

# CANCON - WP6

## Pilot model of CCCN in the Czech Republic *Progress Report -> 11/2016*



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[www.iba.muni.cz](http://www.iba.muni.cz)





# PILOT CCCN -> Main PRINCIPLES Adopted

## CONTRACT – BASED transformation

CCC(s)



CCCN(s)

Common **information system**

Organized structure (**multi-tier model**)

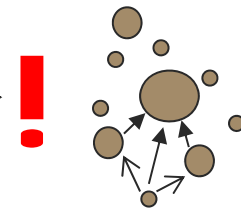
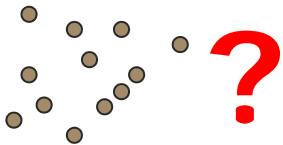
Implemented **cancer management protocols**

**Multidisciplinary assessment** of patients (CCs boards)

Common governance including control (**QA/QC indicators**)

Quantified and **mapped collaboration** with neighboring regions

Emphasis on **complexity of the system**: process and segment coverage





## Pilot project tasks



- **Comprehensive mapping** of already functional infrastructures and facilities, **quantification of capacity in cancer care**

-> portal [www.onconet.cz](http://www.onconet.cz) finished



- **Legislative background (innovative laws) for:**

-> reference networks of centers in the health care system

-> centralized information system & processing of data






- **Organization of cancer care in model (pilot) regions,** definition of cancer care needs, workshops, implementation of governance rules, patients' pathways, etc.

-> on-line system for publishing: [www.onconet.cz](http://www.onconet.cz)



## Pilot project tasks

-  • **Complex information system** capable to representatively control cancer care in regions
  - > **newly generation of reporting**
  - > **QA/QC implementation**
-  • **Survey on management protocols and diagnostic/clinical standards** to be adopted in common governance of CCCN(s)
  - > **on-line system for publishing**
  - > **portal [www.cccn.onconet.cz](http://www.cccn.onconet.cz) – established / fulfilled**
-  • **Legal establishing model CCCN in defined region**



