

# Czech National Information System for Cancer Control and Management

From eHealth implementation ...

... towards predictive management of care



Expert meeting on oncology, Brno, 13.7. 2022



MINISTERSTVO ZDRAVOTNICTVÍ  
ČESKÉ REPUBLIKY

**ÚZIS** Ústav zdravotnických informací a statistiky ČR  
Institute of Health Information and Statistics of the Czech Republic

# Our journey to the national cancer information system was long ....

RESEARCH ARTICLE

Open Access

Estimating the number of colorectal cancer patients treated with anti-tumour therapy in 2015: the analysis of the Czech National Cancer Registry

Tomáš F...  
 Rostislav...

**Abstract**  
 Background: A need for anti-tumour therapy in patients with colorectal cancer. Methods: The Czech National Cancer Registry data were analyzed. Results: The prevalence of colorectal cancer increased from 11.4% in 2004 to 17.4% in 2015. Conclusion: The prevalence of colorectal cancer is increasing. Registration and analysis of cancer data are essential for the development of cancer prevention and treatment strategies.

**Background**  
 The Czech National Cancer Registry (CNCR) is a national database of cancer patients. It was established in 2008 and is a member of the International Association of Cancer Registries (IACR).

**Conclusion**  
 The prevalence of colorectal cancer is increasing. Registration and analysis of cancer data are essential for the development of cancer prevention and treatment strategies.

**Keywords**  
 Colorectal cancer, anti-tumour therapy, prevalence, Czech National Cancer Registry, IACR.

**Background**  
 Breast cancer is the most common cancer in women. The incidence of breast cancer is increasing, and it is the leading cause of cancer death among women.

**Conclusion**  
 Breast cancer is the most common cancer in women. The incidence of breast cancer is increasing, and it is the leading cause of cancer death among women.

**Keywords**  
 Breast cancer, incidence, mortality, women.

RESEARCH ARTICLE

Open Access

Breast cancer screening in the Czech Republic: time trends in performance indicators during the first seven years of the organised programme

Ondřej Maj...  
 Petr Brabec...

**Abstract**  
 Background: The aim of the study was to evaluate the quality of breast cancer screening in the Czech Republic. Methods: Data from the Czech National Cancer Registry (CNCR) were analyzed. Results: The coverage of breast cancer screening increased from 44.3% in 2005 to 82.1% in 2012. Conclusion: The quality of breast cancer screening in the Czech Republic has improved significantly.

**Background**  
 Breast cancer is the most common cancer in women. The incidence of breast cancer is increasing, and it is the leading cause of cancer death among women.

**Conclusion**  
 Breast cancer is the most common cancer in women. The incidence of breast cancer is increasing, and it is the leading cause of cancer death among women.

**Keywords**  
 Breast cancer, screening, incidence, mortality, women.

<https://www.crcprevention.eu/>



## Project I-COP – Architecture of Software Tool for Decision Support in Oncology

Milan BLAHA<sup>1</sup>, Dalibor...  
 Institute of Biostatistics...

**Abstract:** This tool is designed to provide decision support for oncologists. It is based on real data and includes a large number of parameters. The tool is designed to be used in a clinical setting. It is designed to be used by oncologists. It is designed to be used by oncologists.

**Introduction**  
 Each medical facility has a need for decision support. The need for decision support is increasing. The need for decision support is increasing. The need for decision support is increasing. The need for decision support is increasing.

ORIGINAL PAPER

### Patients with advanced and metastatic renal cell carcinoma treated with targeted therapy in the Czech Republic: twenty cancer centres, six agents, one database

Alexandr Poprach · Zbyněk Borříček · Tomáš Büchler · Bohuslav Melichar · Radek Lakomý · Rostislav Vyzula · Petr Brabec · Marek Svoboda · Ladislav Dušek · Jakub Gregor

Received: 20 March 2012 / Accepted: 14 June 2012 / Published online: 30 June 2012  
 © Springer Science+Business Media, LLC 2012

**Abstract** The incidence and mortality of renal cell carcinoma (RCC) in the Czech Republic are among the highest in the world. Several targeted agents have been recently approved for the treatment of advanced/metastatic RCC. Objective: Presentation of a national clinical database for monitoring and assessment of patients with advanced/metastatic RCC treated with targeted therapy. The RENIS (RENal Information System, <http://renis.registry.cz>) registry is a non-interventional post-registration database of epidemiological and clinical data of patients with RCC treated with targeted therapies in the Czech Republic. Twenty cancer centres eligible for targeted therapy administration participate in the project. As of November 2011, six agents were approved and reimbursed from public health insurance, including bevacizumab, everolimus, pazopanib, sunitinib, sorafenib, and temsirolimus. As of 10 October 2011, 1,541 patients with valid records were entered into the database. Comparison with population-based data from the Czech National Cancer

**Keywords** Renal cell carcinoma · Targeted therapy · Clinical registry · Cancer care · Database · Population-based data

**Introduction**

.... and is still going on

# The Czech system gained a lot experience from Joint Action projects

Focus on prevention

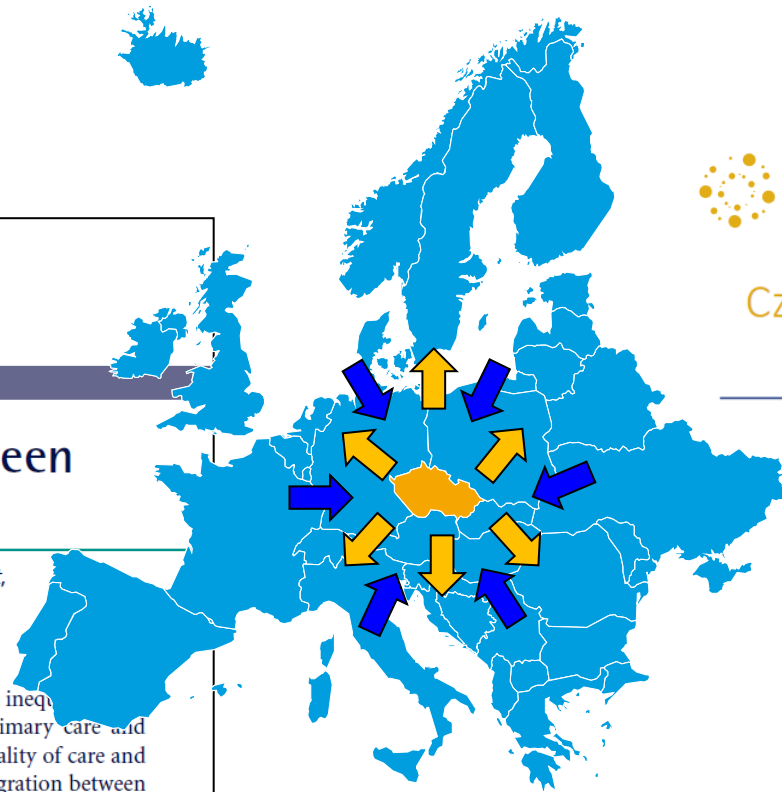
Patient-centred model of care

Cancer centers networking

Integrated cancer control

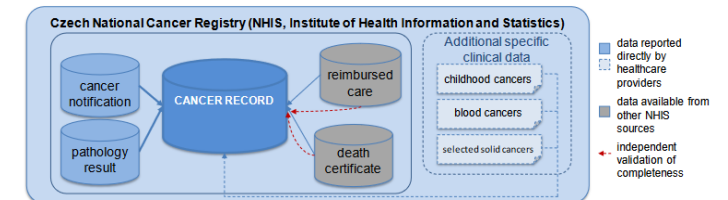


<https://ecpc.org/policy/joint-action-on-cancer-control-cancon/>  
<https://www.ipaac.eu/>



Czech comprehensive ICT model integrating multiple data sources

Description and implementation guide



64 Patient-Centred and Integrated Cancer Care

PERSPECTIVE

## 13 Integration of Cancer Care between Primary Care and Hospitals

*Peter Selby, Geoff Hall, Ladislav Dusek, Fotios Loupakis, Lucio Luzzatto, Tit Albrecht, Richard D. Neal, Rob Turner, Sean Duffy*

### Introduction

Despite encouraging progress, outcomes for cancer patients are still patchy and inequally distributed, apparent even across Europe.<sup>1-3</sup> Integrated cancer care, bringing together primary care and hospital care and forming closer links between institutions, can improve the quality of care and outcomes for patients.<sup>4</sup> This chapter summarizes approaches to improving integration between

.... 19xx .... 2012 .... when we started

.... In past



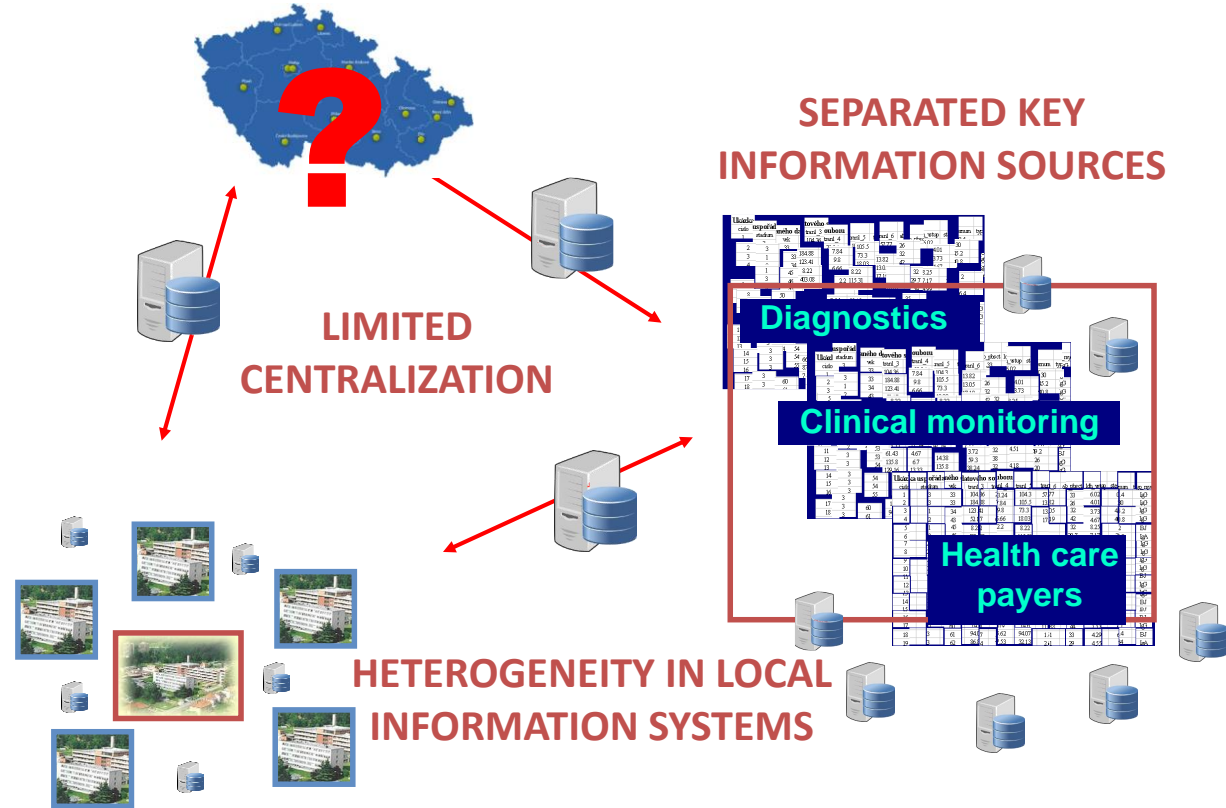
Items in cancer registry were reported in special formulas as „**additional**“ duty of providers.

Extensive data collection, outcomes of laboratory examinations, details on hospital stays, etc. were not included.

**The registration was only epidemiologic.**

Multi-source data integration, addressed communication with citizens were limited due to **insufficient legal mandate**.

**Organization of protocol – based observational studies** was complicated, associated with administrative burden.



# 2017 -> a new comprehensive cancer registration system

Future ...

