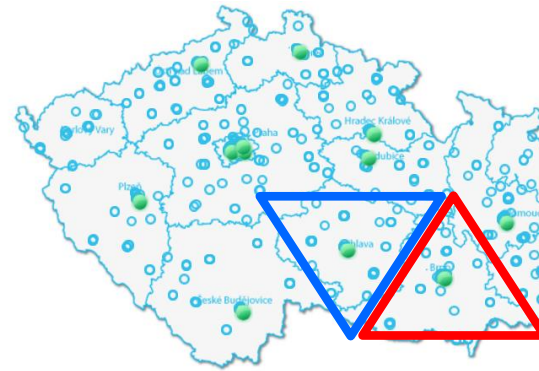
1. Comprehensive Cancer Centre of **University Hospital Ostrava**.
2. Comprehensive Cancer Centre of **Regional Hospital Novy Jicin (Agel)**



Eastern Moravia Comprehensive Cancer Centre of **Regional Hospital Zlin**



South Moravian Region
Comprehensive Cancer Centre of
Masaryk Memorial Cancer Institute
 in cooperation with **University**
Hospital Brno and **St. Anne's**
University Hospital.



South-West Moravian
Regional Oncology
Network
12 regional hospitals
and 2 hospices



Council of the National Cancer Center

MMCI

University Hospital Brno

St. Anne's UH

SOLID TUMOURS
 (except CNS, thoracic and
 HNC surgery)

SOLID TUMOURS

SOLID TUMOURS

PHOTONIC CENTRE

HAEMATOONCOLOGY
**PAEDIATRIC HAEMATO-
 ONCOLOGY**

CzECRIN
national node

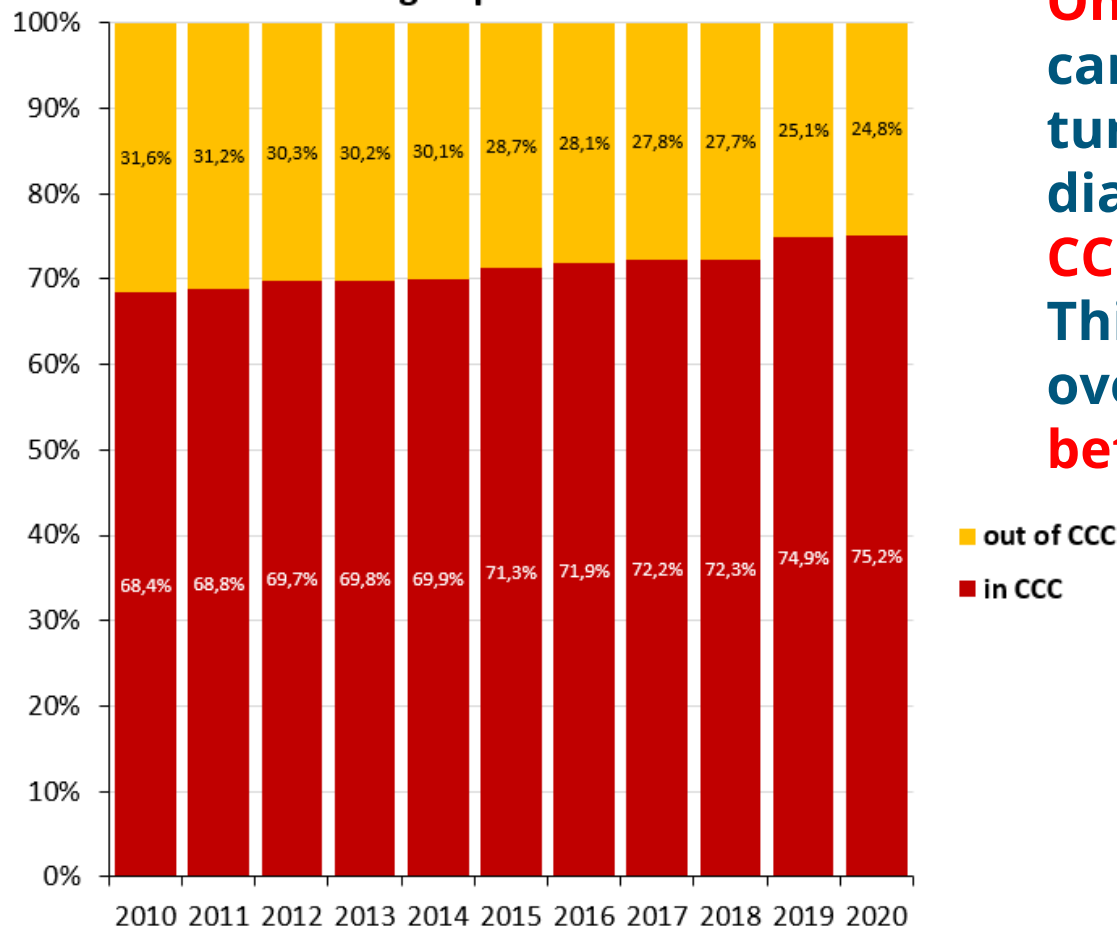
EURACAN
GENTURIS
BBMRI-ERIC
national node