## Established Pilot CCCN

- written agreement
- CCCN structure
- CCCN territory

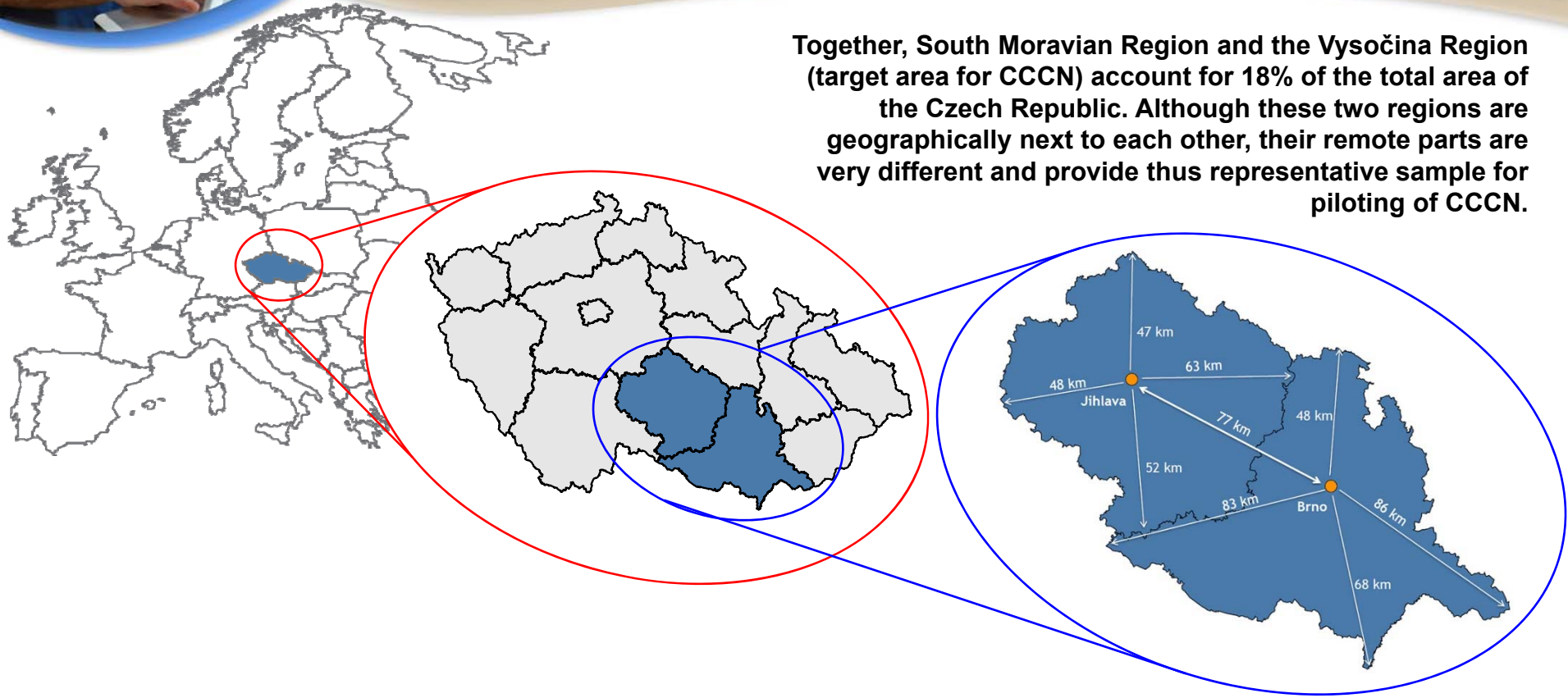


Spatially closed, geographically interconnected regions

Fully representative demographic, social and epidemiologic attributes

Sufficient demographic mass of people (patients)

# Target area of CCCN



Together, South Moravian Region and the Vysočina Region (target area for CCCN) account for 18% of the total area of the Czech Republic. Although these two regions are geographically next to each other, their remote parts are very different and provide thus representative sample for piloting of CCCN.

|  | South Moravian Region | Vysočina Region | Both regions |
|--|-----------------------|-----------------|--------------|
| Population (as of 31/12/2015)                        | 1 175 025             | 509 475         | 1 684 500    |
| Area (km <sup>2</sup> )                              | 7 195                 | 6 796           | 13 991       |
| Population density (per km <sup>2</sup> )            | 163                   | 75              | 120          |
| Number of districts                                  | 7                     | 5               | 12           |
| Number of municipalities                             | 673                   | 704             | 1 377        |
| Total length of roads and motorways (km, estimation) | 4 500                 | 5 000           | 9 500        |
| Total length of railway network (km, estimation)     | 800                   | 650             | 1 450        |

