


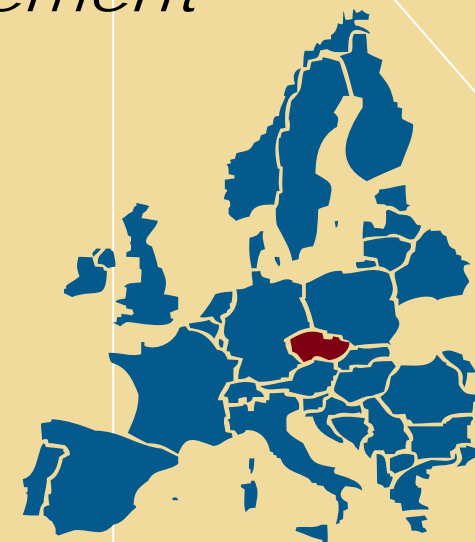


Advocacy of comprehensive cancer care and prevention based on recent trends In CRC epidemiology

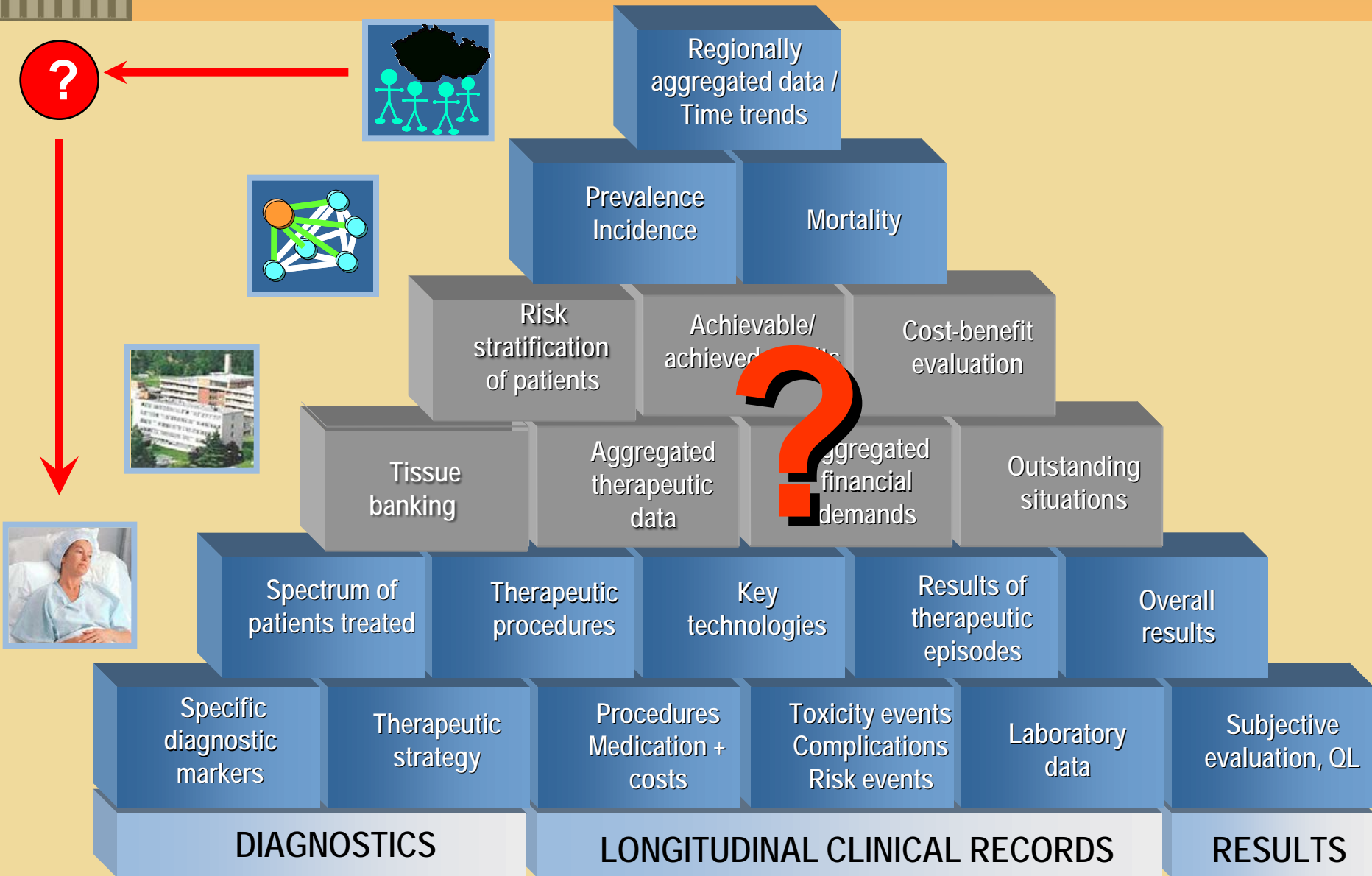
European Colorectal Cancer Days, Brno, April 26 – 27, 2013



Can epidemiological data contribute to improvement in cancer care?



Can epidemiological data help in cancer care management?



Where to find the Czech National Cancer Registry?

About project

News

Epidemiological
analyses

Publications,
reports

Software SVOD

Analytic tools
tutorial



Epidemiological
analyses

Incidence and mortality

Time trends

Regional overview

Age analyses

Clinical stages

International data

Comparative standards

Comprehensive overview

 <http://www.svod.cz>

svod.cz - interactive analytic tools

Nádory rekta (diagnóza C20) - výběr epidemiologických analýz

Incidence, mortalita a prevalence v čase

- Vývoj incidence a mortality v čase
- Vývoj prevalence v čase

Věkově specifické analýzy

- Věková struktura pacientů a zemřelých na nádor
- Věkově specifická incidence a mortalita

