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Czech Colorectal Cancer Screening Programme as the methodical case study: successes and challenges

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Programme design

- 2000: introduction (gFOBt – colonoscopy)
- 2006: CRC screening database
- 2009: design change
 - Asymptomatic individuals
 - Age 50-54: gFOBt/**FIT** annually
 - Age 55: gFOBt/**FIT** biannually or **primary screening colonoscopy** in 10 years interval
 - 160 Centers for screening colonoscopy
 - Involvement of **gynecologists**

Programme efficiency evaluation

- Long term impact indicators (Friday lecture)
- Early performance indicators (selected)
 - Detection of adenomas
 - Detection of cancers
 - Cecal intubation rate
 - Adenoma detection rate
 - Adverse events

Results of colonoscopy examinations – overall

Year	Patients with colonoscopy	Patients with detected adenoma	Proportion	Patients with detected cancer	Proportion
2006	5,335	1,578	29.6%	335	6.3%
2007	5,678	1,636	28.8%	337	5.9%
2008	7,457	2,367	31.7%	446	6.0%
2009	13,072	4,122	31.5%	624	4.8%
2010	22,723	7,304	32.1%	872	3.8%
2011	24,591	8,251	33.6%	766	3.1%
2012*	3,915	1,221	31.2%	83	2.1%
Total	82,771	26,479	32.0%	3,463	4.2%

* Preliminary results - April 2012

Results of colonoscopy examinations – by indication

	Year	Patients with colonoscopy	Patients with detected adenoma	Proportion	Patients with detected cancer	Proportion
Screening colonoscopy (FOBT+)	2006	5,335	1,578	29.6%	335	6.3%
	2007	5,678	1,636	28.8%	337	5.9%
	2008	7,457	2,367	31.7%	446	6.0%
	2009	11,710	3,777	32.3%	600	5.1%
	2010	18,324	6,228	34.0%	829	4.5%
	2011	20,042	7,102	35.4%	724	3.6%
	2012*	3,225	1,043	32.3%	81	2.5%
	Total	71,771	23,731	33.1%	3,352	4.7%
Primary screening colonoscopy	2009	1,362	345	25.3%	24	1.8%
	2010	4,399	1,076	24.5%	43	1.0%
	2011	4,549	1,149	25.3%	42	0.9%
	2012*	690	178	25.8%	2	0.3%
	Total	11,000	2,748	25.0%	111	1.0%
Total		82,771	26,479	32.0%	3,463	4.2%