# Pilot CCCN: South Moravian Region and Vysocina Region – cancer care infrastructure

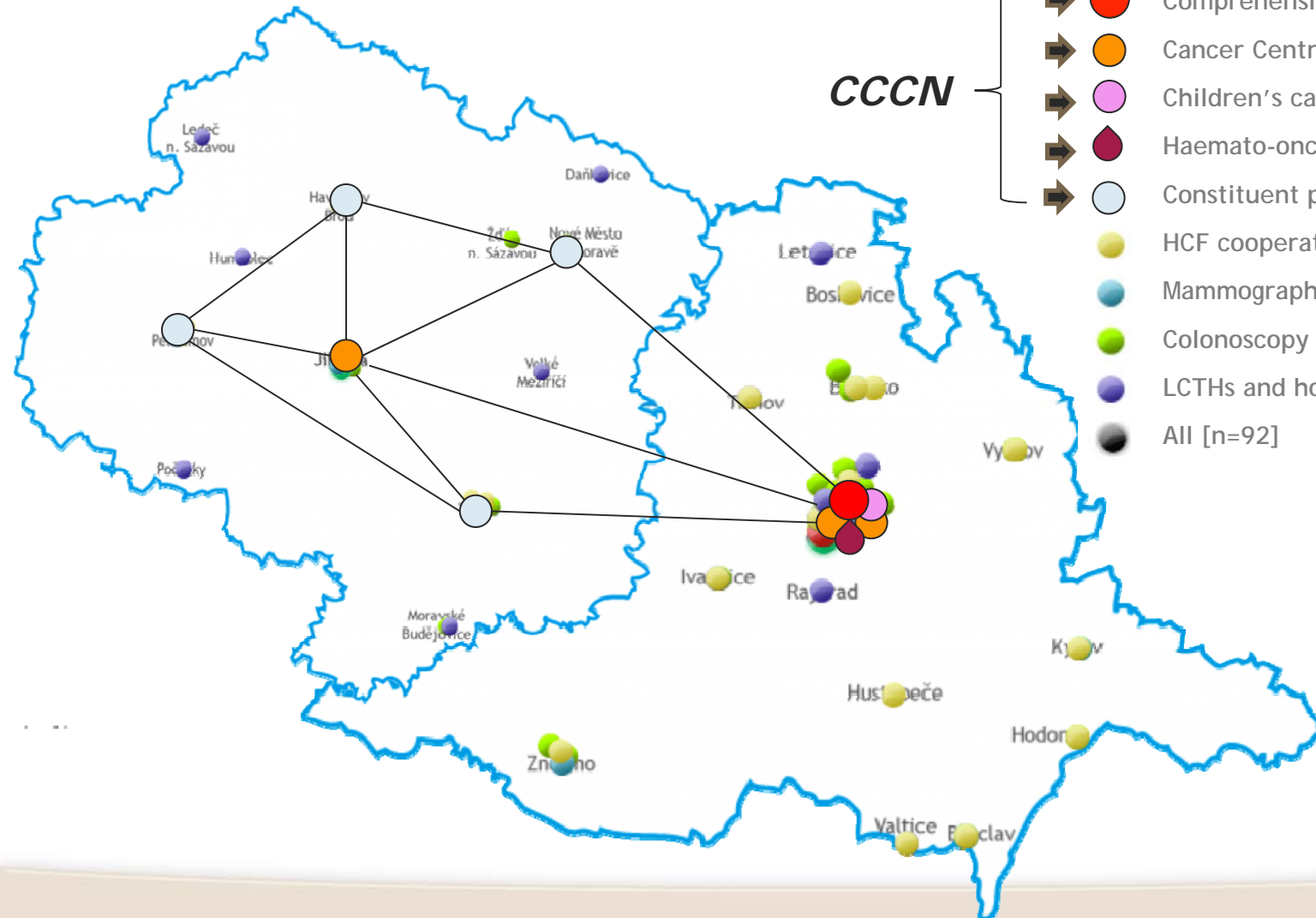


[www.onconet.cz](http://www.onconet.cz)

## Type of health care facility

**CCCN**

- ➔ ● Comprehensive Cancer Centre [n=1]
- ➔ ● Cancer Centres [n=3]
- ➔ ● Children's cancer centres [n=1]
- ➔ ● Haemato-oncology centres [n=1]
- ➔ ● Constituent parts of CCCN [n=4]
- HCF cooperating with CCs [n=20]
- Mammography screening centres [n=13]
- Colonoscopy screening centres [n=29]
- LCTHs and hospices [n=20]
- All [n=92]



# Practical implementation = contract partners

## Common governance – given structure – multidisciplinary assessment

On the below day, month and year, the participants, healthcare providers:

hereinafter referred to as "Providers"

and with the participation of the founder

Kraj Vysočina (Vysočina Region)

hereby and duly enter into this

### Cooperation Agreement

of

### Cooperating Cancer Care Network (KOS) Vysočina

#### Preamble:

The concept of cancer care development, better availability and the quality of cancer care are 1 main priorities of the European health policy for the period 2014–2020. The main objectives of t policy and related projects have been defined pursuant to the outcomes of the large all-Europe project EPAAC (European Partnership for Action against Cancer). In the field of cancer c organization, the main current challenge is the transition from solitary comprehensive cancer cent to regional or trans-regional networks of comprehensive cancer care. Methodical preparation of t transformation and its piloting is one of the key tasks of the current all-European program CANC (Cancer Control Joint Action; <http://www.cancercontrol.eu>) in which the Czech Republic also plays important role. Based on its infrastructure readiness and unique information system, the Cz Republic was chosen as a pilot model for the implementation of the above transformation, usin model of selected regions. The Vysočina Region has been identified as one of them; it can therefore, stated that the transformation of cancer care organization in this region will fulfil one the strategic objectives of the all-European policy in this area. Methodological findings from this pi could be presented to the entire community and raise the prestige of the cancer care organizator model areas.