Diagnostika nemoci v datech

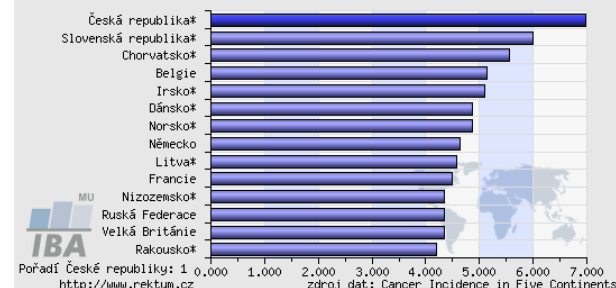
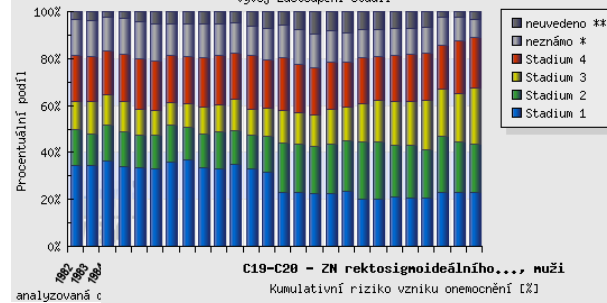
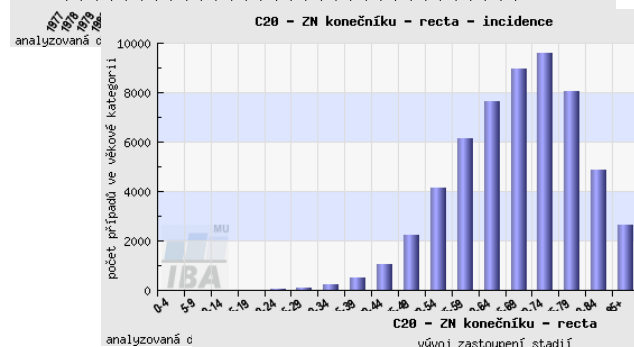
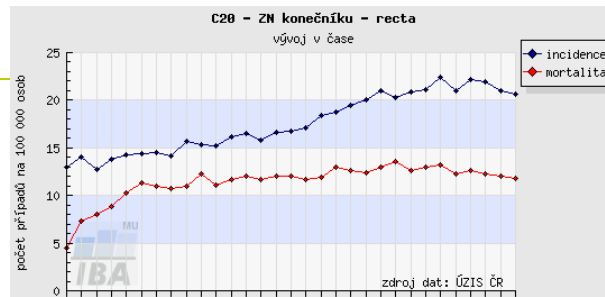
- Zastoupení stadií onemocnění
- Vývoj incidence dle stadií onemocnění
- Zastoupení stadií onemocnění dle věku
- Srovnání incidence stadií dle věku

Morfologie nádorů

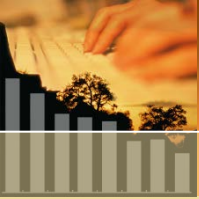
- Morfologie nádorů - přehled

Mezinárodní data

- Srovnání incidence s údaji onkologických registrů evropských zemí
- Srovnání věkové struktury s údaji onkologických registrů evropských zemí
- Srovnání věkově specifické incidence s údaji onkologických registrů evropských zemí