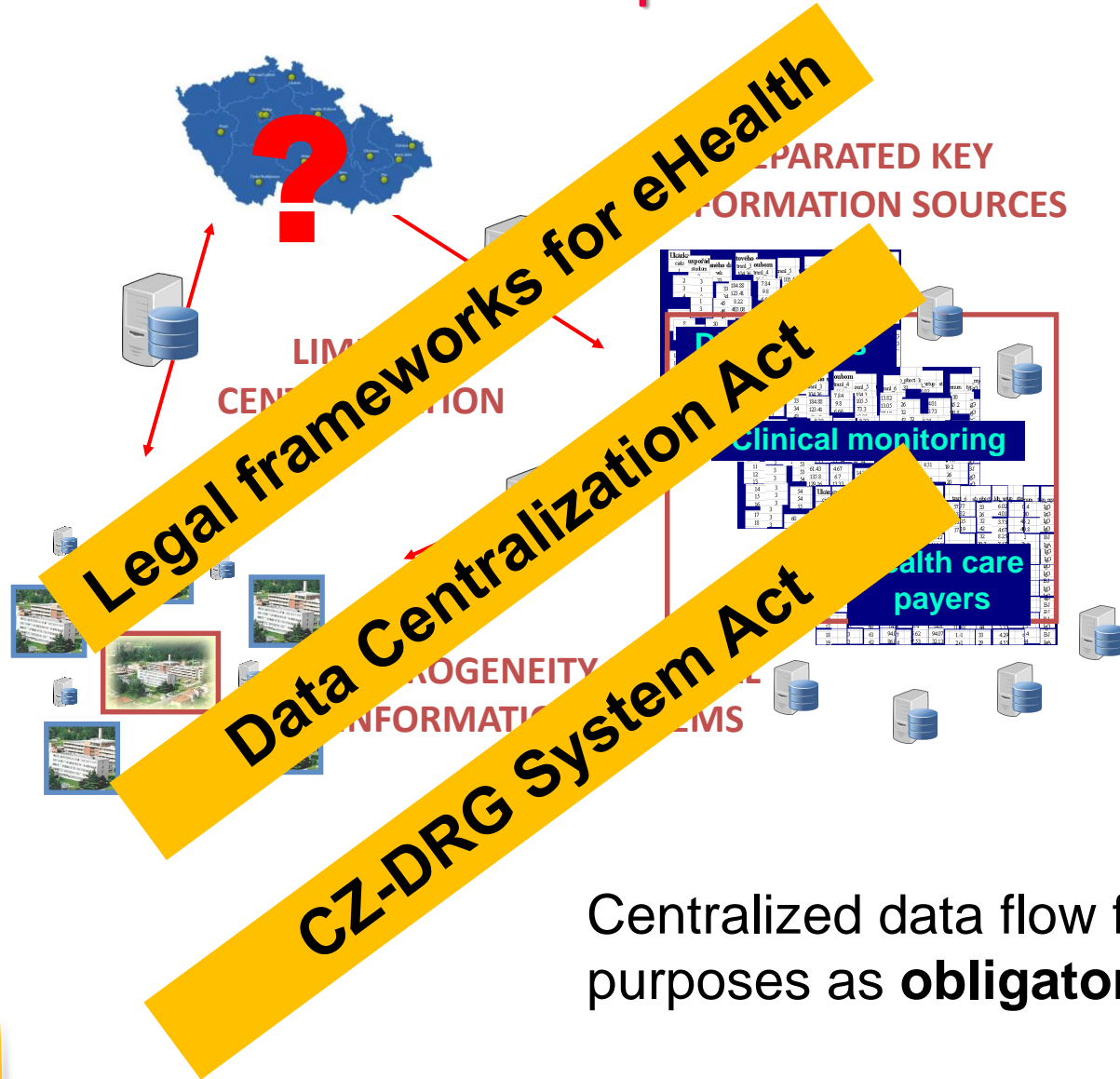


The system **covering all already running data collection processes**, their sources and data outcomes (diagnostic units – primary care providers – hospitals ...)

Legal background supporting multiple source data integration. **Law-based** clear mandate and duties for all providers.

Centralized data flow for statistical and analytical purposes as **obligatory component of eHealth system.**

**Minimized „additional“ data collection** by professionals.



# Successful system? -> sustainable collection of highly representative data

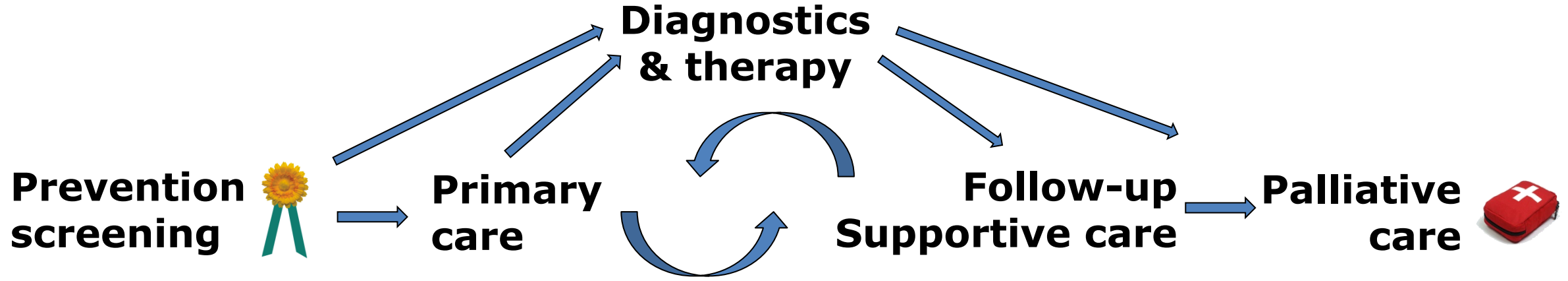


The Czech strategy is to develop a system exploiting already generated administrative data flow(s) and all reporting systems based on e-health documentation records

Successful system? -> complex coverage of all segments of care

**CZ-DRG**

**Cost quantification and benchmarking**



**Organized prevention**

**End-of-life care**

**Standardized clinical information systems**

**Call and recall systems**, personalized invitation of clients

**Standardized eHealth documentation**

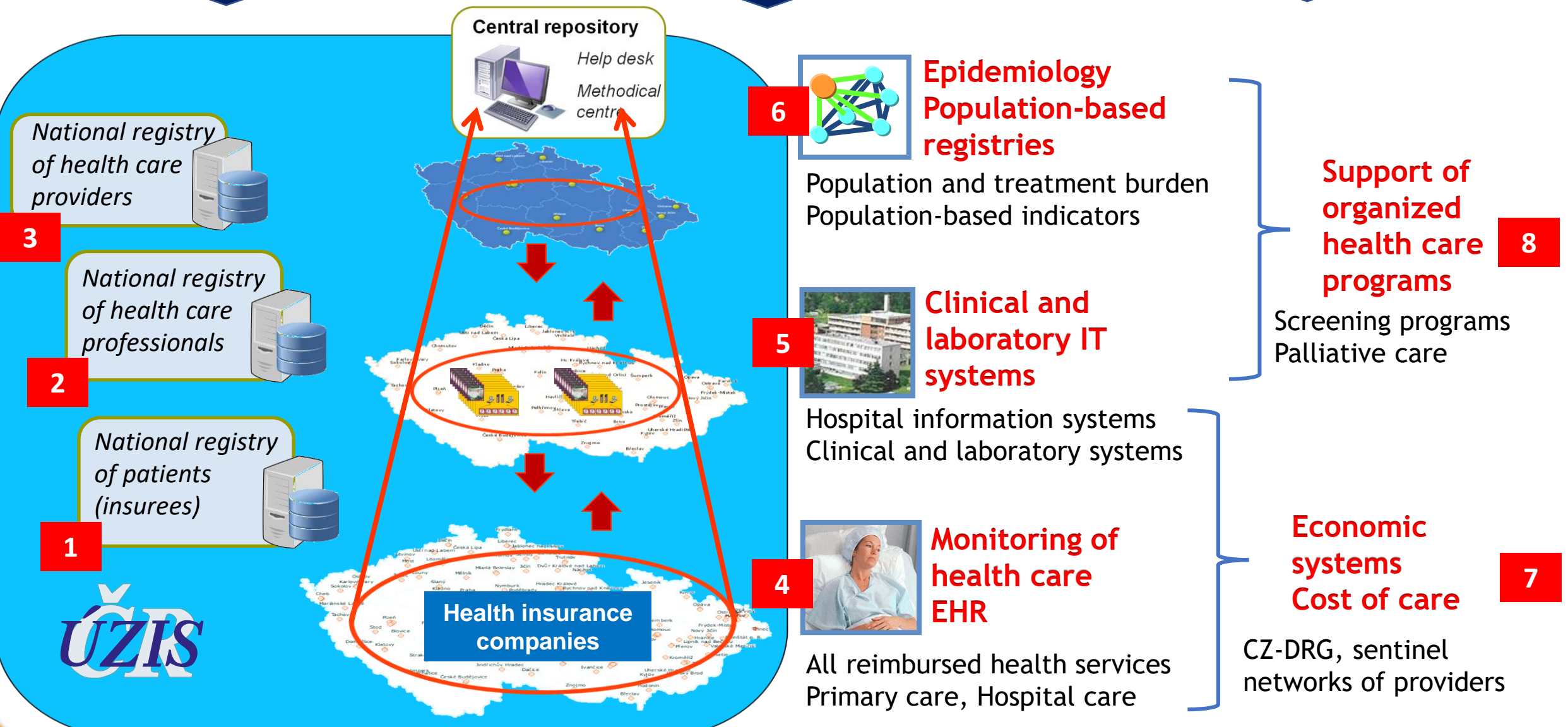
**Mapping social and community health care services**

Laboratories      Primary care      Hospitals

# REFERENCE E-HEALTH DATA SPACE

# INTEGRATED HEALTH CARE SYSTEMS

# SPECIAL SYSTEMS FOR HEALTH CARE PROGRAMS





# REFERENCE E-HEALTH DATA SPACE

# INTEGRATED HEALTH CARE SYSTEMS

# SPECIAL SYSTEMS FOR HEALTH CARE PROGRAMS

3 National registry of health care providers



2 National registry of health care professionals



1 National registry of patients (insurees)



Central repository

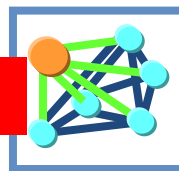


Help desk  
Methodical centre



Health insurance companies

6



Epidemiology  
Population-based registries

Population and treatment burden  
Population-based indicators

5



Clinical and laboratory IT systems

Hospital information systems  
Clinical and laboratory systems

4



Monitoring of health care  
EHR

All reimbursed health services  
Primary care, Hospital care

Support of organized health care programs

8

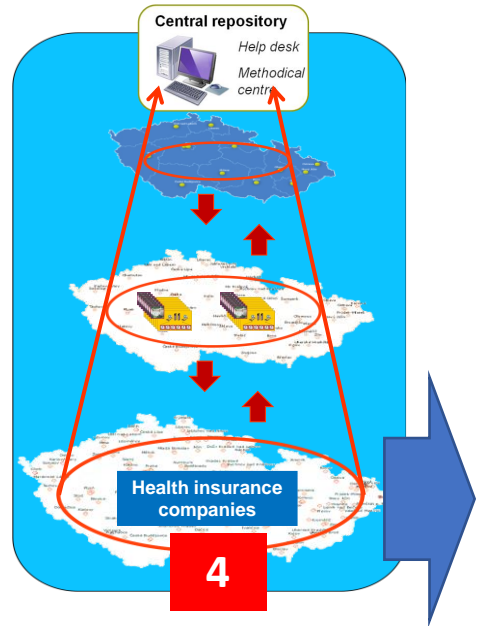
Screening programs  
Palliative care

Economic systems  
Cost of care

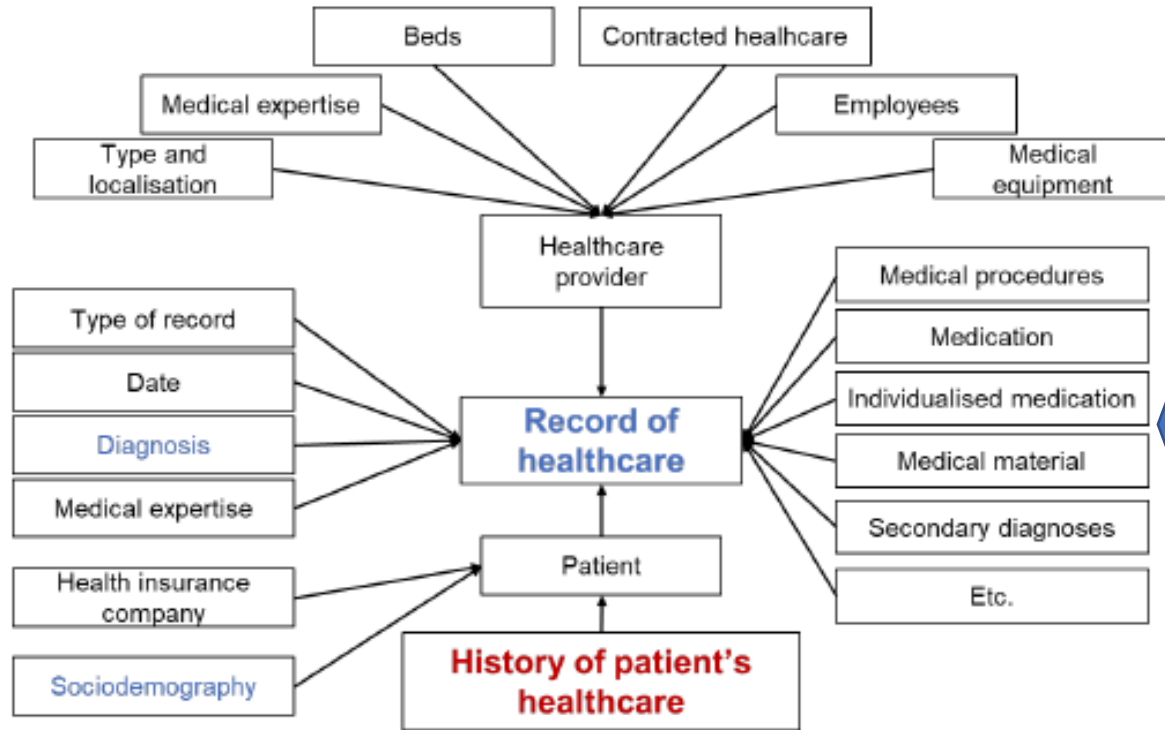
7

CZ-DRG, sentinel networks of providers

# Key (high volume) component: Registry of all reimbursed health care services



**Full centralization  
of data of health  
care payers**



Year	Administered care (procedures, drugs, etc.)	Unique patients
2010	784 310 890	10 421 267
2011	789 265 885	10 472 704
2012	791 155 251	10 422 625
2013	818 172 692	10 442 772
2014	850 798 615	10 486 511
2015	981 389 090	10 512 790
2016	1 001 561 133	10 577 032
2017	1 016 619 794	10 610 900
2018	1 038 552 817	10 680 876
2019	1 085 826 827	10 760 256
2020	1 074 565 406	10 682 356
2021	1 154 277 090	10 801 319