Assumptions for the functional comprehensive cancer care network

The main prerequisites for the successful establishment and sustainability of the comprehensive cancer care network are as follows:

1. Respect for the existing facilities and infrastructures. The establishment of a network of centres does not infer their forcible merger or cancellation; on the contrary, the functional network aims to maximize the use of available capacities and know-how throughout the region.
2. Evolutionary, rather than revolutionary, transition of the entire network to full functionality. Individual capacities gradually optimise on the basis of mutual cooperation so that, for example, the changes in the place of providing certain services are gradual and acceptable also for patients already treated.
3. Contract-based cooperation. A prerequisite for the network functionality is to conclude mutual agreements between participating providers of cancer health services, which define the mutual obligations and respect for the main principles of the network functioning.
4. Reasonable degree of centralization of services. Functional network of centres should be able to centralize treatment requiring highly specialized care and treatment of rare diseases. On the contrary, other care components and dispensary care must be optimally stratified so as to enhance its availability to patients.

Mandatory attributes of the functional comprehensive cancer care network

1. Contract-based cooperation of involved providers and members of the network
2. A single management system including common rules especially in the control and due management of care availability and quality.
3. Acceptance of common protocols (diagnostic and clinical standards), at least in the management of major cancer diagnoses
4. Clearly declared system of care organization, arranged in "layers" defining which services are centralized and which are not. Care availability model.
5. A common information system and common reporting for diagnostic and clinical data.
6. Established system of multidisciplinary assessment of clinical cases, including subsequent decisions on the manner of treatment and its location within the network.
7. Ability to communicate with neighbouring regions, to set up and map collaboration, and quantify the migration of patients.

In accordance with the European idea of developing cancer care and taking into account the assumptions for the functional network of comprehensive cancer care, the Parties to this agreement intend to commence the transformation of cancer care organization, which will contribute to the development of cancer care in the region and bring about improvement in its availability and quality. The aim of the cooperation of Providers of cancer care, which will be based on a contractual consideration of the mandatory attributes of the functional comprehensive cancer care network according to the rules adopted within the all-European project, is to standardize and unify the provision of health services in the field so that Providers duly render their services under a unified methodological guidance, in a comparable manner and with comparable results. Furthermore, the aim of the collaboration is also to ensure information exchange and facilitate the implementation of the principles of good practice and evidence-based medicine.

ment is binding upon the Parties concerned, i.e. Providers; the statutory bodies of the said are responsible for its due observance. Participation of the Vysočina Region is determined as a founder of some Providers and will consist in supporting the declared cooperation plication of its legal powers – initiation and draft of measures that are discussed and by the competent authorities of the region, incorporation of the proposed concept into ouments of the region.

#### Part 1 General provisions - the rights and obligations of Providers

undertake to:

tively participate in the activities of KOS, create conditions for the participation of their representatives in working meetings of expert committees and for the activities of KOS, pecially to send their representatives to the meetings of expert committees for the cessary duration, provide technical support for meetings of expert committees. :legate qualified representatives to various expert committees.

here to the procedures determined by the oncology expert group (OOS) when providing re to patients with cancer, so that these procedures correspond to the principles of idence-based medicine, subject to the fulfilment of appropriate professional level in cordance with the provisions of §4, subparagraph 5 of Act No. 372/2011 Coll., on Health rvices and Conditions of Their Provision (Act on Health Services), as amended. Integrate ese procedures, including the opinions of expert committees, into the controlled cumentation for clinical practice and require their observance on the part of employees.

tively collaborate on creating a single information system to standardize and unify the livery of health services in the field, and commence negotiations for that purpose after rning this agreement without undue delay, and conclude an agreement on the analysis of nical data with the Masaryk University in Brno (MU Brno), which will process the data of oviders in full accord with Act No. 101/2000 Coll. and respect that the clinical data is the operty of care providers. The purpose of the stated data processing is to obtain 'ormation to analyse and compare health services in the area of cancer care, and acquaint oviders with the outcomes, which will enable them to manage and organize cancer care thin the KOS, improve efficiency and bring about better results.

ospital Jihlava, through the head of KOC, in collaboration with OOS and MU Brno, shall sure the availability of reports and overviews created for Providers.

point a representative for the performance of this agreement, who will be responsible for e mediation, application and observance of the mentioned medical procedures and ligations arising from this agreement (usually the Deputy Director for Medical Care, or the rector). A list of these responsible persons and their deputies is attached to this agreement d shall be periodically updated (see Annex 1).

ow their professionals to put forward proposals for the attention of the respective expert mmittees for amending treatment practices and protocols.

otivate their representatives to work within the KOS, particularly to remunerate them for ccessful fulfilment of extra important working tasks in the amount determined according their participation in the KOS activities and pursuant to agreements with other Providers and chairman of the OOS. Pay the necessary expenses related to the participation of their representatives in the expert groups.