EuroBloodNet
PaedCan

Multidisciplinary
teams organized
by MMCI

The Czech Republic

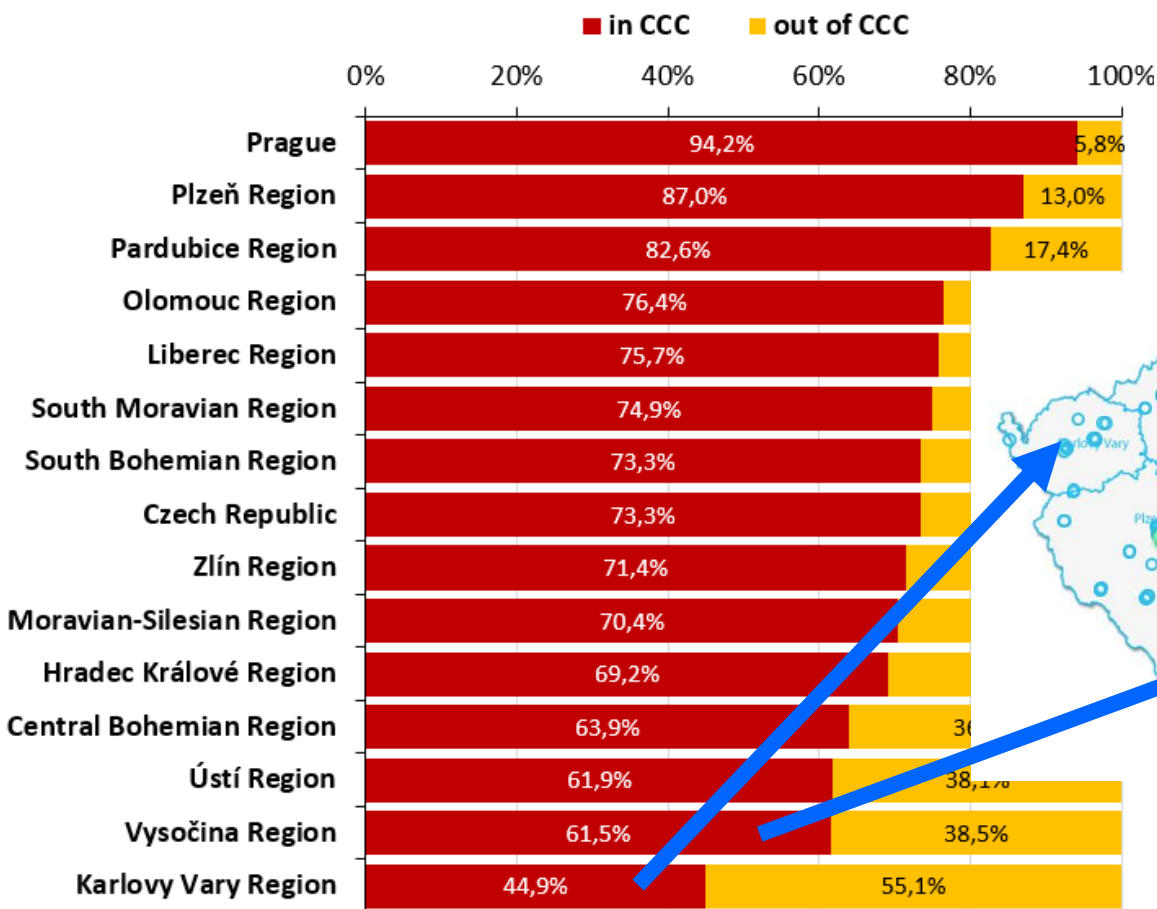
Proportion of newly diagnosed and treated patients according to place of treatment