<http://www.svod.cz>



CRC epidemiology and its information potential

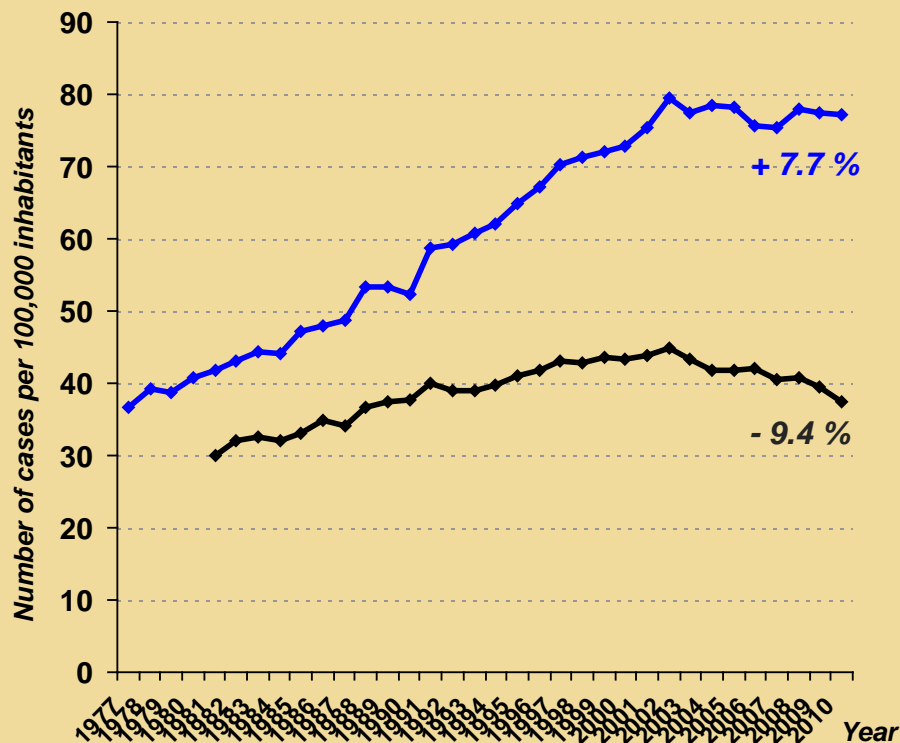


I. **CRC** – epidemiological burden

Epidemiology of colorectal cancer in the Czech Republic

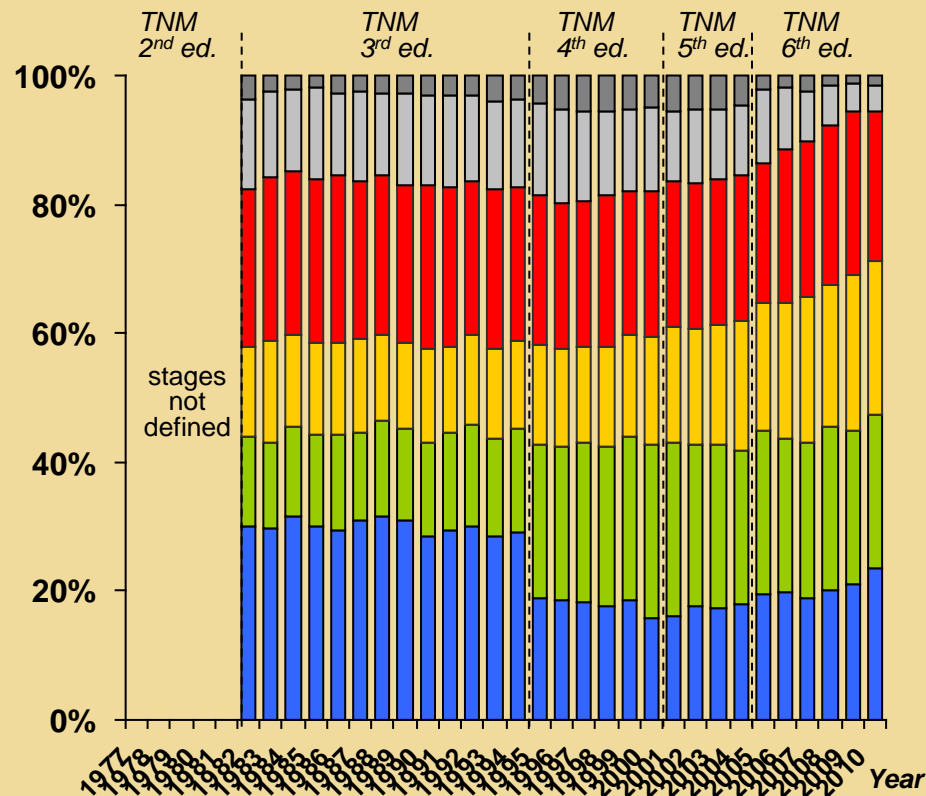
Trends of incidence and mortality

Crude rate per 100,000 inhabitants

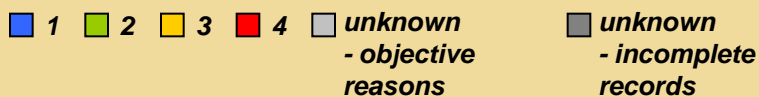


%: change between 2000 - 2010

Trends in detection of clinical stages



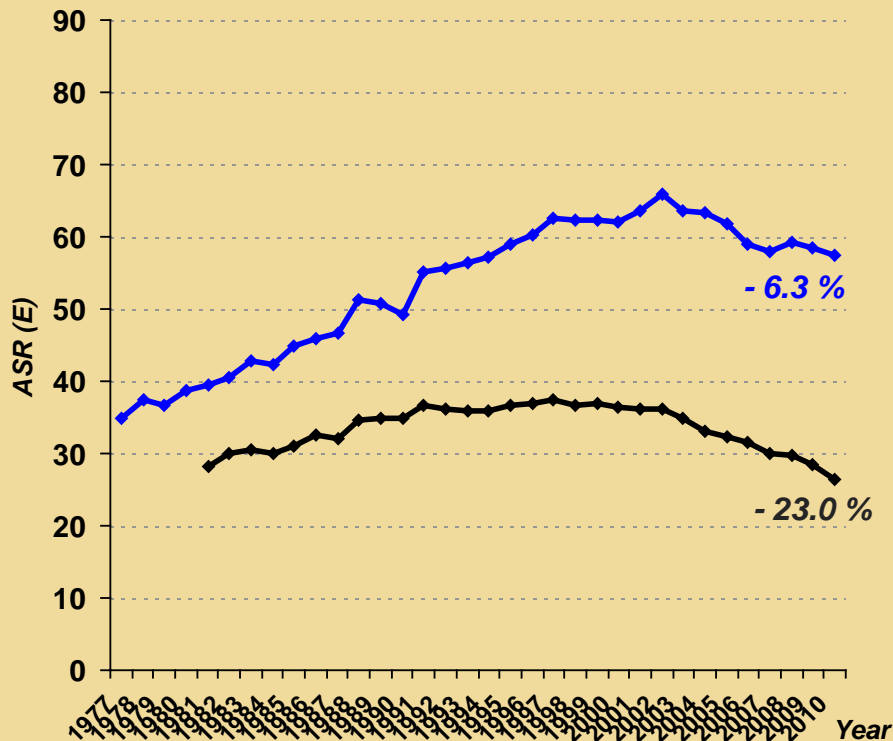
Disease stage at diagnosis:



Epidemiology of colorectal cancer in the Czech Republic

Trends of incidence a mortality

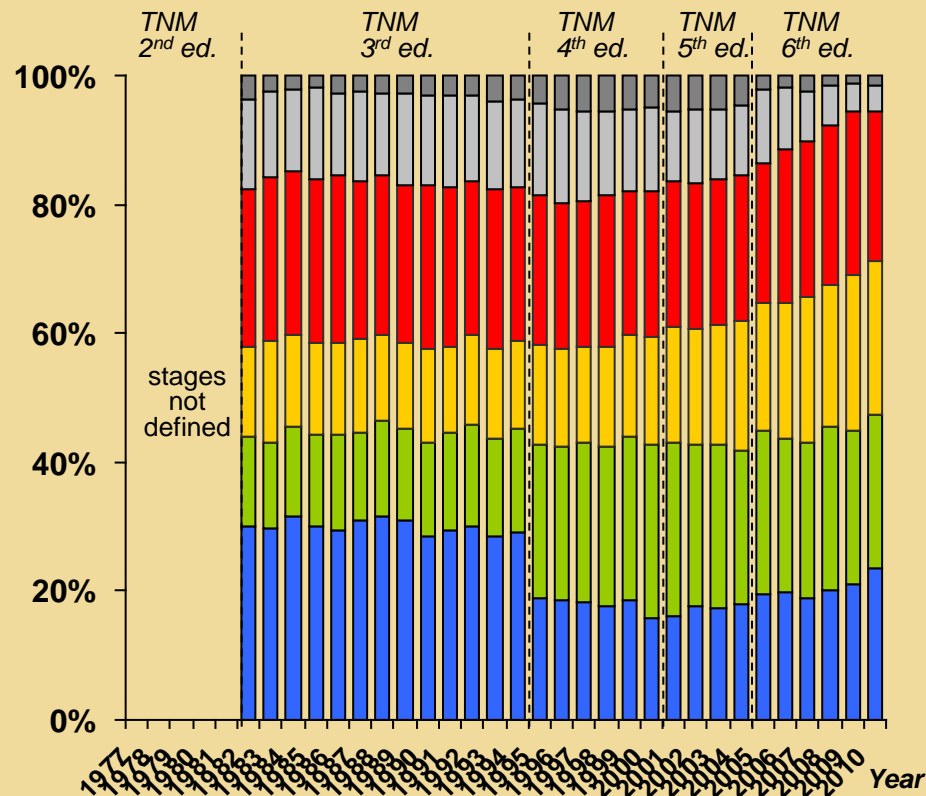
ASR (E): number of cases per 100,000 inhabitants age standardized on European age standard