**Time-related individualized parametric data records**

**Diagnostics**



**Therapy**



**Supportive care**



**Palliative care**

# REFERENCE E-HEALTH DATA SPACE

# INTEGRATED HEALTH CARE SYSTEMS

# SPECIAL SYSTEMS FOR HEALTH CARE PROGRAMS

3 National registry of health care providers



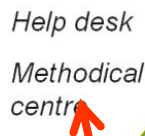
2 National registry of health care professionals



1 National registry of patients (insurees)



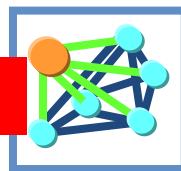
Central repository



Help desk  
Methodical centre



6



Epidemiology  
Population-based registries

Population and treatment burden  
Population-based indicators

5



Clinical and laboratory IT systems

Hospital information systems  
Clinical and laboratory systems

4



Monitoring of health care  
EHR

All reimbursed health services  
Primary care, Hospital care

Health insurance companies

Support of organized health care programs

8

Screening programs  
Palliative care

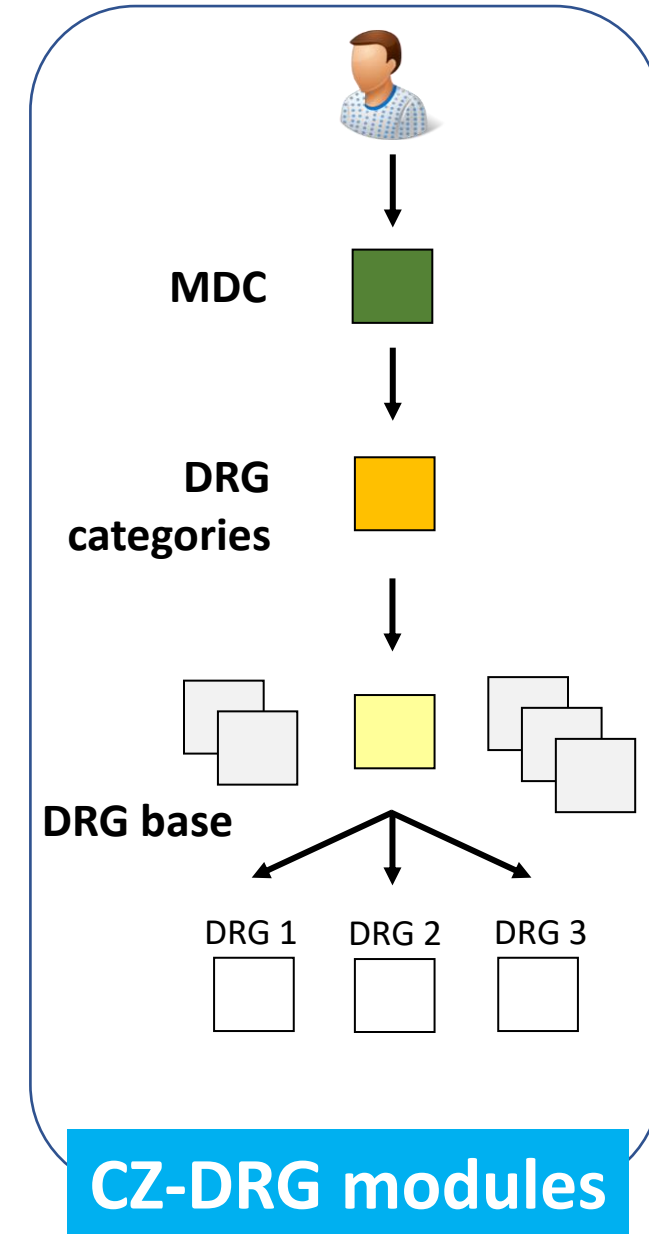
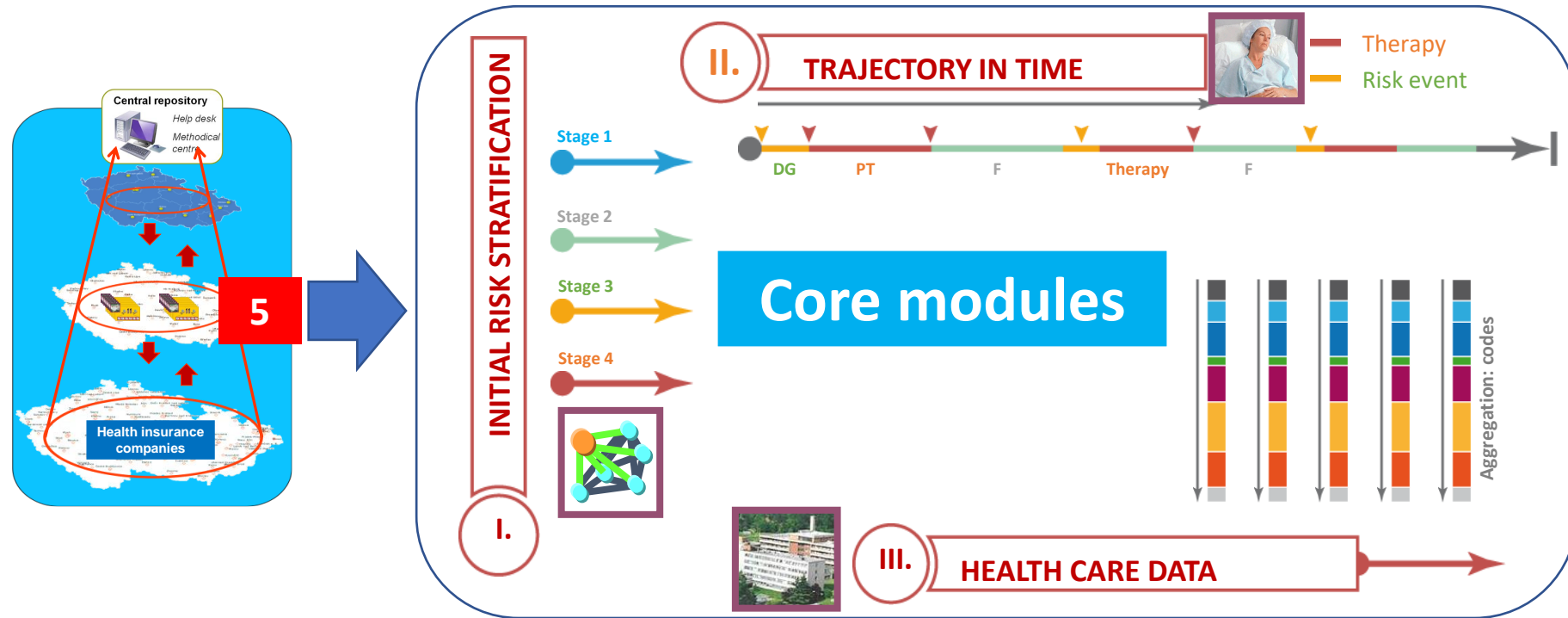
Economic systems  
Cost of care

7

CZ-DRG, sentinel networks of providers

# Standardized clinical and laboratory IT systems

<https://drg.uzis.cz/klasifikace-pripadu/web/>



## Satellite modules

**Examinations**

**AE monitoring**

**Tissue banks**

**External registries**

**„Omics“ data**

**CZ-DRG modules**

# REFERENCE E-HEALTH DATA SPACE

# INTEGRATED HEALTH CARE SYSTEMS

# SPECIAL SYSTEMS FOR HEALTH CARE PROGRAMS

3 National registry of health care providers



2 National registry of health care professionals



1 National registry of patients (insurees)



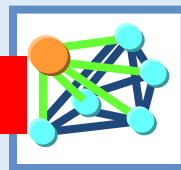
Central repository



Help desk  
Methodical centre



6



Epidemiology  
Population-based registries

Population and treatment burden  
Population-based indicators

5



Clinical and laboratory IT systems

Hospital information systems  
Clinical and laboratory systems

4



Monitoring of health care  
EHR

All reimbursed health services  
Primary care, Hospital care

Support of organized health care programs

8

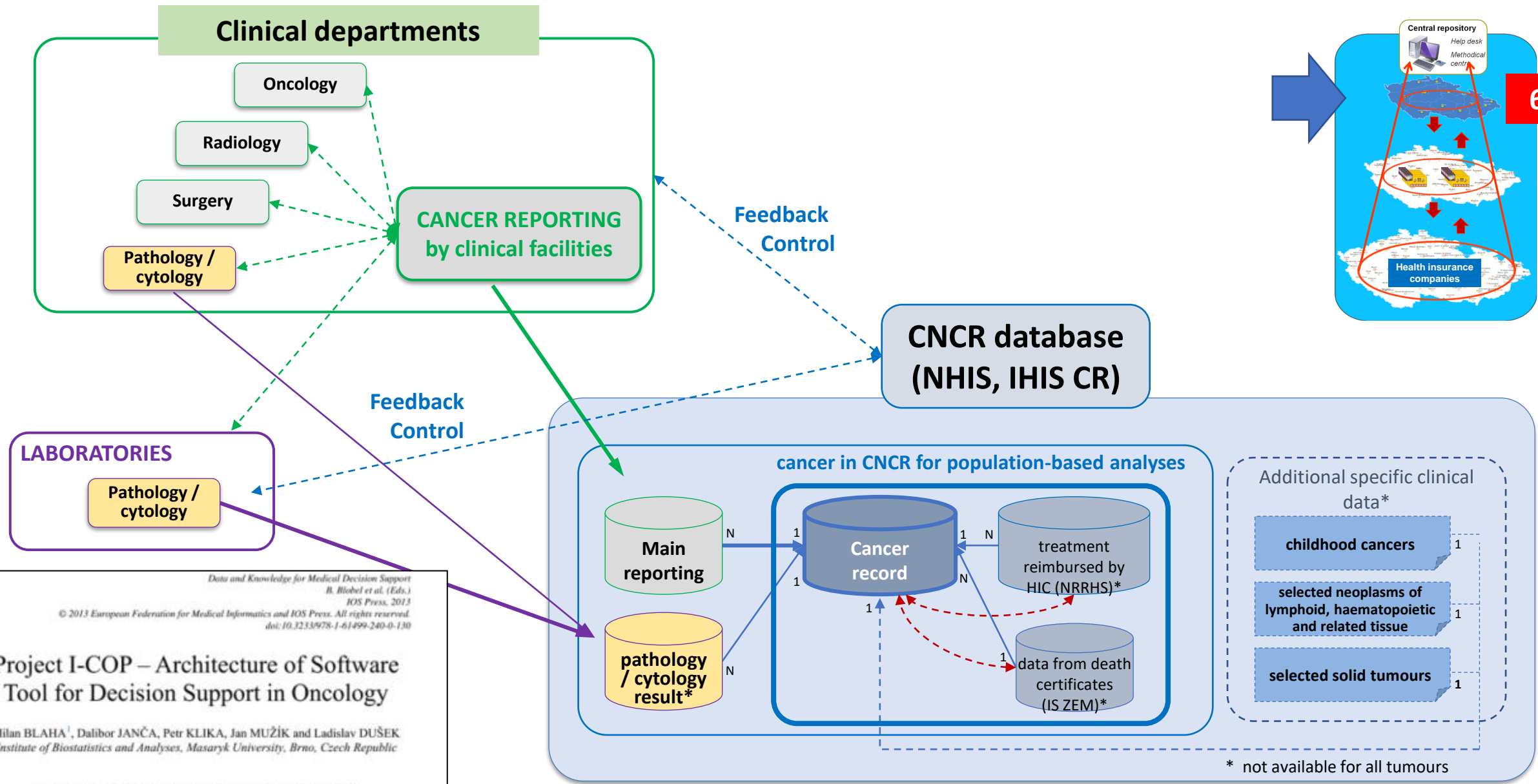
Screening programs  
Palliative care

Economic systems  
Cost of care

7

CZ-DRG, sentinel networks of providers

# Centralized population-based registry: automated data flow



130 *Data and Knowledge for Medical Decision Support*  
 B. Blobel et al. (Eds.)  
 IOS Press, 2013  
 © 2013 European Federation for Medical Informatics and IOS Press. All rights reserved.  
 doi:10.3233/978-1-61499-240-0-130