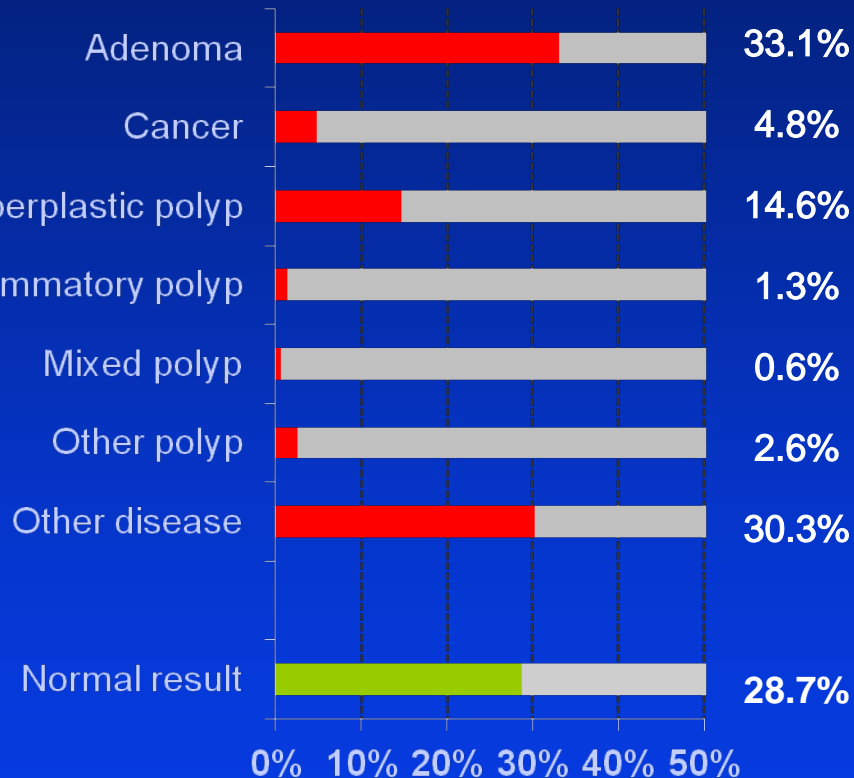
* Preliminary results - April 2012

Source: CRC screening database

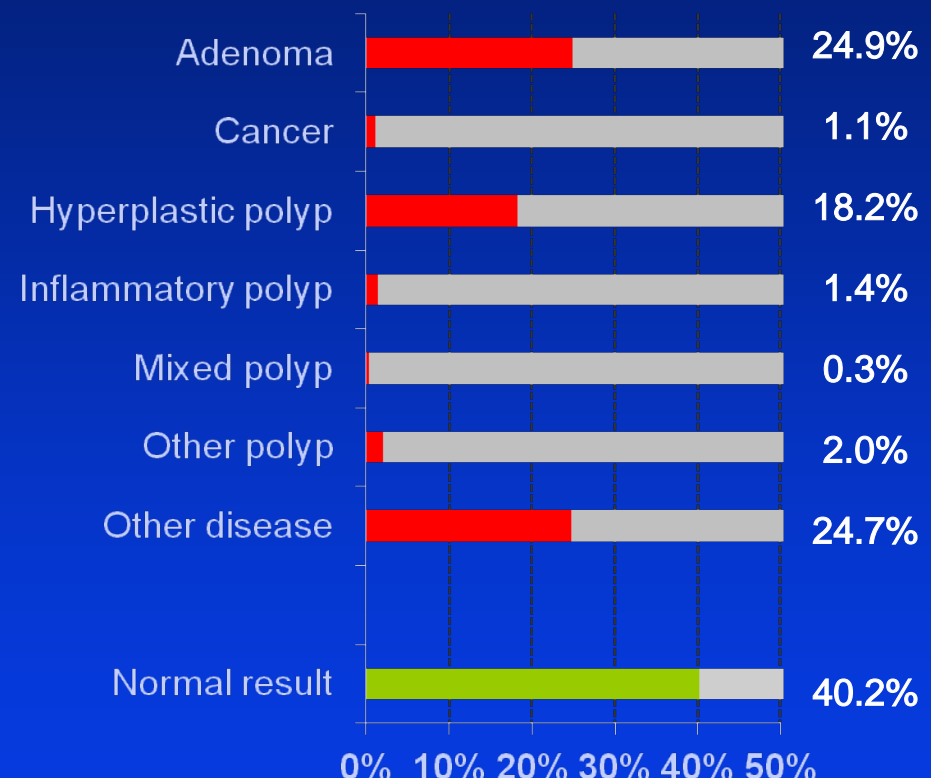
Result of examinations (2006-2011)

Screening colonoscopy (FOBT+)

Primary screening colonoscopy



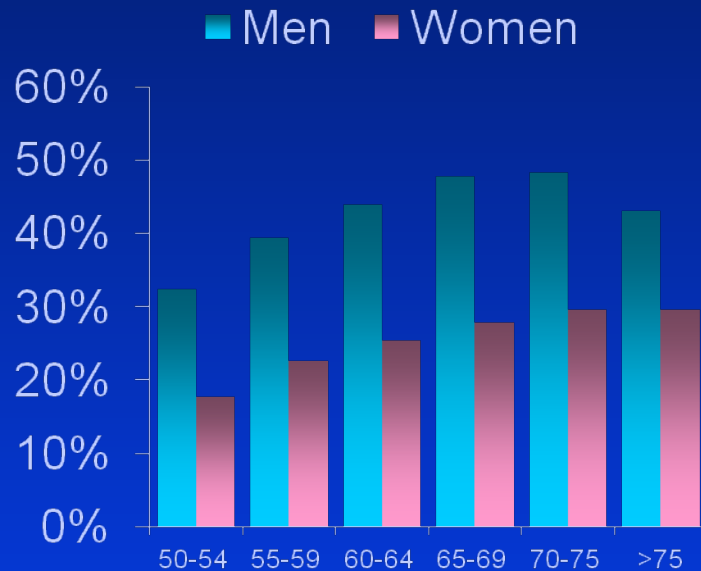
Years 2006-2011
n = 68,546



Years 2009-2011
n = 10,310

Detection of adenomas (overall 32.0%)