## Common protocols – QA/QC standards – common information system





# Outcomes and further steps



# Regional models of cancer care

NATIONAL CANCER CONTROL PROGRAMME ISSN 1802-887X

nop on-line národní onkologický program

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:

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.

**Hospital Znojmo, allowance organization**

Address  
 MUDr. Jana Janského 11  
 669 02 Znojmo

Contacts  
 phone: +420 515 215 111  
 e-mail: info@nemzn.cz  
 www: http://www.nemzn.cz

Location  
 GPS latitude: 48°52'9" N  
 GPS altitude: 16°3'3" E

Departments involved in cancer care:

- department of radiology and imaging methods (breast cancer screening)
- department of gastroenterology and digestive endoscopy (bowel cancer screening)

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

# Cancer Centres On-line

## Equipment characteristics

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

Identification data | Basic characteristics | Contractual relationships with health insurance companies

Hospital and management information systems | Health care quality assessment and documentation | clinical assessment

**Basic characteristics**

Beds and outpatient departments:  
 Total number of beds available for cancer patients: 230  
 Total number of oncology outpatient departments: 26

**Medical equipment:**

- Spiral computed tomography:  number of instruments: 4
- MRI:  number of instruments: 4
- PET:  number of instruments: 2
- Classical mammography machine:  number of instruments: 4
- Digital mammography machines:  number of instruments: 4
- Endoscopic ultrasound (EUS):  number of instruments: 1

Other equipment:

## Clinical research

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

Identification data | Basic characteristics | Contractual relationships with health insurance companies

Hospital and management information systems | Health care quality assessment and documentation | clinical assessment

**Clinical trials and Implementation of new procedures**

The centre has a local ethical commission 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: 3  
 Number of international projects: 1

Phase II: Total number: 23  
 Number of international projects: 23

Phase III: Total number: 4  
 Number of international projects: 4

Phase IV: Total number: 3  
 Number of international projects: 3

**The centre is involved in Czech or international clinical registries:**  
 (out of National Cancer Registry, i.e. projects concerned with genetics etc.):

| Project title | Identification of project organizers | Diagnosis of registered patients     | The centre has been actively participating in the registry since |
|---------------|--------------------------------------|--------------------------------------|--|
| Registry CO5  | Prof. MUDr. Rostislav Vyauka, CSc.   | C18-20, C25, C34, C45, C44, C56, C44 | 2008   |

**The centre actively participates in prevention programmes:**

Primary prevention:  
 mammary screening, colorectal carcinoma, Stub It Out, counselling service on healthy diet and lifestyle

Secondary prevention:  
 mammary screening, colorectal carcinoma, melanoma treatment, seniors

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

Diagnostics: pathology:   
 radiodiagnostics:   
 nuclear medicine:

Therapy: chemotherapy:   
 radiation therapy:   
 biological therapy:

Genomics and proteomics:   
 Pharmacogenetics:

Data authorization: 16.5.2014, Jiří Votršáček

## Information systems

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

Identification data | Basic characteristics | Contractual relationships with health insurance companies

Hospital and management information systems | Health care quality assessment and documentation | clinical assessment

**Hospital and management information systems (HIS and MIS)**

For the documentation of diagnostic and therapeutic processes in cancer patients, the centre employs a fully electronic Hospital Information System (HIS):

HIS identification: HIS GreyFox ver. 9.0  
 HIS provider: Medicore a.s.

The HIS employed in the centre enables a parametric collection of cancer data, at least in the extent of the report sent to the National Cancer Registry:

| Data   | Údaj parametricky zaznamenán v HIS  | Údaj pohodlně dostupný pro vedení centra |
|--|-------------------------------------|--|
| Number of diagnosed and/or treated patients                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Diagnosed and/or treated patients sorted by diagnoses                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| The time of diagnosis (TNM, clinical stage etc.)                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Histopathological examination (pTNM, grade etc.)                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Results of laboratory examination                                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Results of examination by imaging methods                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Records on anticancer pharmacotherapy (regimens, products, doses etc.) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Records on radiation therapy   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |
| Records on adverse drug reactions                                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>      |

**The centre employs a Management Information System (MIS):**

MIS identification: HIS GreyFox ver. 9.0  
 MIS provider: INSIGHT STRATEGY/ CBA A.U. MEDICOR  
 Length of use: 130 (in months)

**The centre employs filmless technologies and telemedicine tools:**

HIS identification: PACS Core PACS Enterprise SR  
 HIS provider: CTA International s.r.o.