◆ incidence ◆ mortality

%: change between 2000 - 2010

Trends in detection of clinical stages

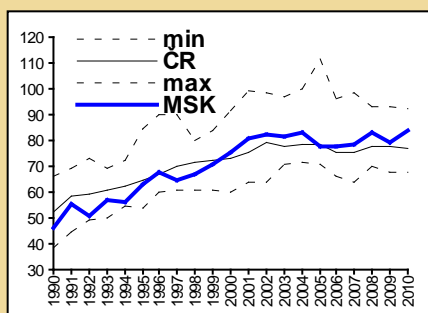
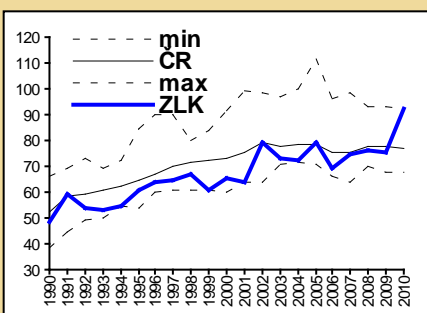
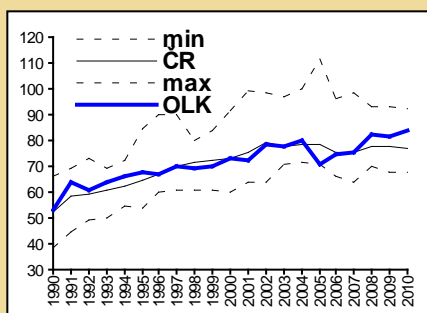
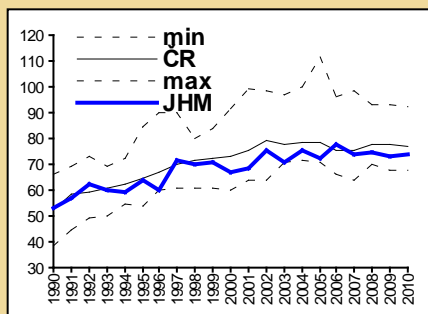
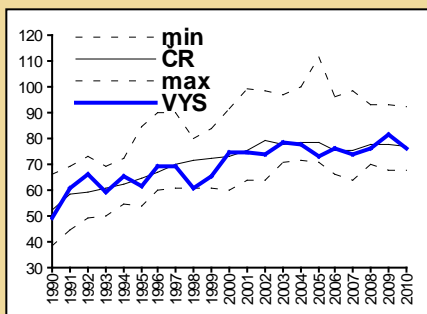
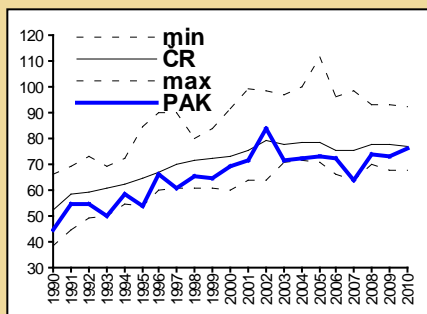
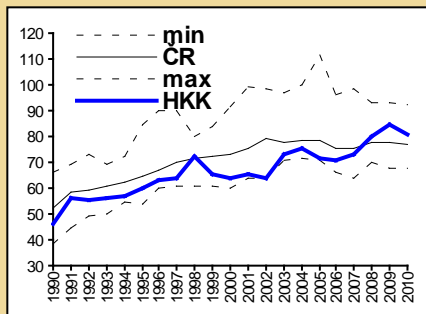
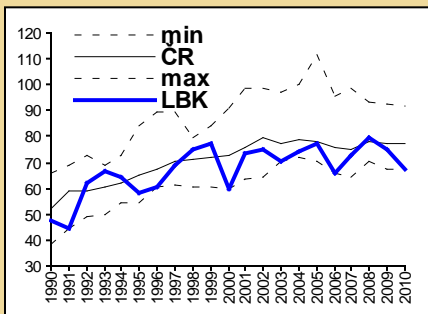
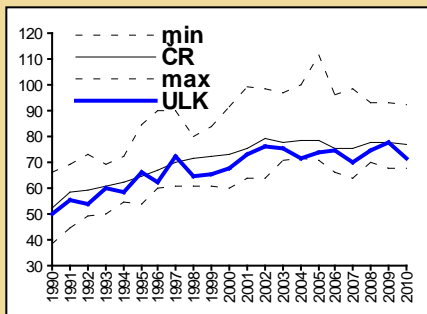
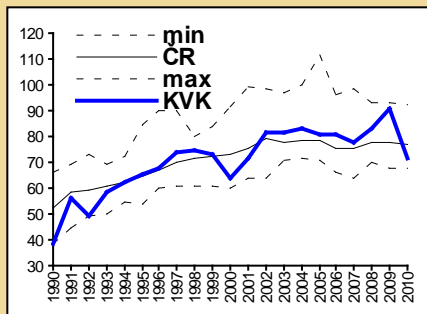
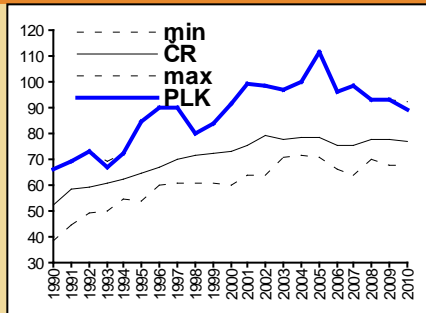
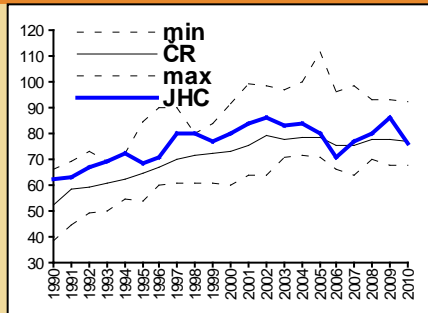
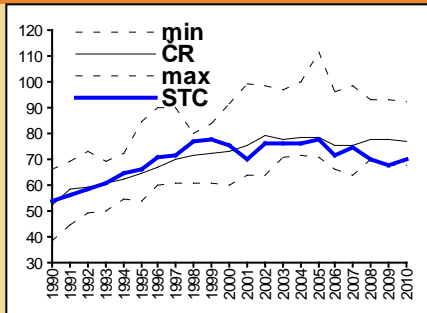
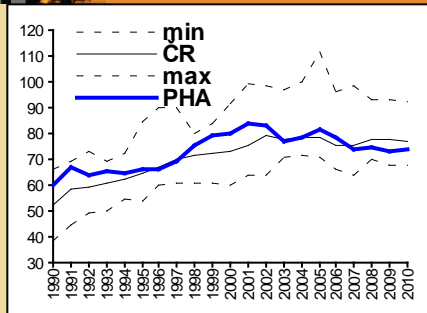


Disease stage at diagnosis:

■ 1 ■ 2 ■ 3 ■ 4 ■ unknown - objective reasons ■ unknown - incomplete records

Regional benchmarking of trends in CRC incidence

Number of cases per 100,000 inhabitants



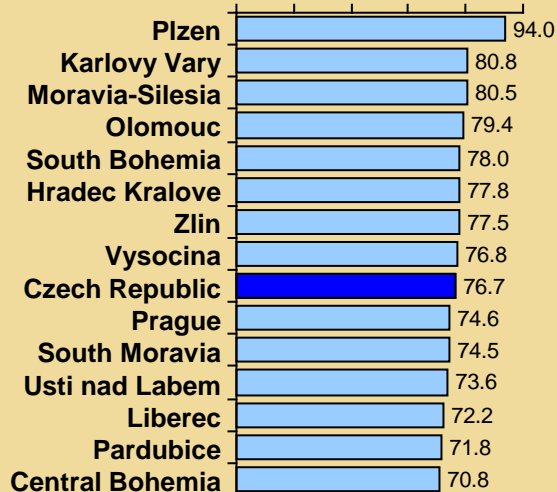
ČR: Czech Republic
 max: maximum in regions
 min: minimum in regions
 PHA: Prague
 STC: Central Bohemia
 JHC: South Bohemia
 PLK: Plzen
 KVK: Karlovy Vary
 ULK: Usti nad Labem
 LBK: Liberec
 HKK: Hradec Kralove
 PAK: Pardubice
 VYS: Vysocina
 JHM: South Moravia
 OLK: Olomouc
 ZLK: Zlin
 MSK: Moravia-Silesia