Screening colonoscopy (FOBT+)

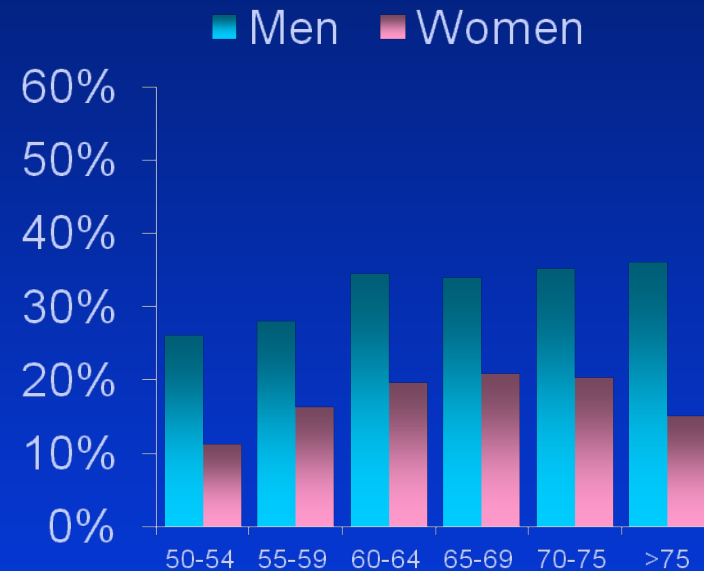


Total proportion: **33.1%**

48.9% of adenoma patients were diagnosed with advanced adenoma

Years 2006-2011
n = 68,546

Primary screening colonoscopy

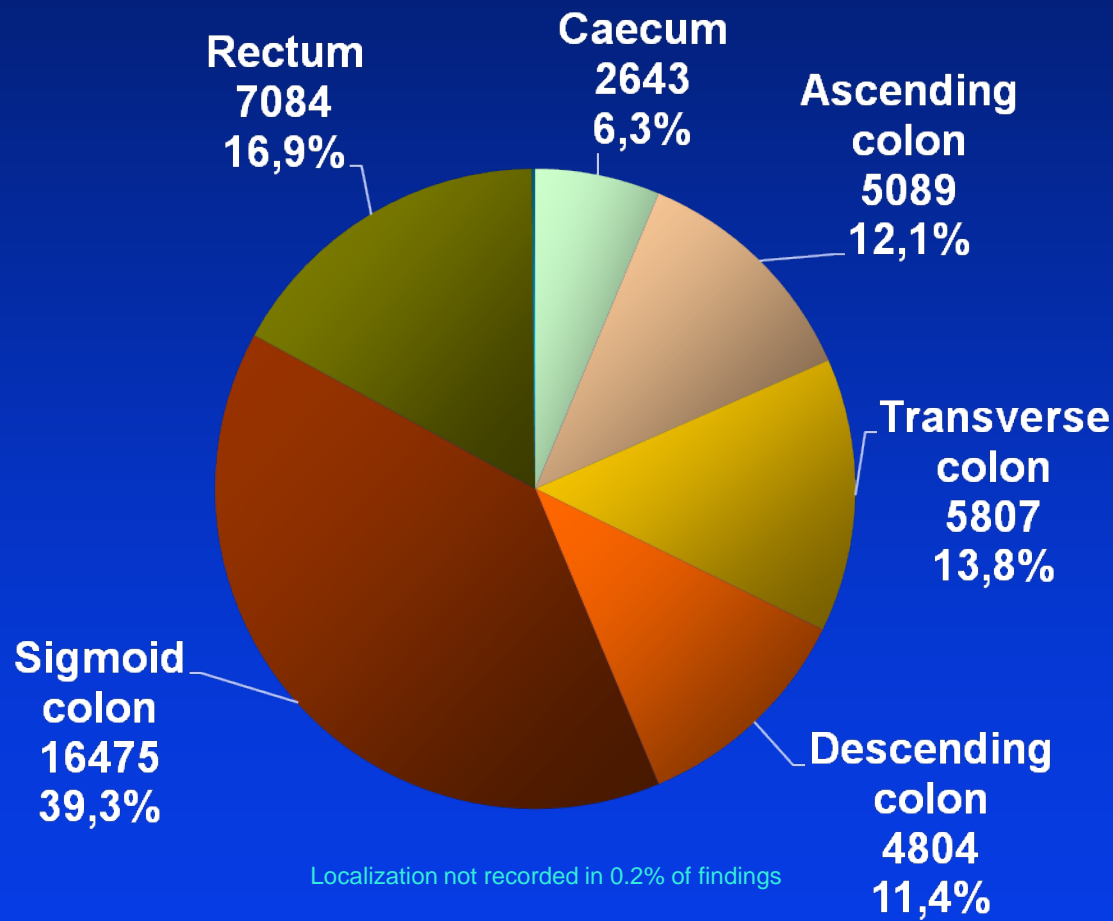


Total proportion: **24.9%**

30.0% of adenoma patients were diagnosed with advanced adenoma