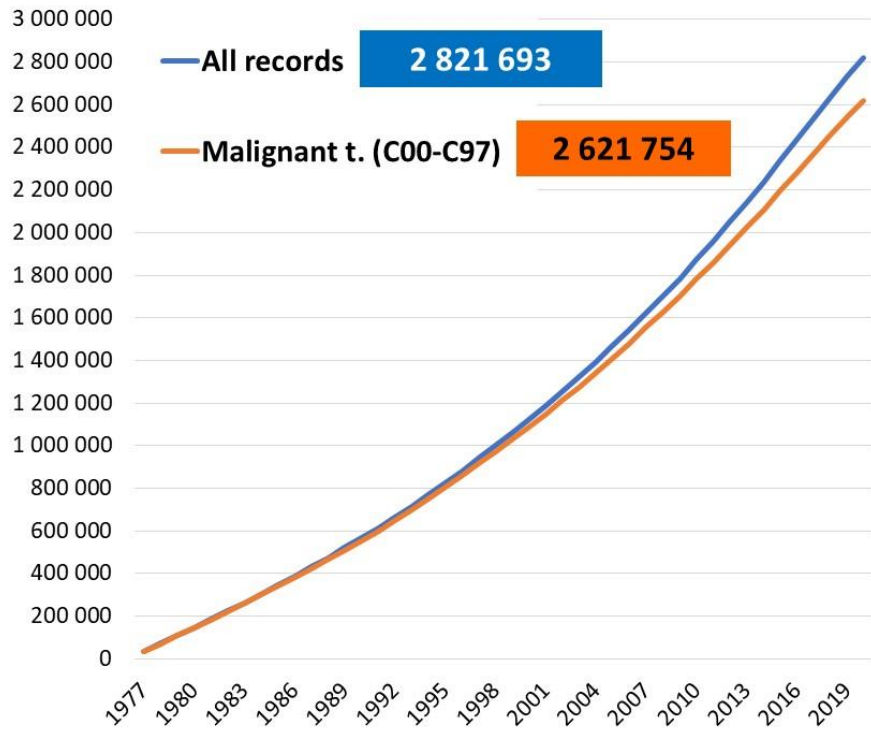
### Project I-COP – Architecture of Software Tool for Decision Support in Oncology

Milan BLAHA<sup>1</sup>, Dalibor JANČA, Petr KLIKA, Jan MUŽÍK and Ladislav DUŠEK  
 Institute of Biostatistics and Analyses, Masaryk University, Brno, Czech Republic

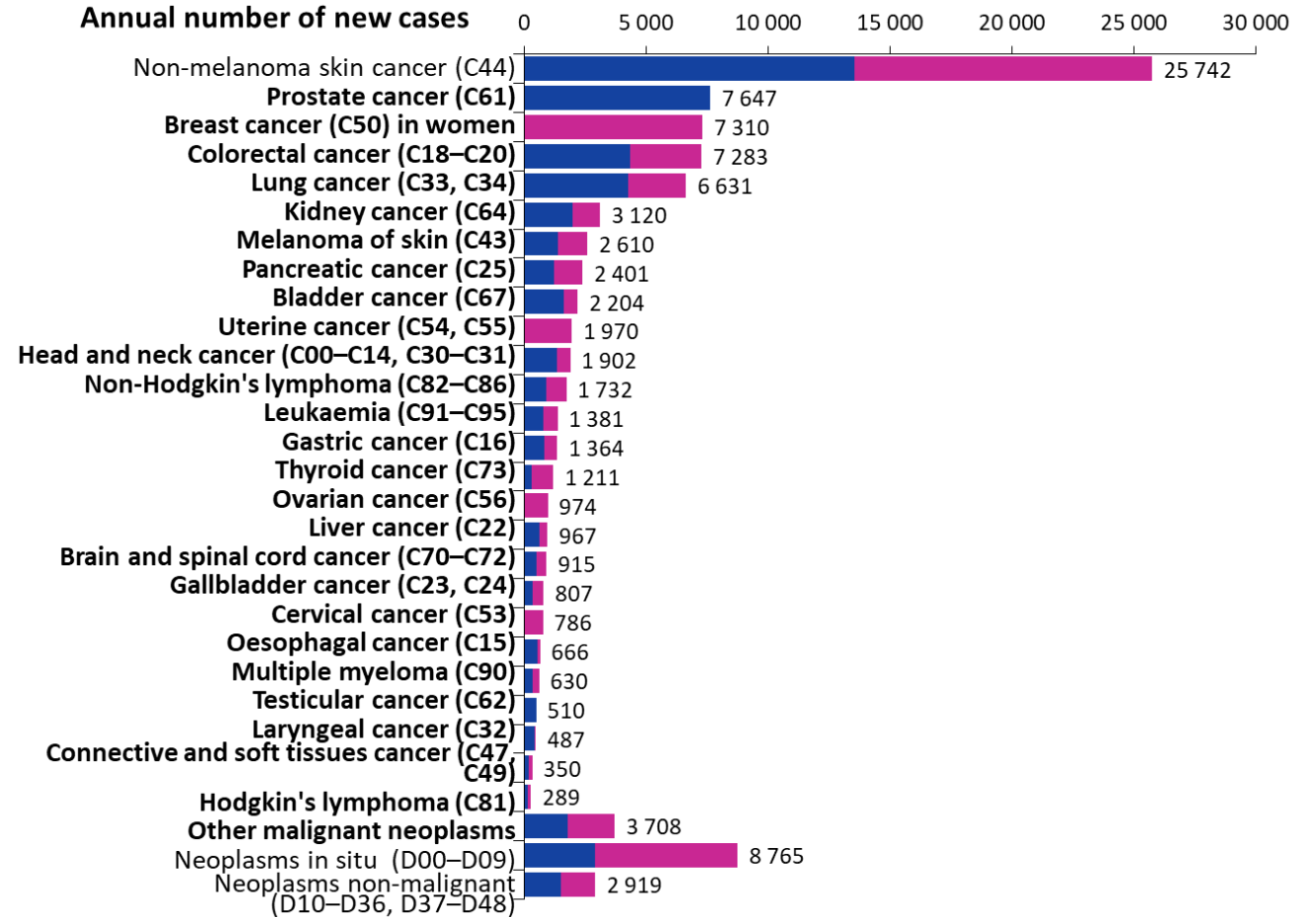
**Abstract:** This article briefly describes the development of the I-COP tool, which is designed to promote education and decision making of clinical oncologists. It is based on real data from medical facilities, which are processed, stored in database, analyzed and finally displayed in an interactive software application. Used data sources are shortly described in individual sections together with the functionality

\* not available for all tumours

# Centralized population-based registry: cancer epidemiology



**1977** →



Absolute counts	2013	2014	2015	2016	2017	2018	2019	2020
Incidence	58 734	58 903	59 528	60 186	60 035	59 325	62 568	57 157
Mortality	26 958	26 910	26 681	27 109	27 183	27 521	28 025	27 841
Prevalence	367 075	381 528	395 891	410 168	423 369	434 966	449 405	457 455

# REFERENCE E-HEALTH DATA SPACE

# INTEGRATED HEALTH CARE SYSTEMS

# SPECIAL SYSTEMS FOR HEALTH CARE PROGRAMS

3 National registry of health care providers



2 National registry of health care professionals



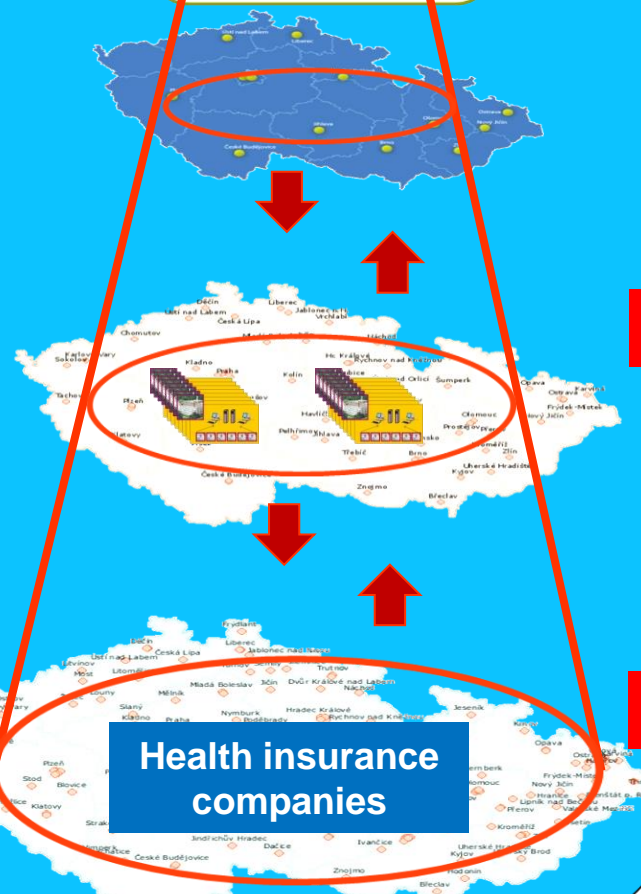
1 National registry of patients (insurees)



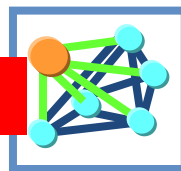
Central repository



Help desk  
Methodical centre



6



Epidemiology  
Population-based registries

Population and treatment burden  
Population-based indicators

5



Clinical and laboratory IT systems

Hospital information systems  
Clinical and laboratory system

4



Monitoring of health care  
EHR

All reimbursed health services  
Primary care, Hospital care

Support of organized health care programs

8

Screening programs  
Palliative care

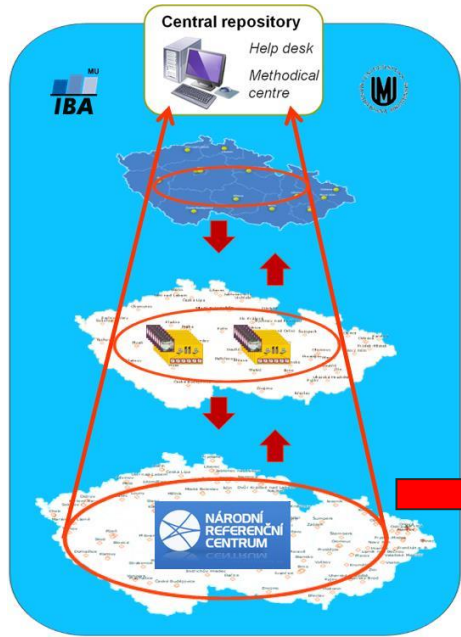
Economic systems  
Cost of care

7

CZ-DRG, sentinel networks of providers

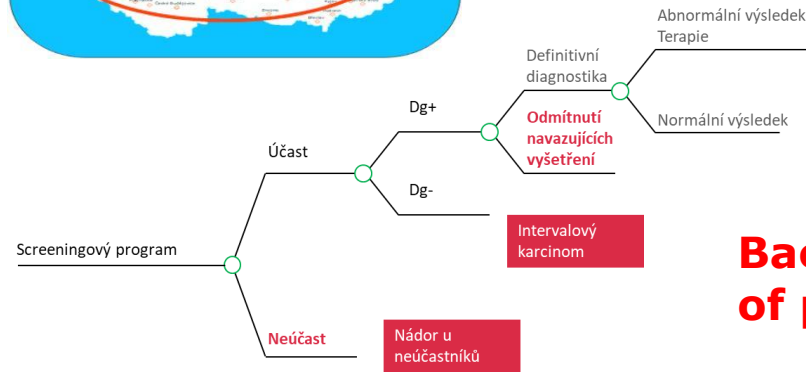


# System for management and evaluation of organized screening



**Common SW for all providers and insurance companies**

**Selection of people to be addressed**

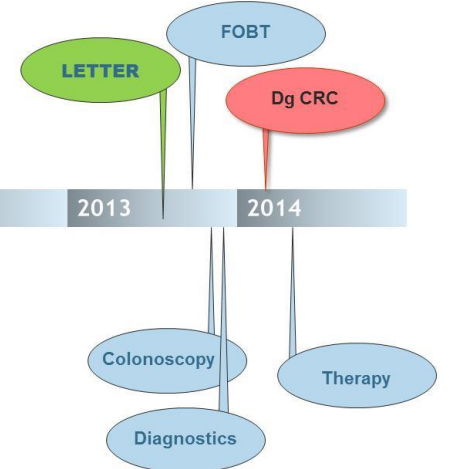
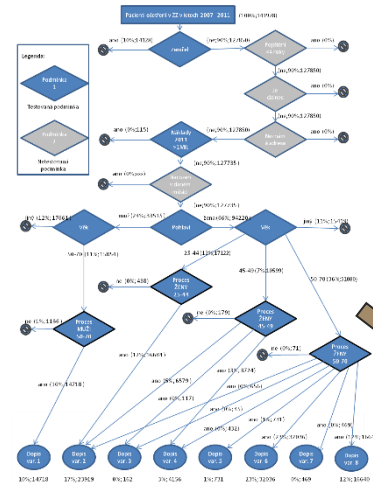