...and more



## Portal Map

### Homepage

- Joint Action CanCon
- Concept of CCCN in Czech pilot model
- Model regions for CCCN pilot
- Employed data sources
- Published methods and results
- Management and contacts

### CCCN pilot model

- General model description
- Regional cancer care model
- Cancer care hospitals
- Cancer screening centres
- Long-term and palliative care
- Primary care specialists
- Governance and protocols

### Methodical materials

- Contract-based networking
- Legislative background
- Utilization of data sources
- CCCN information system
- Tumour management groups
- QA /QC standards
- Data-based reporting standards

### Interactive data views

- Cancer epidemiology
- Regional benchmarking
- Cancer diagnostics
- Regional patient flow
- Hospital-based reporting
- Health and health care indicators

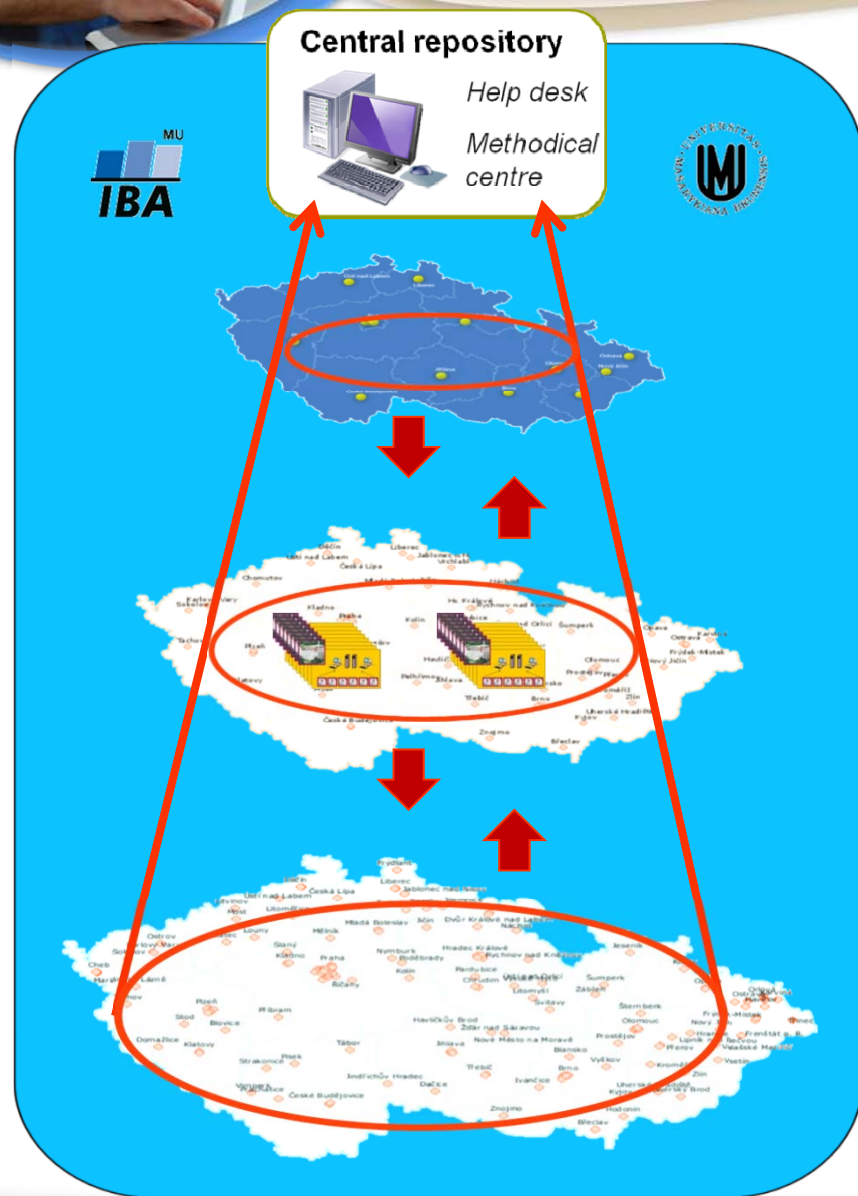
### Data-based reports

- Cancer epidemiology
- Inter-regional comparisons
- Equity and patient flow monitoring
- Cancer care benchmarking
- Cancer screening
- Long-term and palliative care
- Health and health care indicators