Years 2009-2011
n = 10,310

Adenomas – localization



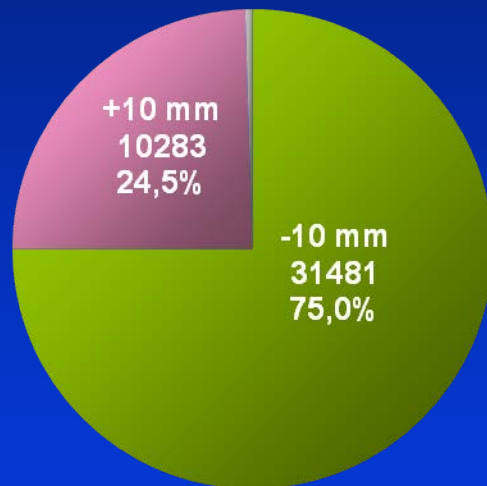
Source: Czech CRC Screening Database

Years 2006-2011, 41,971 recorded findings in
24,989 patients

Adenomas – characteristics

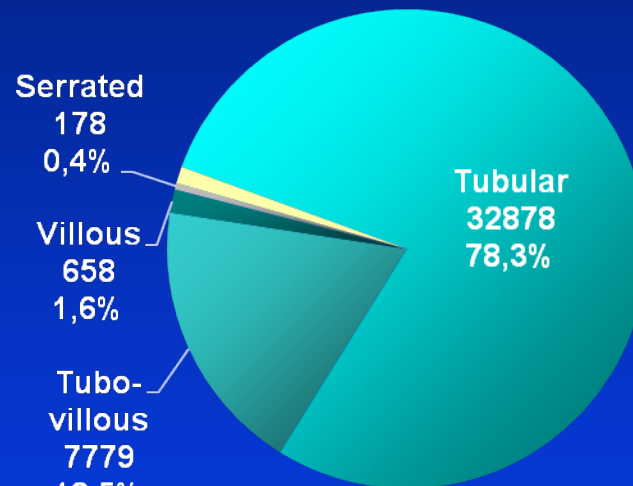
Years 2006-201: 41,971 recorded findings in 24,989 patients