On average, 75,2 % of new cancer patients with solid tumors (excluding C44) are diagnosed and treated in CCCs in the Czech Republic. This number increases over time and varies between 44,9 - 94,2 %

The Czech Republic

Proportion of newly diagnosed and treated patients according to place of treatment



The differences depend on:
1. The presence of the CCCs in the region and its



economic factors and others)

Source: CNCR 1977–2020 + NRRHS 2010–2020; treatment of solid malignant neoplasms reported in NRRHS data for diagnosis C00–C97 (excluding haemato-oncological diagnoses C81–C96 and dg. C44); diagnosis reported in CNCR

The Czech Republic

Proportion of newly diagnosed and treated patients according to place of treatment

Proportion of newly diagnosed and treated patients according to place of treatment

EBCP: the cancer plan aims to ensure that 90% of eligible patients have access to such centres (CCCs)..

Is it desirable and necessary for all cancer patients to be treated in CCCs?

The eligibility must be well defined and take into account to local conditions, including regional network existence,

South
Hrad
South
Moravia
Central



28,8 - 90,2 % of new cancer patients with colorectal cancer and 49,8 - 93,8 % with breast cancer are diagnosed and treated in CCCs in the Czech Republic.

The Czech Republic

Czech National Cancer Centers

In 2017, due to the **growing needs to ensure the involvement of Czech oncology in international projects focused on research and rare tumors**, the Czech Ministry of Health in cooperation with Committee of the Czech Oncological Society decided that **two largest CCCs** (one for Bohemia, one for Moravia), which are members of the ERN EURACAN will fulfill the **role of National Cancer Centers (NCC)**:

BRNO: NCC Masaryk Memorial Cancer Institute in cooperation with **University Hospital Brno** and **St. Anne's University Hospital**

PRAGUE: NCC University Hospital in Motol + Central Military Hospital + Hospital Na Homolce + Proton Therapy Center

These two NCCs were approved by the Ministry of Health and **are obliged to be members of the OECI**. (Published in the Bulletin of the Ministry of Health of the Czech Republic No. 13/2017). **MMCI is an accredited member of the OECI**

Czech National Cancer Centers

Masaryk Memorial Cancer Institute in Brno



University Hospital Motol in Prague



Newly Diagnosed Cancer patients in 2019	MMCI Brno	UN MOTOL Prague
<u>Newly diagnosed cancer patients</u>	4 247	3 139
- Treated by radiotherapy	2,367	836
- Treated by systemic therapy	2 348	1 377
- Treated by surgery	2 627	2 253
Number of accredited ERN EURACAN domains	8	3
Number of accredited ERN GENTURIS domains	3	1

South Moravia is a beautiful country,
full of beautiful nature, good wine,
historical monuments and other
attractions to visit
Enjoy the Brno!





**South Moravia
Slavkov / Austerlitz**

Battle of Austerlitz

2.12.1805

Napoleon, Emperor Alexander,
Holy Roman Emperor Francis II.



Thank you for your attention