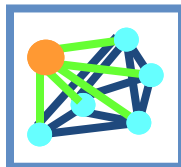
### Results, publishing

- Cancer epidemiology
- Inter-regional comparisons
- Equity and patient flow monitoring
- Cancer care benchmarking
- Cancer screening
- Long-term and palliative care
- Health and health care indicators

# IT infrastructure for monitoring of cancer care



Cancer centres network as a regional managing system



**Epidemiology  
Population-based  
registries**

Population and treatment burden  
National Cancer Registry



**Hospitals  
Specialized  
registries**

Hospital information systems  
Local and national registries



**Monitoring of  
health care  
EHR**

Primary care (GPs, gynaecologists)  
Hospital care  
Specialized care and cancer centres

*Equity of health care*

*Structure of health care*

*Results of health care*

*Quality of health care*

## REPORTS

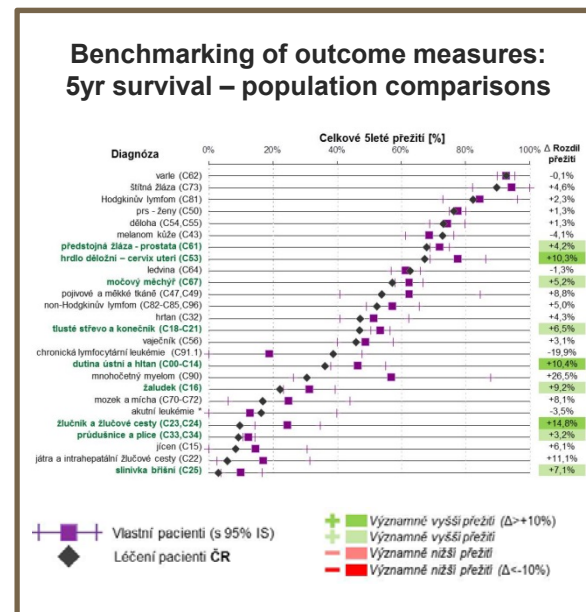
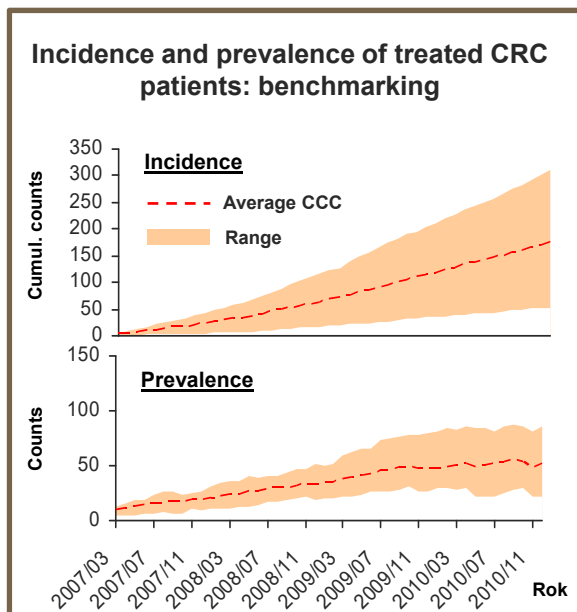
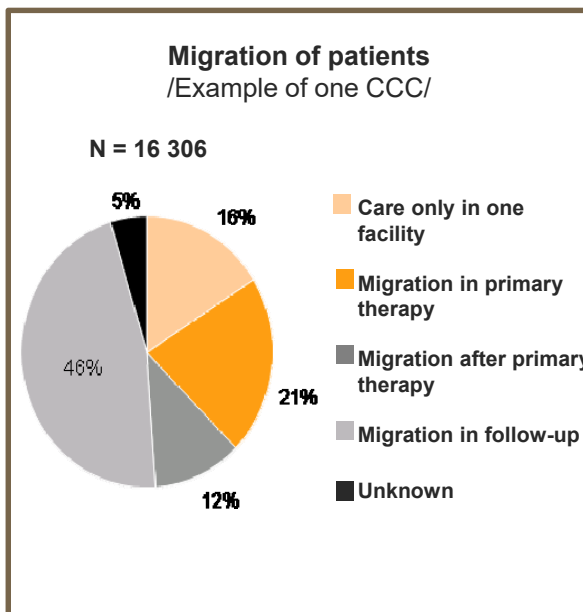