Karcinom nalezený ve screeningu

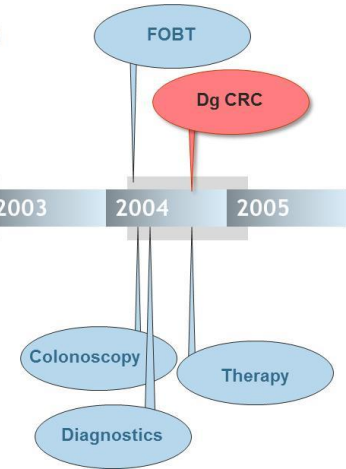
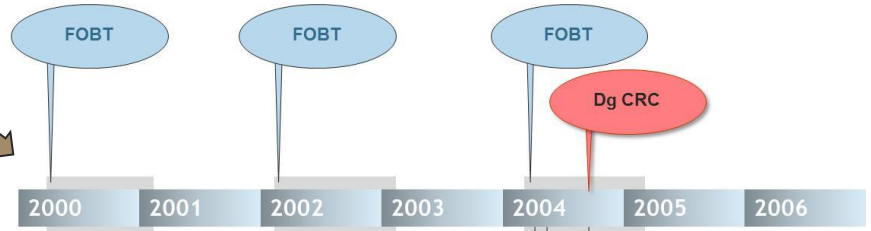
Intervalový karcinom

**Backward monitoring of personalized trajectories**

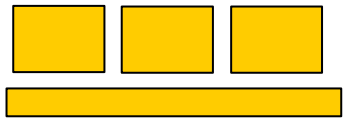
**PROSPECTIVE MODE**



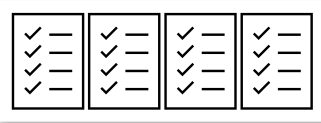
**RETROSPECTIVE MODE**



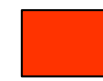
# System for management and evaluation of end-of-life care



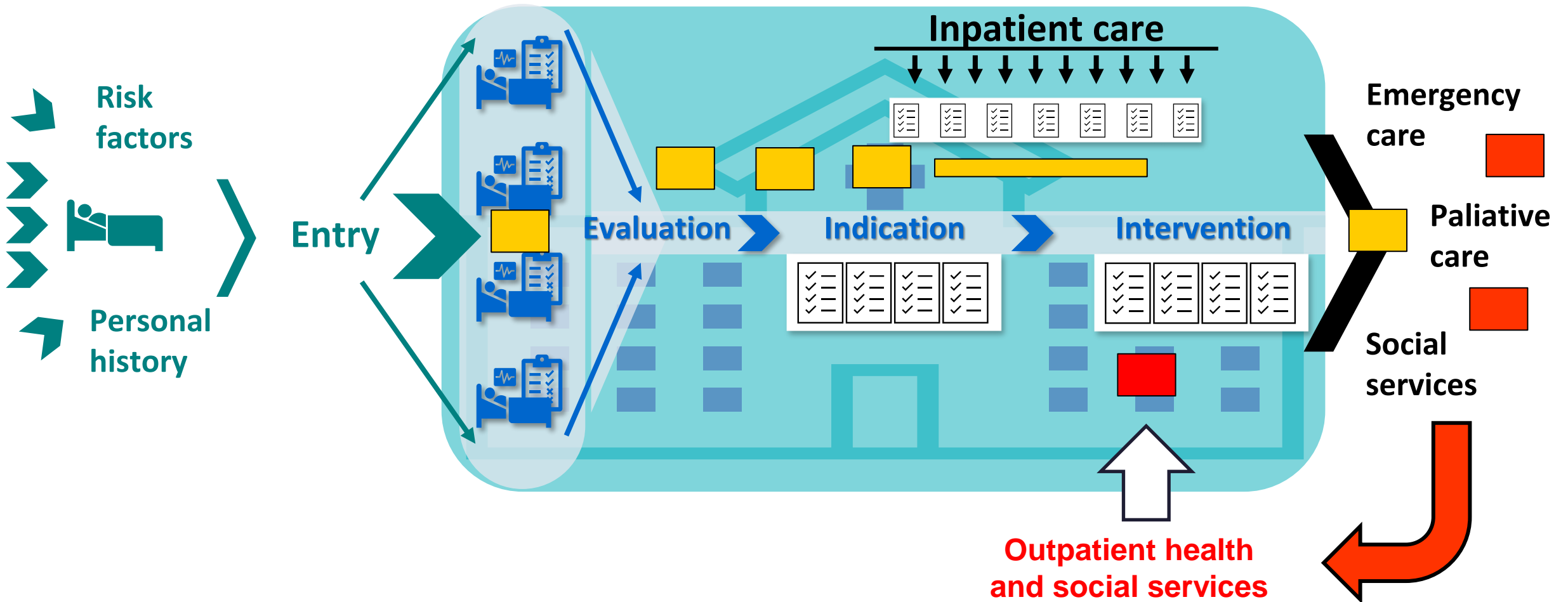
Questionnaires  
QL monitoring



DWS of health care  
provider



End of life care  
Trajectories  
Feedback  
assessment



# Data rich -> information rich: ANALYTICAL SERVICES & OUTCOMES

Cost

Budget impact

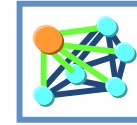
HTA

Clinical trajectory

AE/ relapses / .....  
Outcomes

Risk stratification

CCCN Pilot Model – Reporting Standards.  
In EU Guide on Quality Improvement in  
Comprehensive Cancer Control.



Population data



Clinical data /EHR/



Specialized registries (surveys)



Equity Performance

Accessibility of care, networking of providers  
Volume of care

Consumption rates, migration of patients

Social & demographic typology of treated patients



Patient pathways

(Re)distribution of care  
Inter-regional migration for care

Pathways: primary and follow-up care

Pathways: specific therapeutic procedures / drugs



EBM Standardized protocols

Compliance to protocol(s)  
Patient flow

Performance of tumor management teams

Time aspects of diagnostics, staging, follow-up



Safety, efficacy Patient centredness

Population-based indicators: e.g. mortality and survival

Hospitalization-related safety and outcome measures

Clinical trials  
Adverse events, Patient's satisfaction and QL

# Examples of reporting generated by the Czech National Cancer Control System: I. Population level

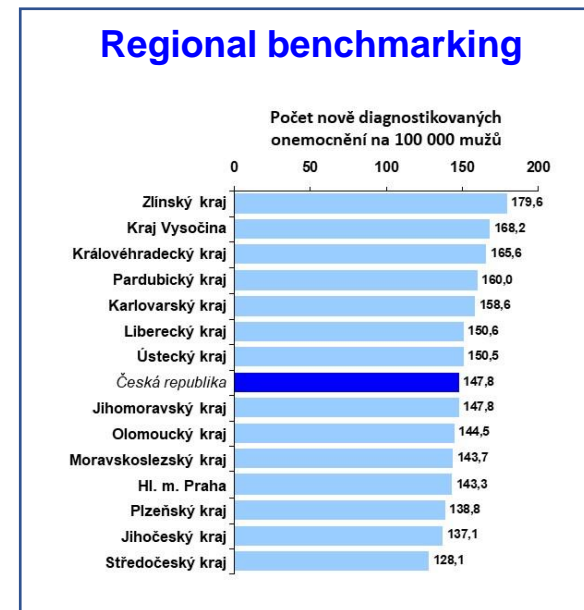
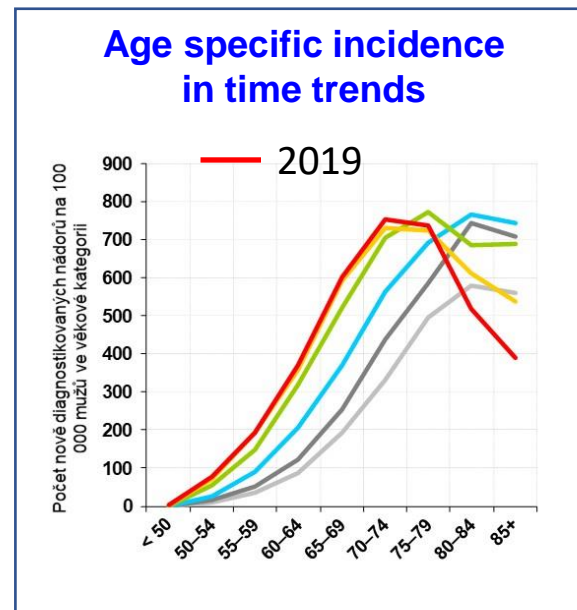
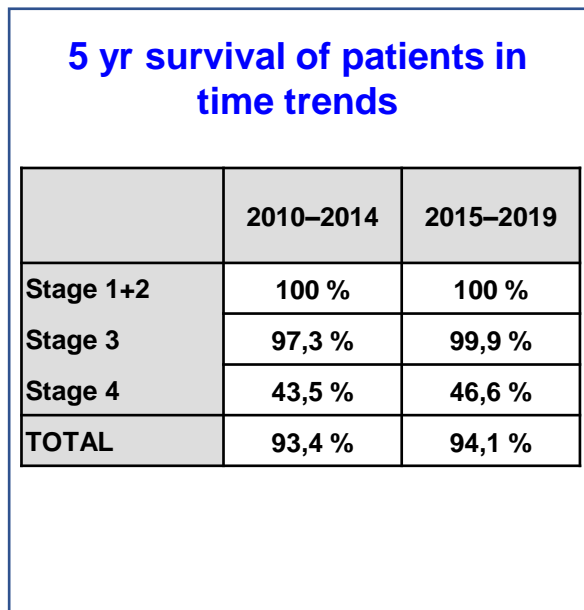
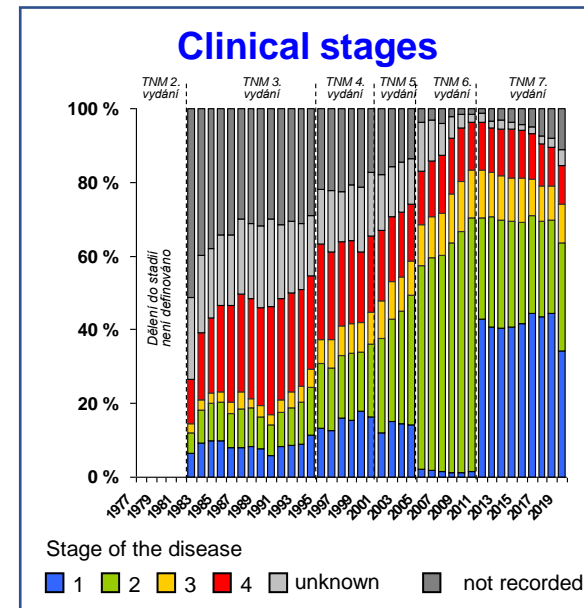
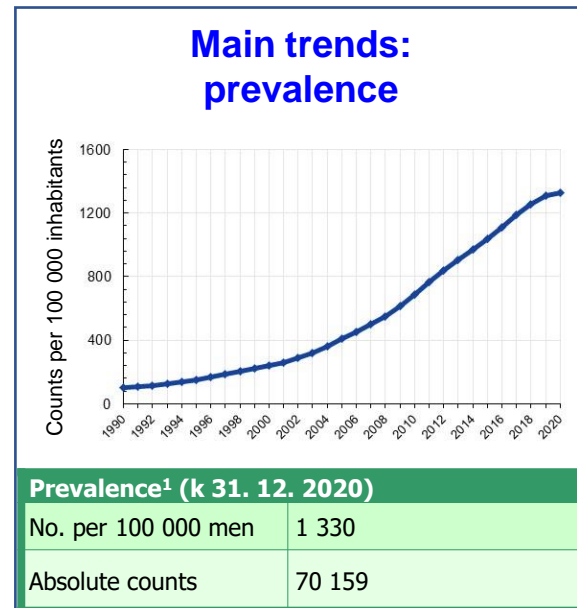
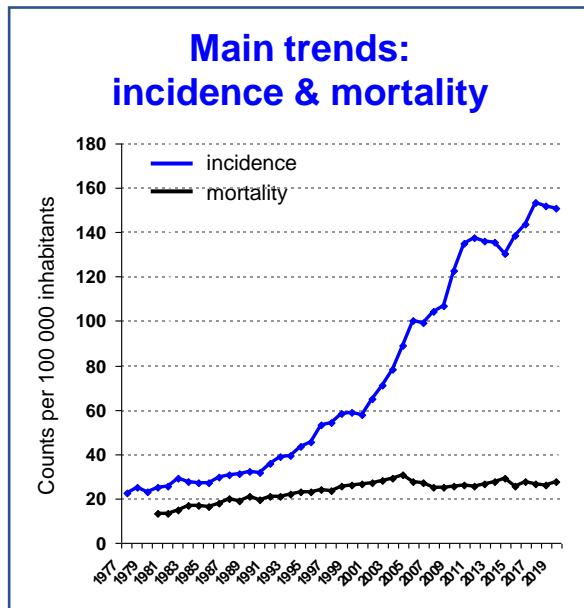
## Model of prostate cancer (C61)