Regional profile of CRC incidence and prevalence

INCIDENCE *period 2006-2010*

Number of cases per 100,000 inhabitants

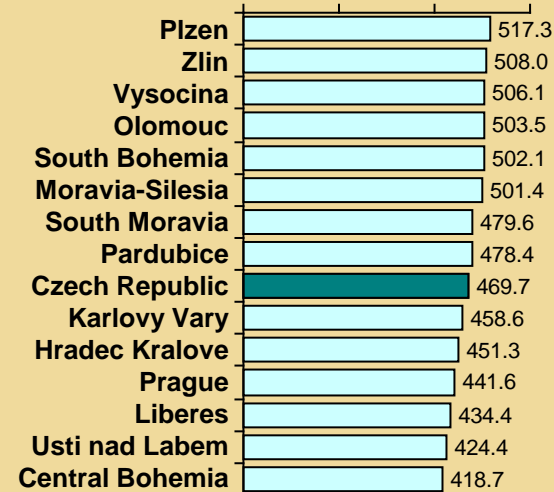
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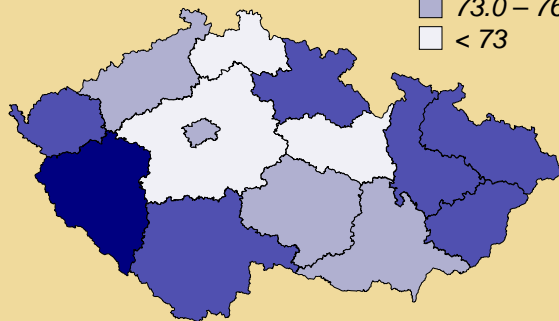
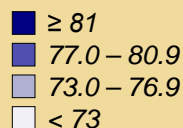
PREVALENCE *at 31/12/2010*

Number of alive patients per 100,000 inhabitants

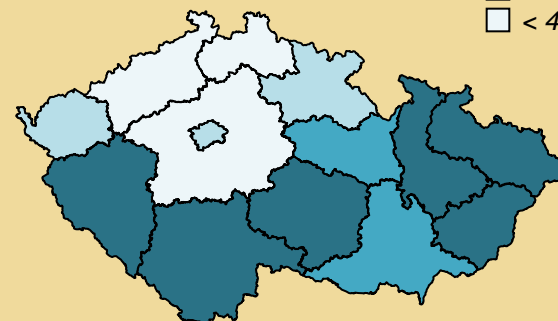
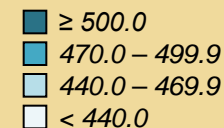
0 200 400 600

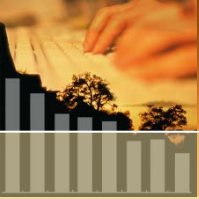


Number of cases per 100,000 inhabitants



Number of alive patients per 100,000 inhabitants





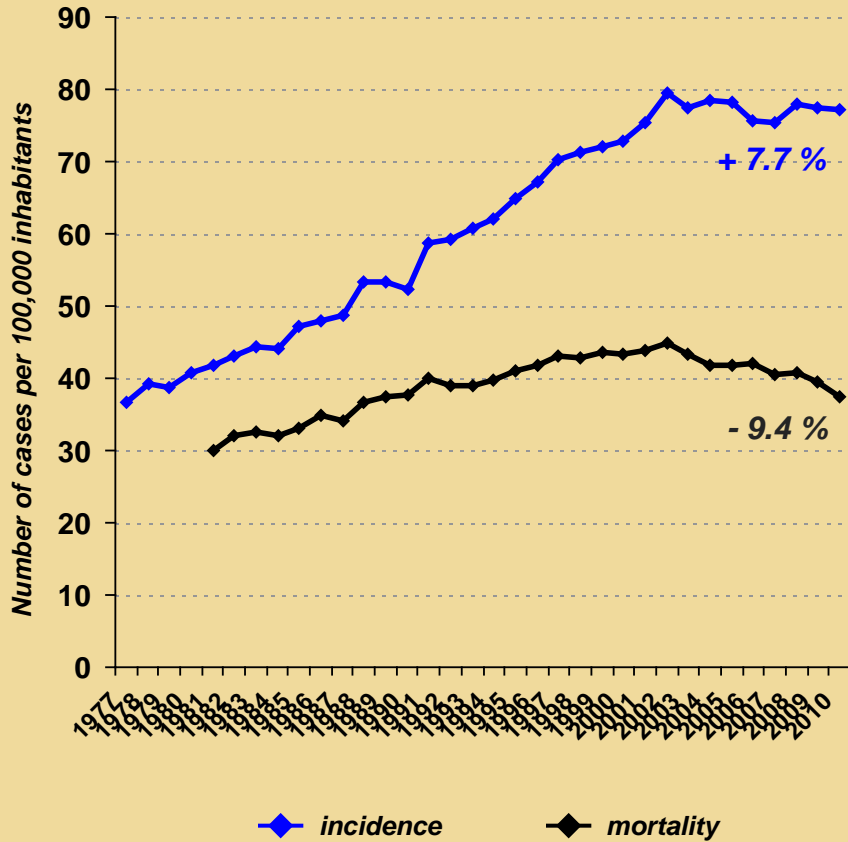
CRC epidemiology and its information potential