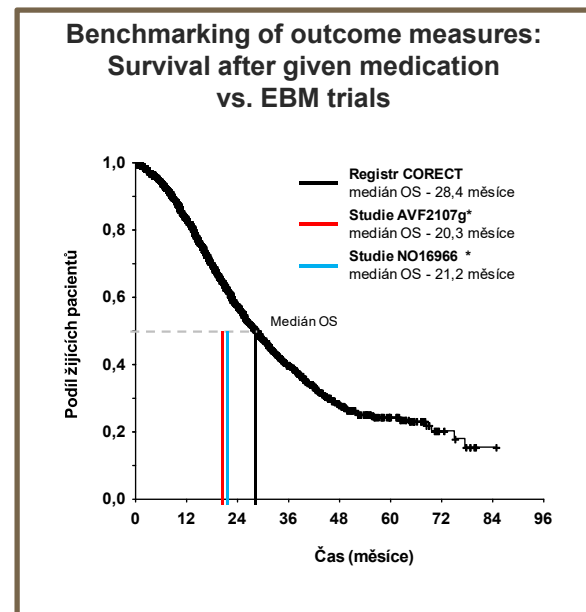
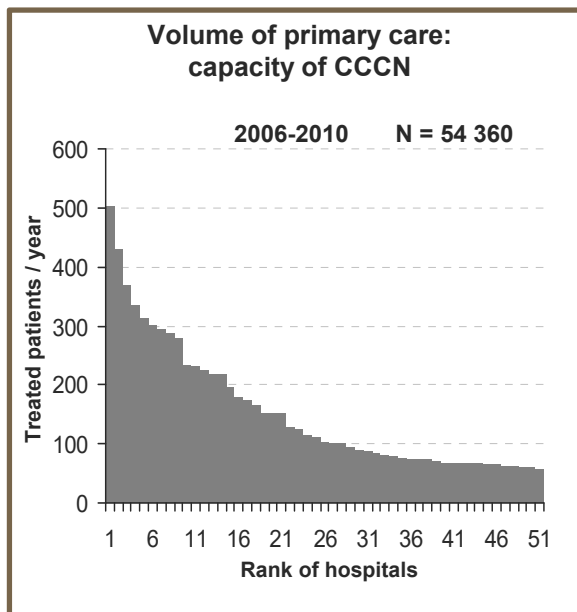
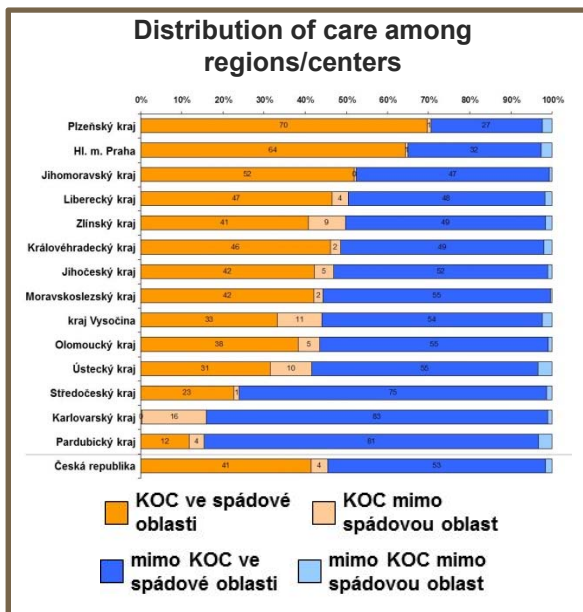
*Distribution of health care*

*Volume of health care*

*Data validation*

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

Model diagnosis: colorectal carcinoma



# Cancon Regional Conference 30/9/2016



**Press conference**

**New model of care in Vysočina region**

**Presentation of CCC**




**Analysis of care in CCCN region**

**New reporting tool**





## Future steps

-  • **Completion of data collected in 2015– processing and e-publishing in the CCCN portal** -> performance measures / patients' pathways / compliance to protocols / TMGs and their functionality
  
-  • **Publication of methodical materials and guides in the CCCN portal** -> CCCN endpoints and their quantification
  - > CCCN information system
  - > data standards / reporting
  
-  • **2017: national conference**