Stages	Predicted incidence 2022	
	Incidence	(90% CL)
Stage I+II	5 132	(4 680; 5 585)
Stage III	643	(587; 699)
Stage IV	817	(727; 907)
<b>TOTAL</b>	<b>7 566</b>	<b>(6 754; 8 377)</b>

Stages	Predicted prevalence 2022	
	Prevalence	(90% CL)
Stage I+II	60 460	(60 056; 60 864)
Stage III	9 152	(8 995; 9 309)
Stage IV	5 676	(5 552; 5 800)
<b>TOTAL</b>	<b>81 434</b>	<b>(80 965; 81 903)</b>

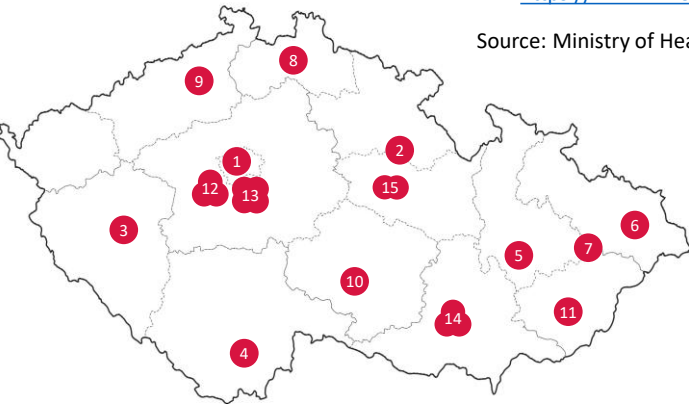


Some highly organized program of early detection is needed (Van Poppel, H. et al. European urology vol. 79,3 (2021): 327-329)



# Examples of reporting generated by the Czech National Cancer Control System: II. Hospital level

## Networking of CCCs Regional CCCNs



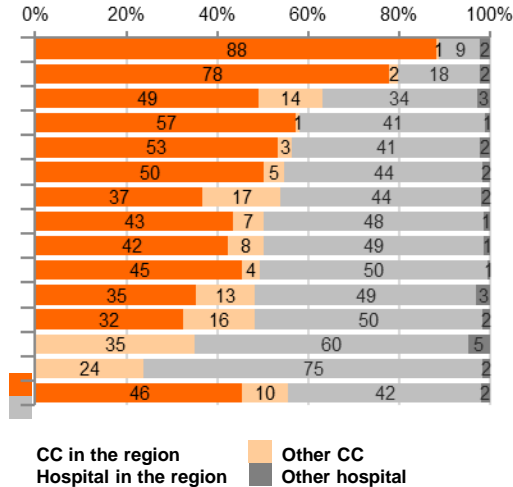
Updated according to  
<https://www.linkos.cz>

Source: Ministry of Health

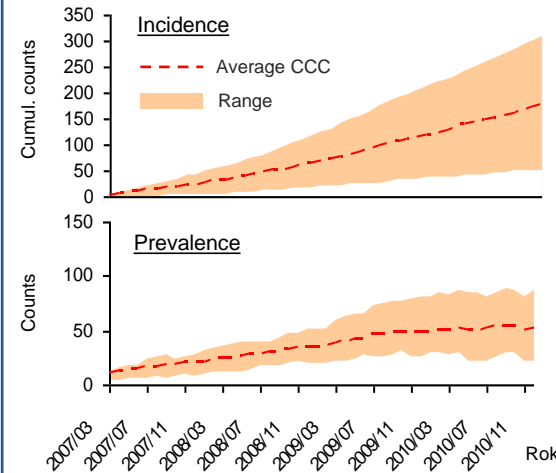
[www.onconet.cz](http://www.onconet.cz)

[www.linkos.cz](http://www.linkos.cz)

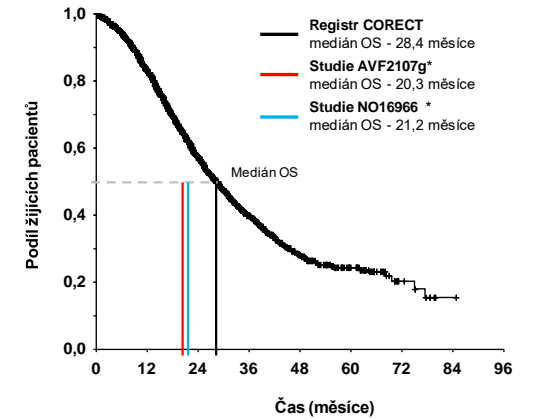
## Distribution of care among regions/centers



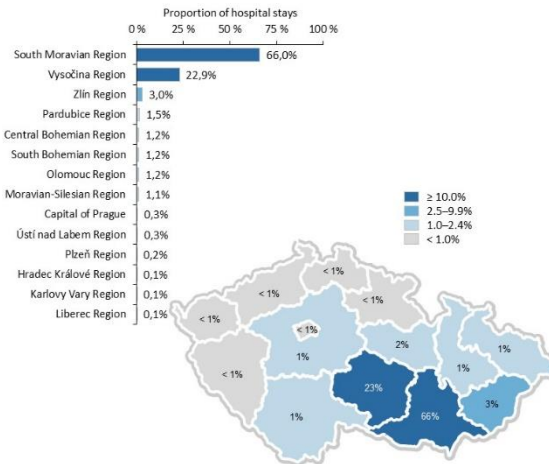
## Volume of care: capacity benchmarking



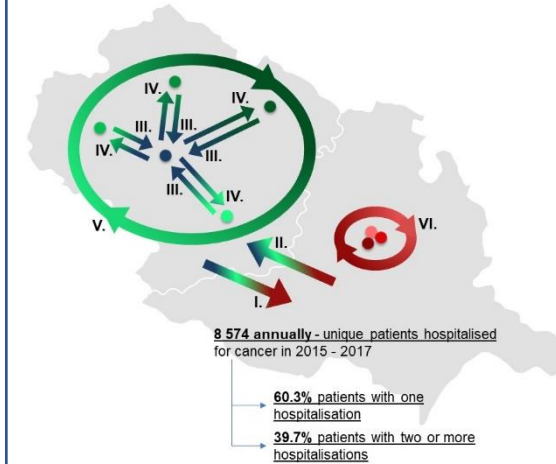
## Benchmarking of survival after given medication



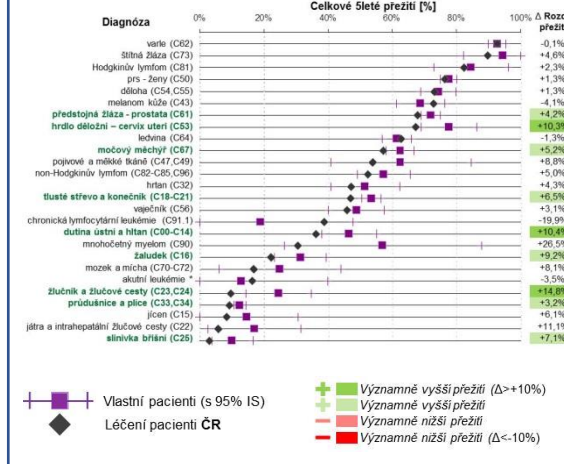
## Catchment area of centers and hospitals



## Trajectories - patient's pathways



## Outcome measures: 5yr survival – benchmarking



# Examples of reporting generated by the Czech National Cancer Control System: III. Screening programs

Model diagnosis: colorectal cancer

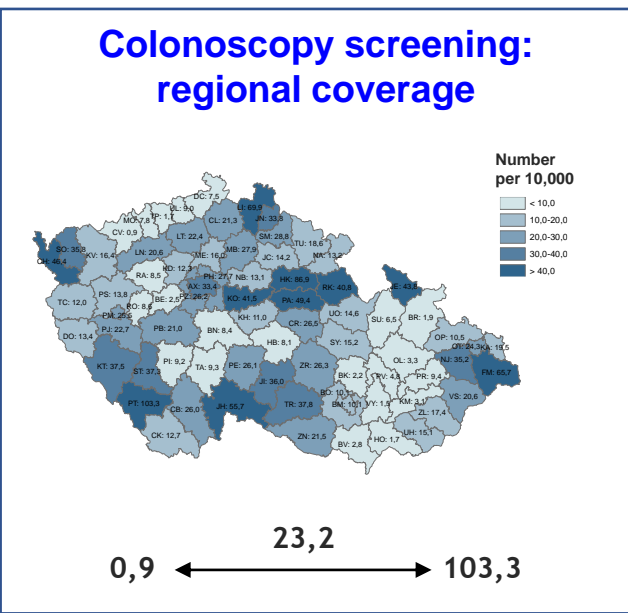
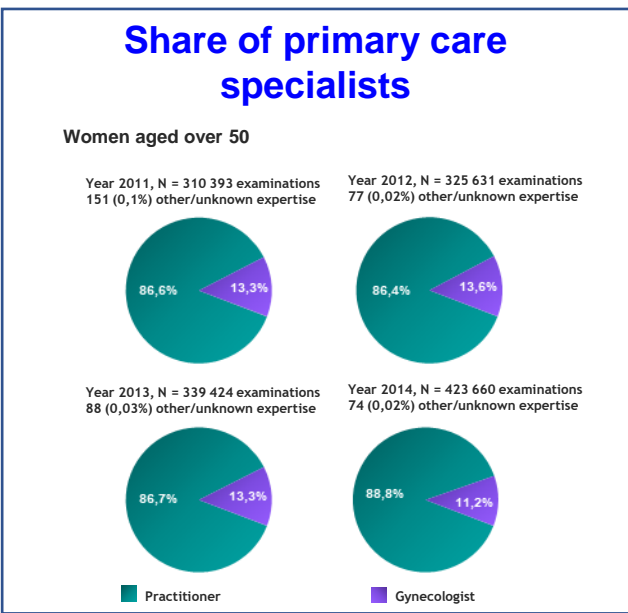
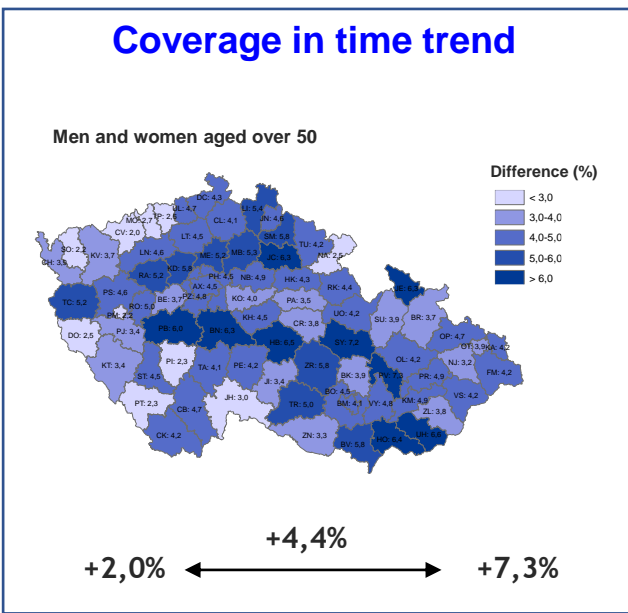
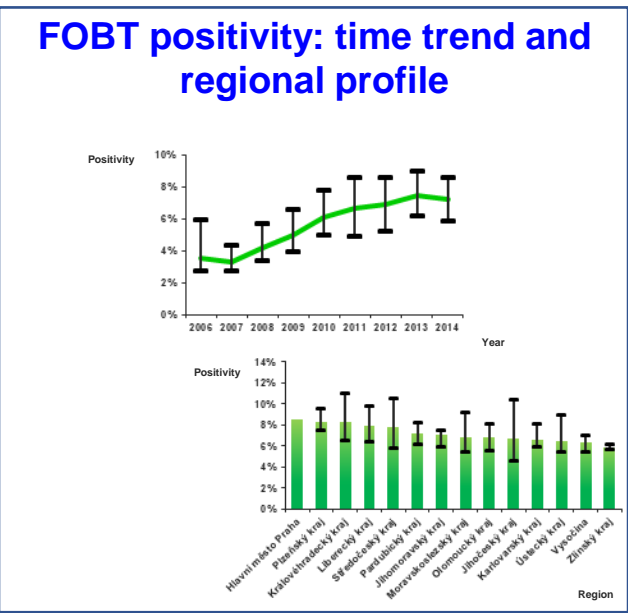
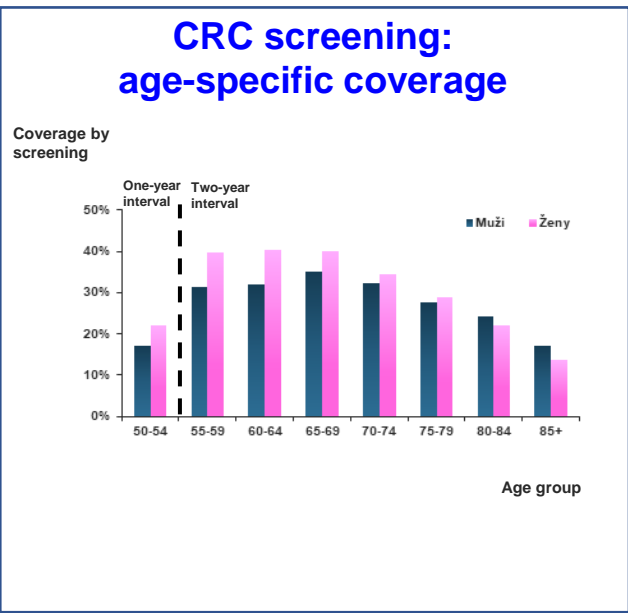
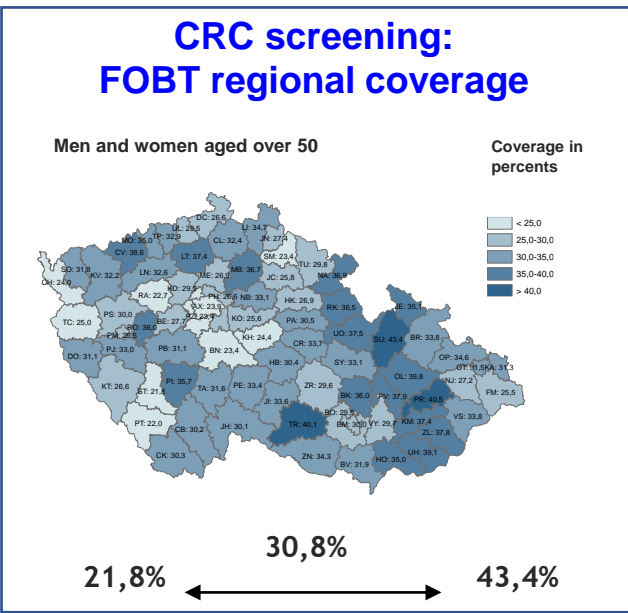