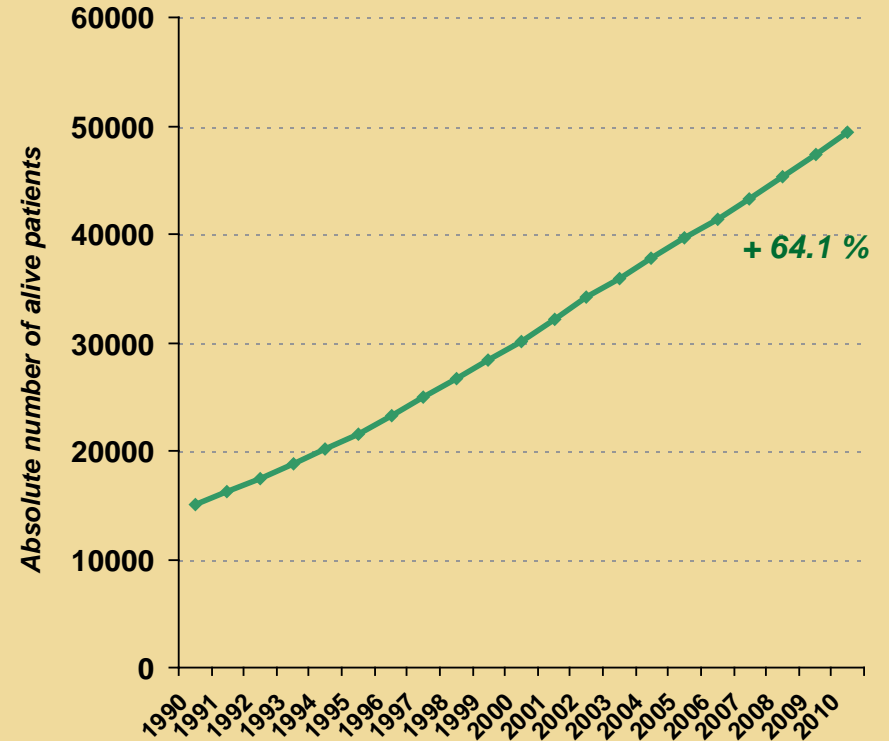
II.
CRC
– **prediction of
population and
therapeutic burden**

CRC in the Czech Republic: therapeutic burden increases

Trends of incidence and mortality



Trends of prevalence



∴: change between 2000 - 2010

CRC in the Czech Republic: predicted burden in 2013

INCIDENCE

Colorectal carcinoma (C18 - C20)	Predicted values for 2013	
	Incidence	(90% CI)
Stage I	1980	(1808; 2150)
Stage II	1939	(1797; 2081)
Stage III	2222	(2070; 2373)
Stage IV	2177	(2022; 2332)
Stage unknown due to objective reasons	360	(237; 483)
Stage unknown without reported reason	86	(56; 115)
TOTAL	8764	(7990; 9534)

PREVALENCE

Colorectal carcinoma (C18 - C20)	Predicted values for 2013	
	Prevalence	(90% CI)
Stage I	18 152	(17 843; 18 461)
Stage II	16 643	(16 356; 16 930)
Stage III	12 237	(11 986; 12 488)
Stage IV	7557	(7361; 7753)
Stage unknown due to objective reasons	2661	(2543; 2779)
TOTAL	57 250	(56 089; 58 411)

Pavlik et al. *BMC Public Health* 2012, 12:117
<http://www.biomedcentral.com/1471-2458/12/117>



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 Pavlík¹, Ondřej Májek¹, Jan Mužík¹, Jana Koptiková¹, Lubomír Slavíček^{1,2}, Jindřich Finek^{1,3}, David Feltl⁴, Rostislav Vyzula^{1,5} and Ladislav Dušek^{1*}

Abstract

Background: Colorectal cancer (CRC) represents a serious health care problem in the Czech Republic, introducing a need for a prospective modelling of the incidence and prevalence rates. The prevalence of patients requiring anti-tumour therapy is also of great importance, as it is directly associated with planning of health care resources.

Methods: This work proposes a population-based model for the estimation of stage-specific prevalence of CRC patients who will require active anti-tumour therapy in a given year. Its applicability is documented on records of the Czech National Cancer Registry (CNCR), which is used to estimate the number of patients potentially treated with anti-tumour therapy in the Czech Republic in 2015.

Results: Several scenarios are adopted to cover the plausible development of the incidence and survival rates, and the probability of an anti-tumour therapy initiation. Based on the scenarios, the model predicts an increase in CRC prevalence from 13% to 30% in comparison with the situation in 2008. Moreover, the model predicts that 10,074 to 11,440 CRC patients will be indicated for anti-tumour therapy in the Czech Republic in 2015. Considering all patients with terminal cancer recurrence and all patients primarily diagnosed in stage IV, it is predicted that 3,485 to 4,469 CRC patients will be treated for the metastatic disease in 2015, which accounts for more than one third (34-40%) of all CRC patients treated this year.

Conclusions: A new model for the estimation of the number of CRC patients requiring active anti-tumour therapy is proposed in this paper. The model respects the clinical stage as the primary stratification factor and utilizes solely the population-based cancer registry data. Thus, no specific hospital data records are needed in the proposed approach. Regarding the short-term prediction of the CRC burden in the Czech Republic, the model confirms a continuous increase in the burden that must be accounted for in the future planning of health care in the Czech Republic.

Background

The Czech population, with an annually diagnosed 78.7 colorectal cancer (CRC) patients per 100,000 inhabitants (2008), presently occupies an undesirable 3rd position in international statistics of age-standardised CRC incidence rates [1]. Moreover, the number of newly diagnosed cases is supposed to be high in the future as well,

namely due to population ageing. This health care problem is further worsened by the fact that a large proportion of colorectal carcinomas are primarily diagnosed in a metastatic stage (25% in 2008) [2].

Thus, there is a strong need for a prospective modelling of CRC incidence and prevalence rates, as these measures are necessary for monitoring of the overall cancer load and its dynamics [3]. The prospective estimates should also enable us to quantify the resources necessary for the health care system [4], provided that we are able to adjust the rates for patients untreated for

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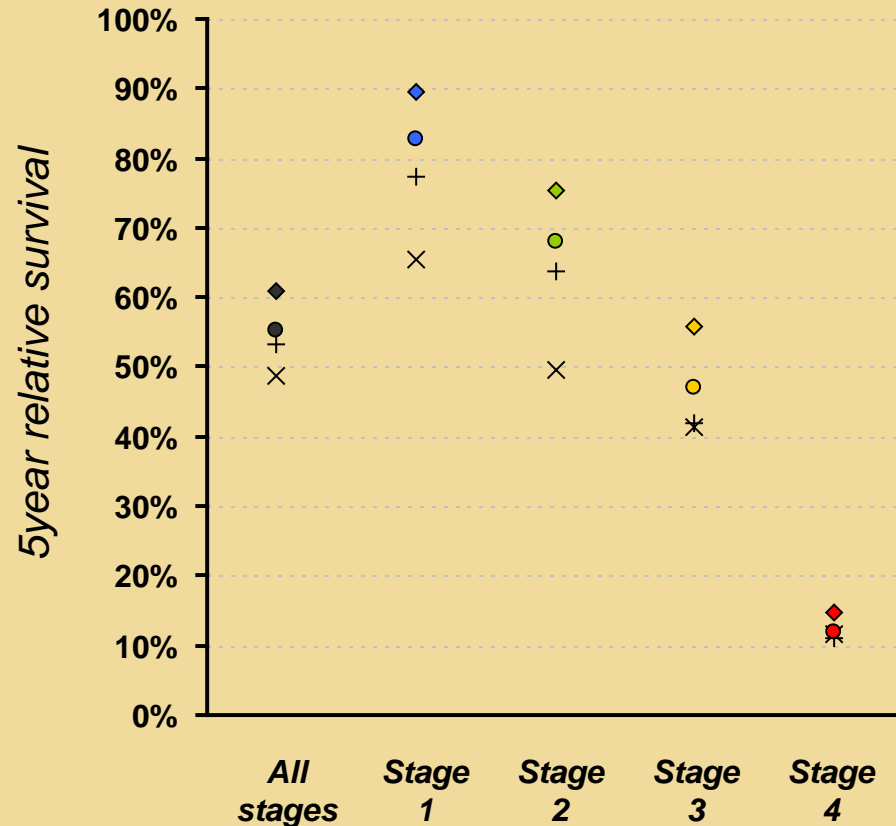