<https://nsc.uzis.cz>

[www.mamo.cz](http://www.mamo.cz)

[www.kolorektum.cz](http://www.kolorektum.cz)

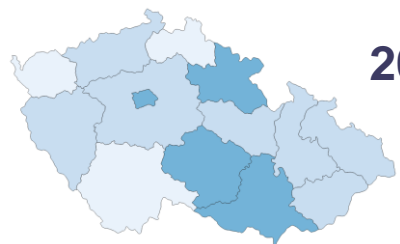
[www.cervix.cz](http://www.cervix.cz)



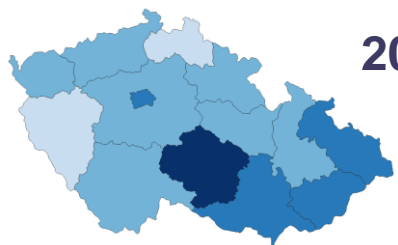
# Examples of reporting generated by the Czech National Cancer Control System: IV. Palliative care

System controlling data reports over end-of-life care

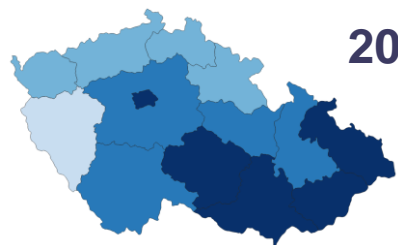
## Rising capacity of mobile palliative care



2017

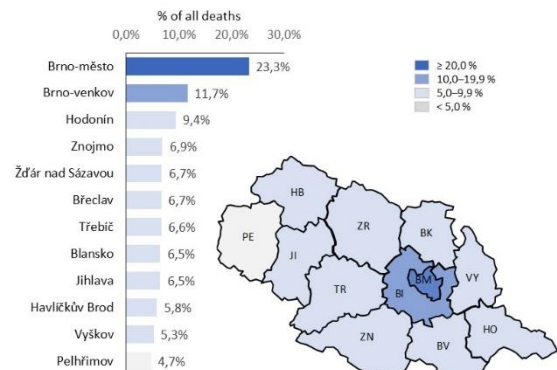


2019

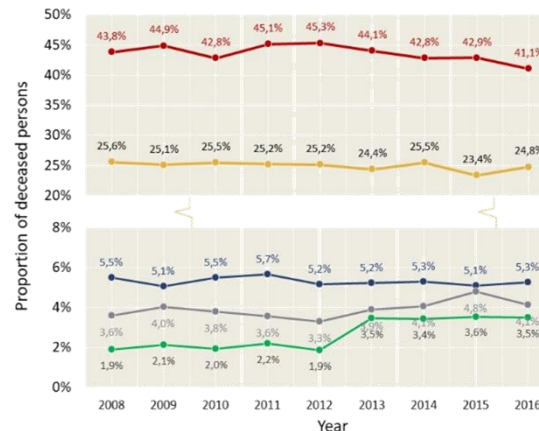


2021

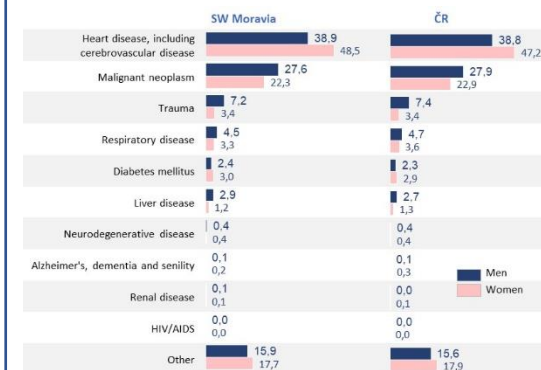
## Mortality rates: migration



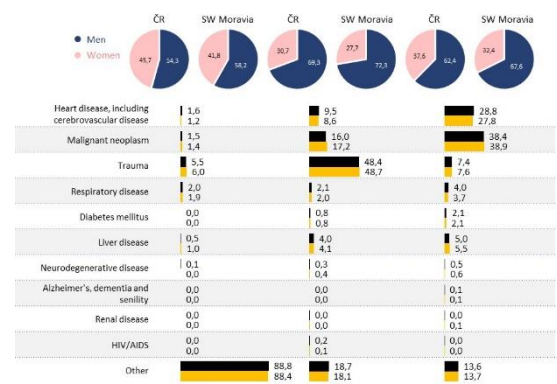
## Main causes of death in time trends



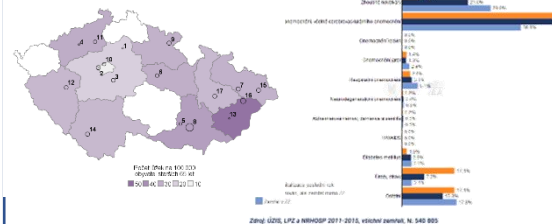
## Main causes of death by sex: population benchmarking



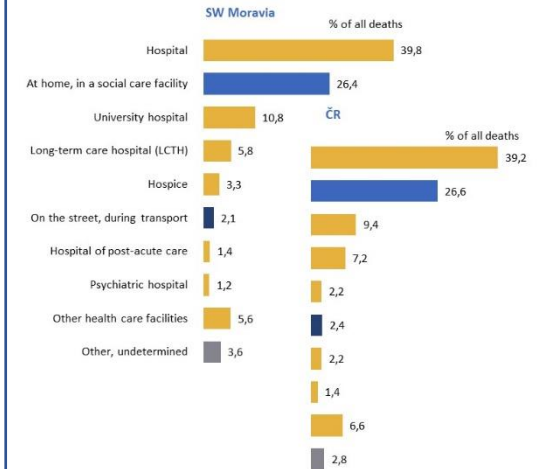
## Main causes of death by primary cancer diagnosis



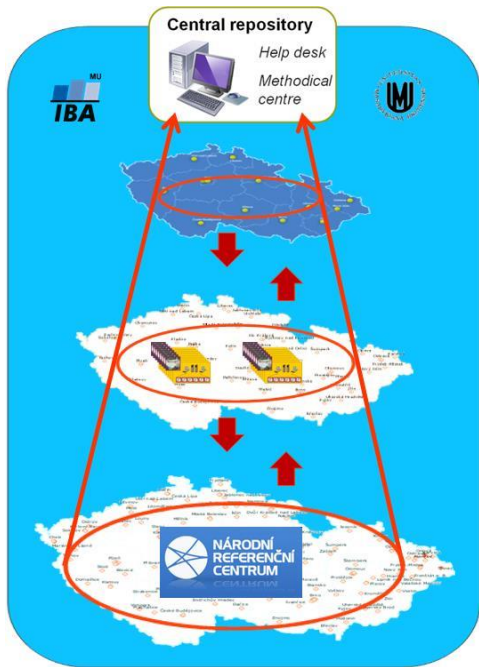
## Capacity building palliative care



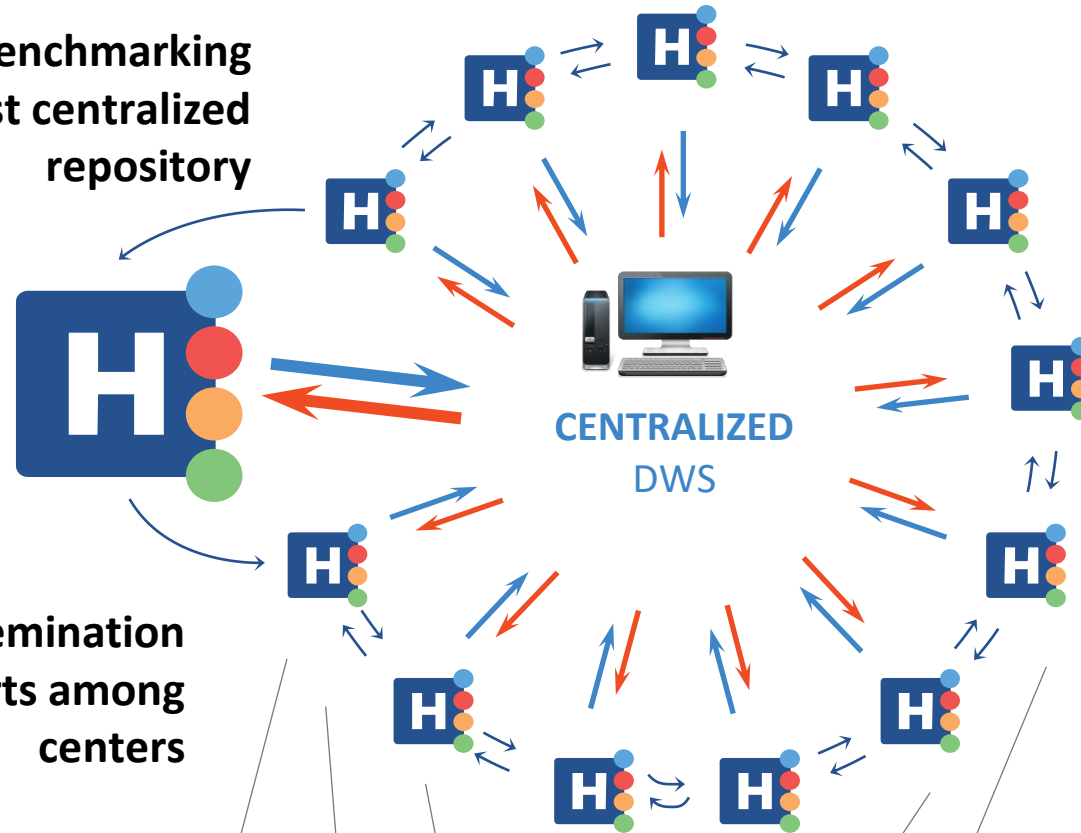
## Place of end-of-life care: type of health care facility



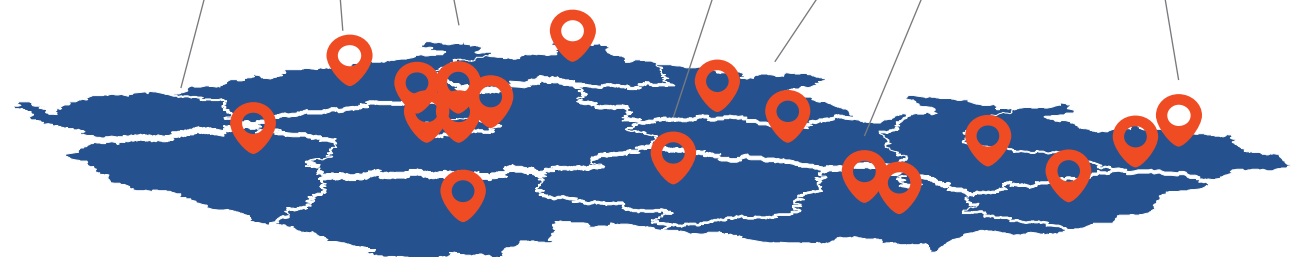
# Information rich for everyone: ON-LINE REPORTING & OPEN DATA