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Outcome of the care: 5-yr relative survival of CRC patients

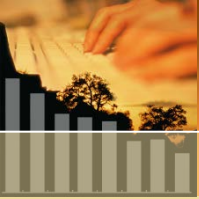
Colorectal carcinoma (C18 – C20)

Patients with anti-cancer treatment and with complete information about disease stage

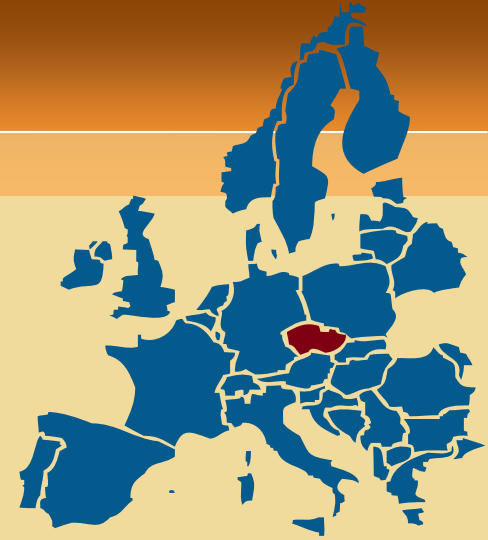


	Cohort analysis 1990-1994	Cohort analysis 1995-1999	Period analysis 2000-2004	Period analysis 2005-2009
Stage 1	65.4%	77.4%	82.8%	89.4%
Stage 2	49.5%	63.9%	67.9%	75.5%
Stage 3	41.5%	42.0%	46.9%	55.9%
Stage 4	11.7%	10.9%	11.9%	14.6%
All stages	48.9%	53.3%	55.3%	60.8%

◆ Period analysis 2005-2009 ○ Period analysis 2000-2004
 + Cohort analysis 1995-1999 × Cohort analysis 1990-1994



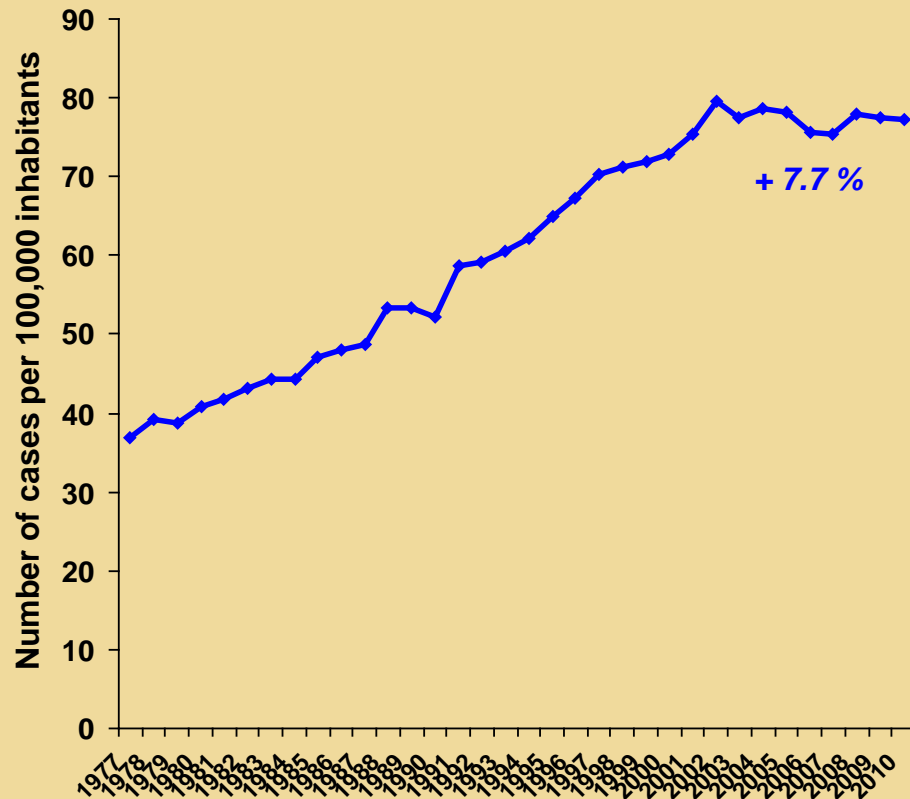
***CRC epidemiology
and its information potential***



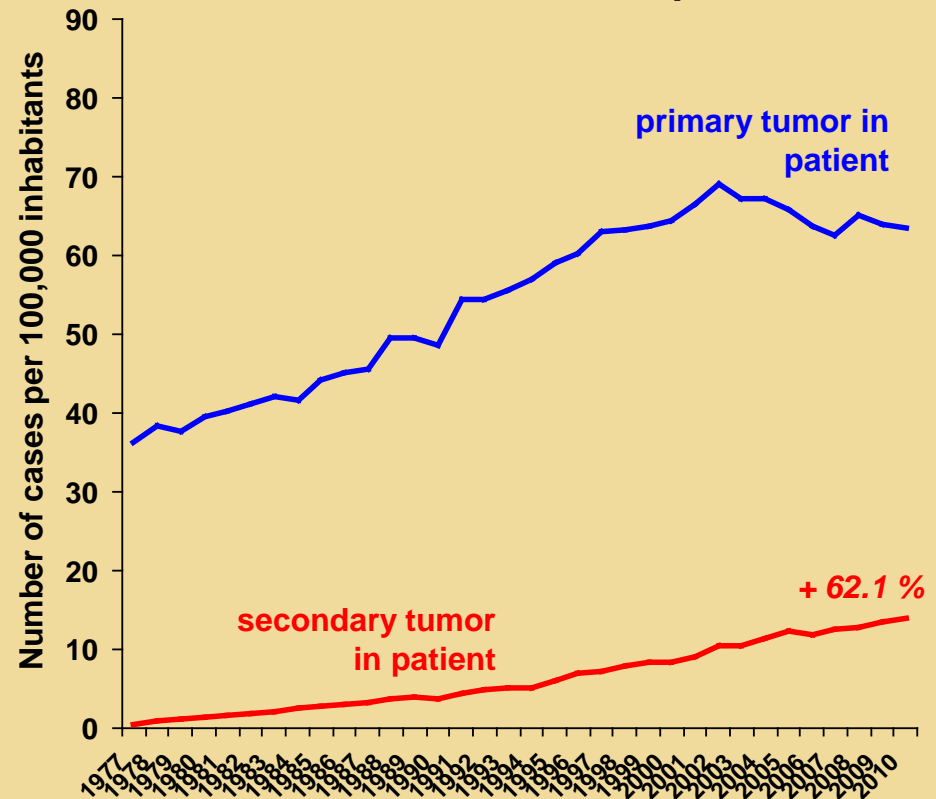
**III.
CRC
– epidemiology in
optimization of
cancer care**