Self – benchmarking  
against centralized  
repository



Dissemination  
of reports among  
centers





# ON-LINE REPORTING & OPEN DATA

http://www.cba.muni.cz - SVOD analýza - Microsoft Internet Explorer

INCIDENCE A MORTALITA - vývoj v čase

Zvolte požadovanou diagnózu

VIII. NÁDORY UROGENITÁLNÍHO SYSTÉMU

C60 - ZN pyje  
C61 - ZN předstojné žlázy - prostaty  
C62 - ZN varlata

Zobrazit kategorie diagnóz

http://www.cba.muni.cz - SVOD analýza - Microsoft Internet Explorer

INCIDENCE A MORTALITA - vývoj v čase

Výběr skupiny pacientů

Pohlaví, věk Region Období  
Stádium TNM klasifikace Další parametry

Dašší analýzy pro vybranou diagnózu a skupinu pacientů

C64 - ZN ledviný nio páničku - Incidence  
regionální přehled die přečtu na 100 000 osob za období 1977-2002

C64 - ZN ledviný nio páničku - časový vývoj

Změnit diagnózu Nastavení analýzy

http://www.cba.muni.cz - SVOD analýza - Microsoft Internet Explorer

REGIONÁLNÍ PŘEHLEDY

Výběr skupiny pacientů

Pohlaví, věk Region Období  
Stádium TNM klasifikace Další parametry

Dašší analýzy pro vybranou diagnózu a skupinu pacientů

C64 - ZN ledviný nio páničku - Incidence  
regionální přehled die přečtu na 100 000 osob za období 1977-2002

C20 - ZN konečníku - recta  
vývoj zastoupení stadií

Změnit diagnózu Nastavení analýzy

uroweb.cz

Kidney cancer Bladder cancer Prostate cancer Testicular cancer General overview

Epidemiology and population-based data CZ International epidemiology data Regional reporting CZ Prediction of number of treated patients Diagnostics and early detection Therapeutic procedures and standards Monitoring of results and quality of care Projects, analyses, and publications

Project description  
Analyses and publications  
Data sources and clinical registries  
Data sources and registries CZ  
International data sources  
Evidence-based medicine  
Library of chemotherapy regimens  
Research projects  
Urological cancers facilities  
Information links  
Contacts

Epidemiology and population-based data CZ  
Intro page for each diagnosis – selection of epidemiological analyses

- TIME TRENDS OF INCIDENCE AND MORTALITY
- TIME TRENDS OF PREVALENCE
- AGE STRUCTURE OF DIAGNOSED AND DECEASED PATIENTS
- AGE-SPECIFIC INCIDENCE AND MORTALITY
- INCIDENCE AND MORTALITY IN REGIONS
- PROPORTION OF CLINICAL STAGES
- STAGE-SPECIFIC TRENDS OF INCIDENCE
- TUMOURS MORPHOLOGY – OVERVIEW

http://www.rektum.cz

C19-C20 - ZN rektosigmoidního... muži  
Kumulativní riziko vzniku onemocnění (C3)

C20 - ZN konečníku - recta  
vývoj v čase

Výběr skupiny pacientů

Pohlaví Věk Období Stádium T.N.M.

rok	1990	1991	1992	1993	1994	1995	1996	1997	1998
incidence	15,76	16,45	16,8	17,11	16,36	16,72	19,44	20,06	21,01
mortalita	11,68	12,02	12,02	11,64	11,9	12,91	12,43	12,44	12,93

rok	1999	2000	2001	2002	2003	2004	2005	2006	2007
incidence	20,33	20,91	21,08	22,46	23,95	22,11	21,99	20,95	20,94
mortalita	13,92	12,45	12,97	13,16	12,25	12,45	12,38	12,02	11,79

zdroj dat: ÚZIS ČR

http://www.rektum.cz

C20 - ZN konečníku - recta - incidence

analýzovaná data: N=56141 zdroj dat: ÚZIS ČR

http://www.rektum.cz

C20 - ZN konečníku - recta - incidence

analýzovaná data: N=56141 zdroj dat: ÚZIS ČR

www.svod.cz

www.uroweb.cz

Dušek L et al. Epidemiology of Malignant Tumours in the Czech Republic [online]. Czech Republic. ISSN 1802 – 8861.

Mužik J. et al Uroweb: portal of epidemiology, diagnostics and treatment of urological cancers. ISSN 1804-6371

# ON-LINE REPORTING & OPEN DATA

<http://nrpzs.uzis.cz>

National registry  
of health care  
providers

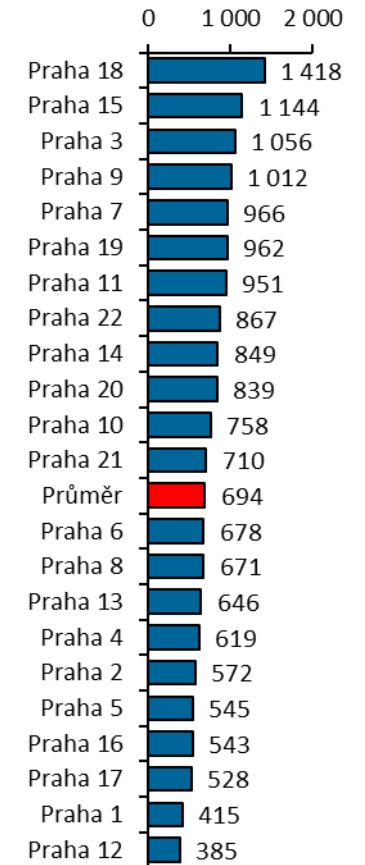
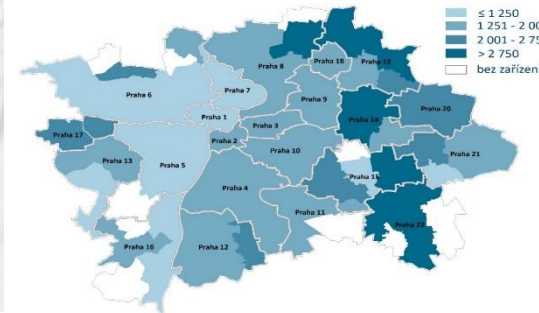


National registry  
of health care  
professionals

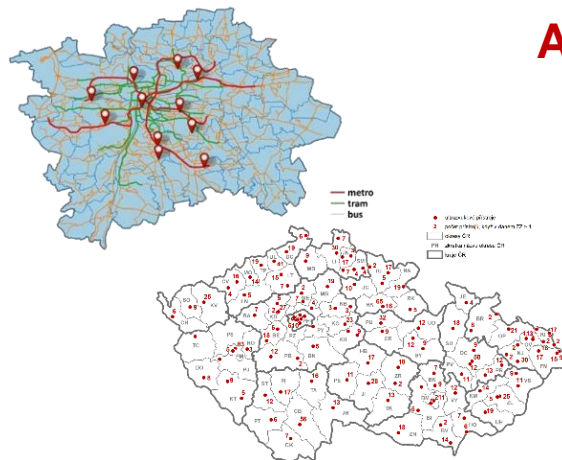


Národní registr poskytovatelů zdravotních služeb (NRPZS) poskytuje kompletní přehled o všech poskytovatelích zdravotní péče v České republice, bez ohledu na jejich zřizovatele. Poskytuje údaje o profilu a rozsahu poskytované jednotlivými zdravotnickými zařízeními, obsahuje kontaktní údaje na daná zdravotnická zařízení a další podrobnější informace.

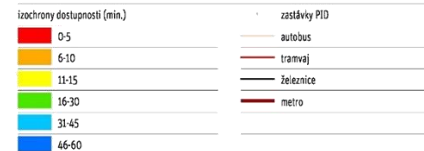
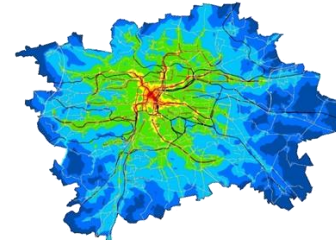
## Health care networks and infrastructure



## Accessibility of services



Dostupnost do centra Prahy prostředky PID v kombinaci s pěší docházkou ke stanicím



Regional models  
of cancer care, presenting  
professionals  
and navigating patients



# Regional models of cancer care

[www.onconet.cz](http://www.onconet.cz)

**NATIONAL CANCER CONTROL PROGRAMME** ISSN 1802-887X

comprehensive cancer care | national cancer control programme | data and background information

### South Moravian Region

**Type of health care facility**

- Constituent parts of CCCs [n=3]
- Children's cancer centres [n=1]
- Haemato-oncology centres [n=1]
- Facilities cooperating with CCCs [n=16]
- Mammography screening centres [n=8]
- Colonoscopy screening centres [n=19]
- LCTHs and hospices [n=10]
- Display all [N=58]

Map of all health facilities providing cancer care in this region

Diagram of cancer care in this region:

Cancer Centres in this region:

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

News from the region

9.10.2014 **Description of cancer care in the South Moravian Region**  
Cancer care is provided by CCC of Masaryk Memorial Cancer Institute Brno in cooperation with University Hospital Brno and St. Anne's University Hospital.

Map of facilities involved in comprehensive cancer care

Types and numbers of facilities

Diagram of cancer care

Link to a regional Cancer Centre

Regional news

Detail of a health care facility

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

**Basic characteristics**

Back and outpatient departments:  
Total number of beds available for cancer patients: 230  
Total number of oncology outpatient departments: 24

**Medical equipment:**

- Spiral computed tomography: 1
- MRB: 1
- PET: 1
- Classical mammography machine: 1
- Digital mammography machine: 1
- Endoscopic ultrasound (EUS): 1

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

**Clinical trials and implementation of new procedures**

The centre has a local ethical committee at its disposal.

The centre is willing and has the capacity to take part in new multicentre clinical trials and registries:

Number of clinical trials being conducted in compliance with the Good Clinical Practice in which the centre currently participates:

- Phase I: Total number: 1
- Phase II: Total number: 23
- Phase III: Total number: 21
- Phase IV: Total number: 1

The centre is involved in Czech or international clinical registries:

Project: Identification of project organizers: Diagnosis of registered patients: The centre has been actively participating in the registry since:

Registry	Prof. MUDr. Rostislav Vysloužil, CSc.	C18-20, C25, C34, C46, C48, C56, C44	2008
----------	---------------------------------------	--------------------------------------	------

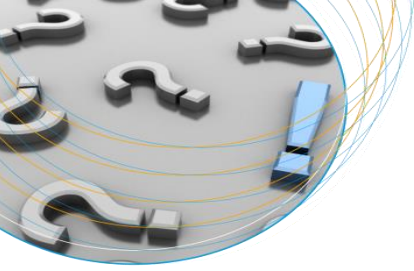
The centre actively participates in prevention programmes:

- Primary prevention: esophageal screening, colorectal carcinoma, Shd II Out, counselling service on healthy diet and lifestyle
- Secondary prevention: mammography screening, colorectal carcinoma, melanoma treatment, seniors

The centre organizes its own projects of a nationwide significance in the following areas:

- Diagnoses pathology: radiodiagnosis, nuclear medicine, chemistry
- Therapy: chemotherapy, radiation therapy, biological therapy
- Genomics and proteomics
- Pharmacogenetics

Dušek L. et al. Comprehensive Cancer Care Network – a model [online], Masaryk University, 2017 [cit.15. 02. 2018]. Available from WWW: <http://cccn.onconet.cz>. 2018 | created by IBA FM MU



## Current challenges .....



*New era of data  
sharing*

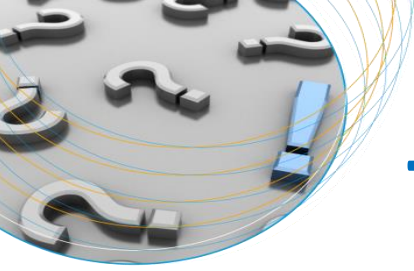
Implementation of **data protection policies** without lost of information, secondary data processing and sharing

*Personalized  
interventions*

**Personalized prevention, well targeted, including screening programs**

*Interoperability  
eHealth standards*

**Primary data standardization** with respect to diagnostic and clinical guidelines



# Thank to our partners for valuable support



**Prof. Dr. Tit Albreht**



**Prof. Dr. Ahti Antilla**



**Prof. Dr. Lucio Luzzatto**



**Prof. Dr. Reinhold Stockbrügger**



**Prof. Dr. Thierry Ponchon**

# Thank you for your kind attention