Incidence of CRC in the Czech Republic: detailed view

Trend of CRC incidence

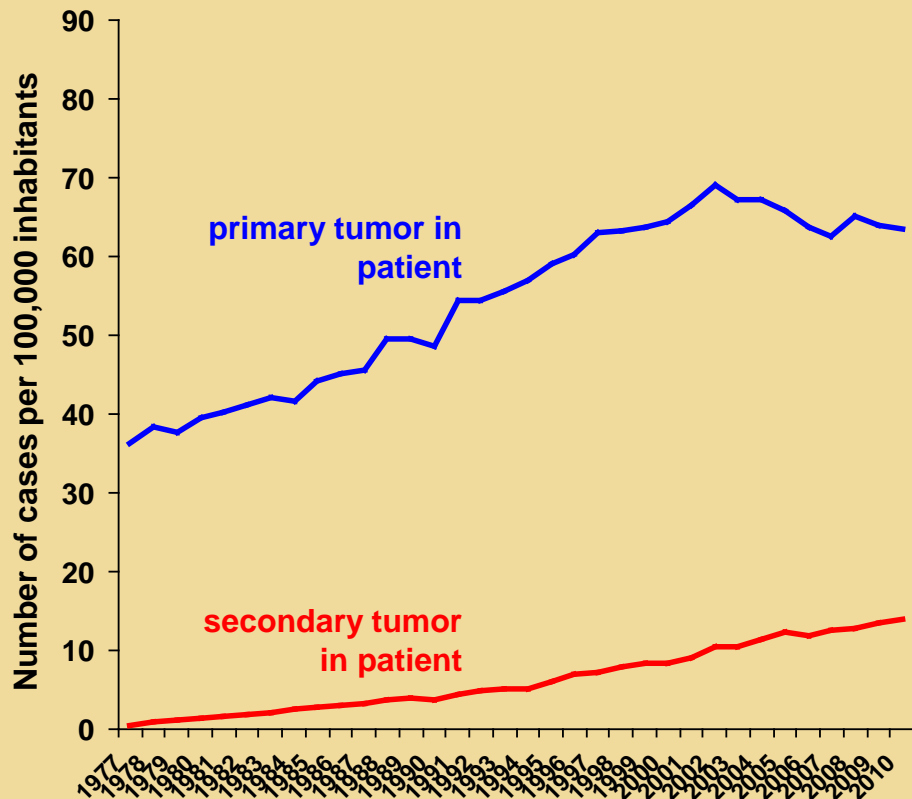


CRC incidence according to rank of tumors in patient



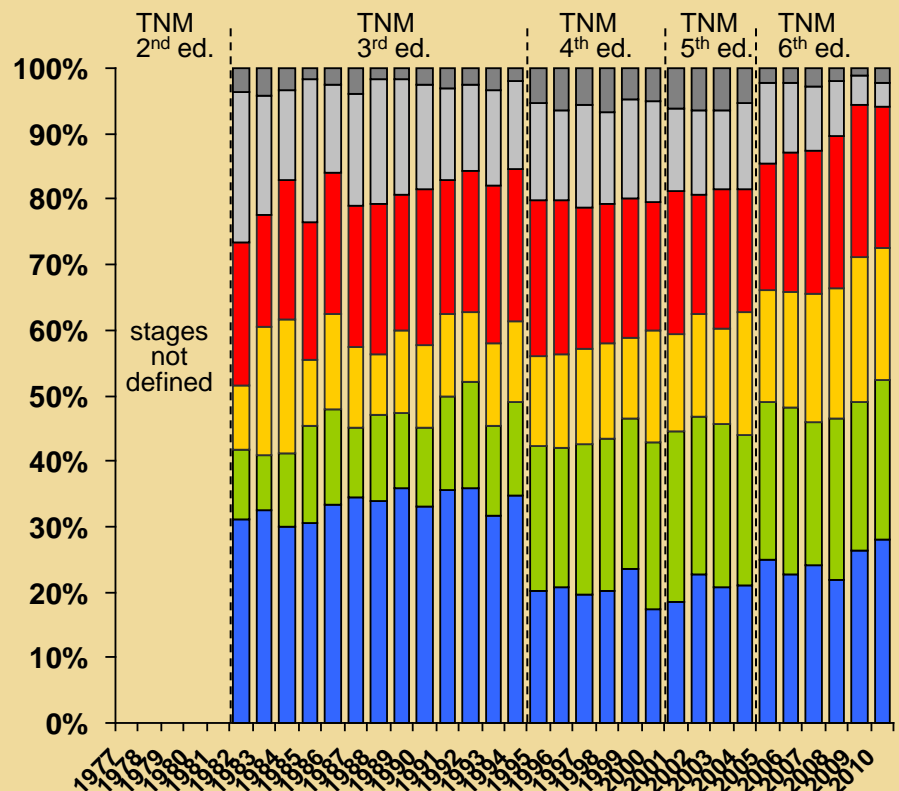
Epidemiology of colorectal cancer in the Czech Republic

Trends in CRC incidence

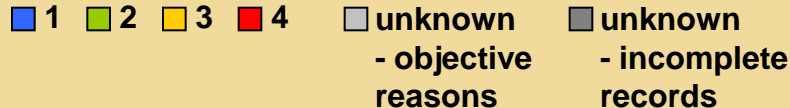


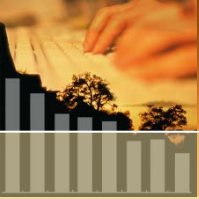
Trend in disease stages

CRC as multiple tumor



Disease stage at diagnosis:





Thank you for
attention!