Adenoma size



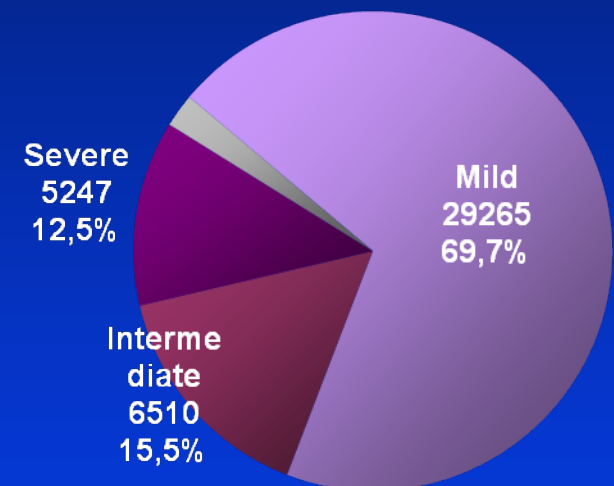
Size not recorded in 0.5 % of findings

Adenoma histology



Histol. not recorded in 1.1 % of findings

Adenoma dysplasia



Dyspl. not recorded in 2.3 % of findings

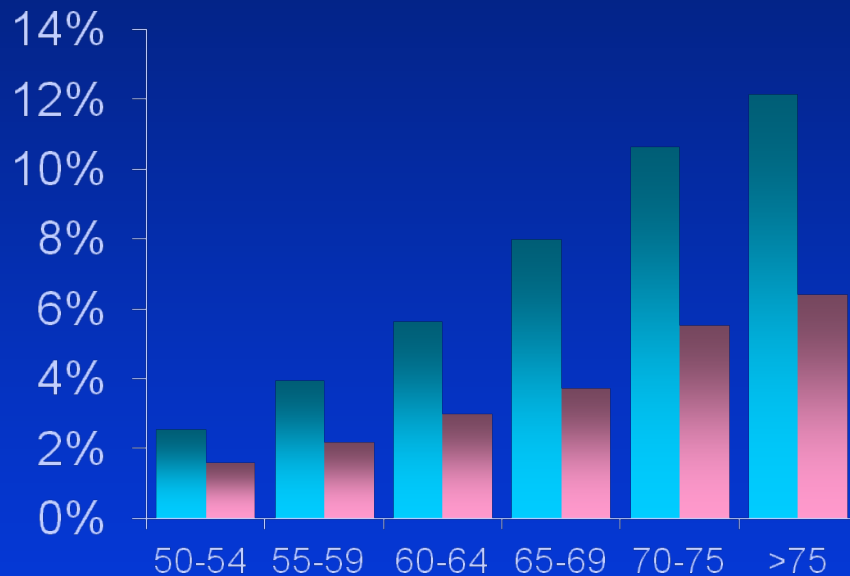


37.5% of findings are **ADVANCED ADENOMAS**
(large OR villous component OR severe dysplasia)

Detection of cancer (overall 4.2%)

Screening colonoscopy (FOBT+)

Men Women



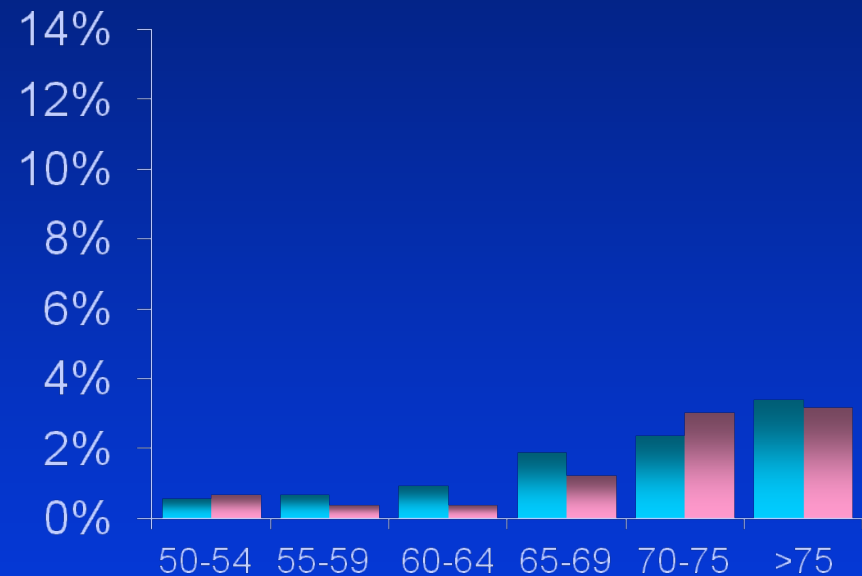
Total proportion: **4.8 %**

20.1% of cancer patients were diagnosed with regional or generalized disease

Years 2006-2011
n = 68,546

Primary screening colonoscopy

Men Women

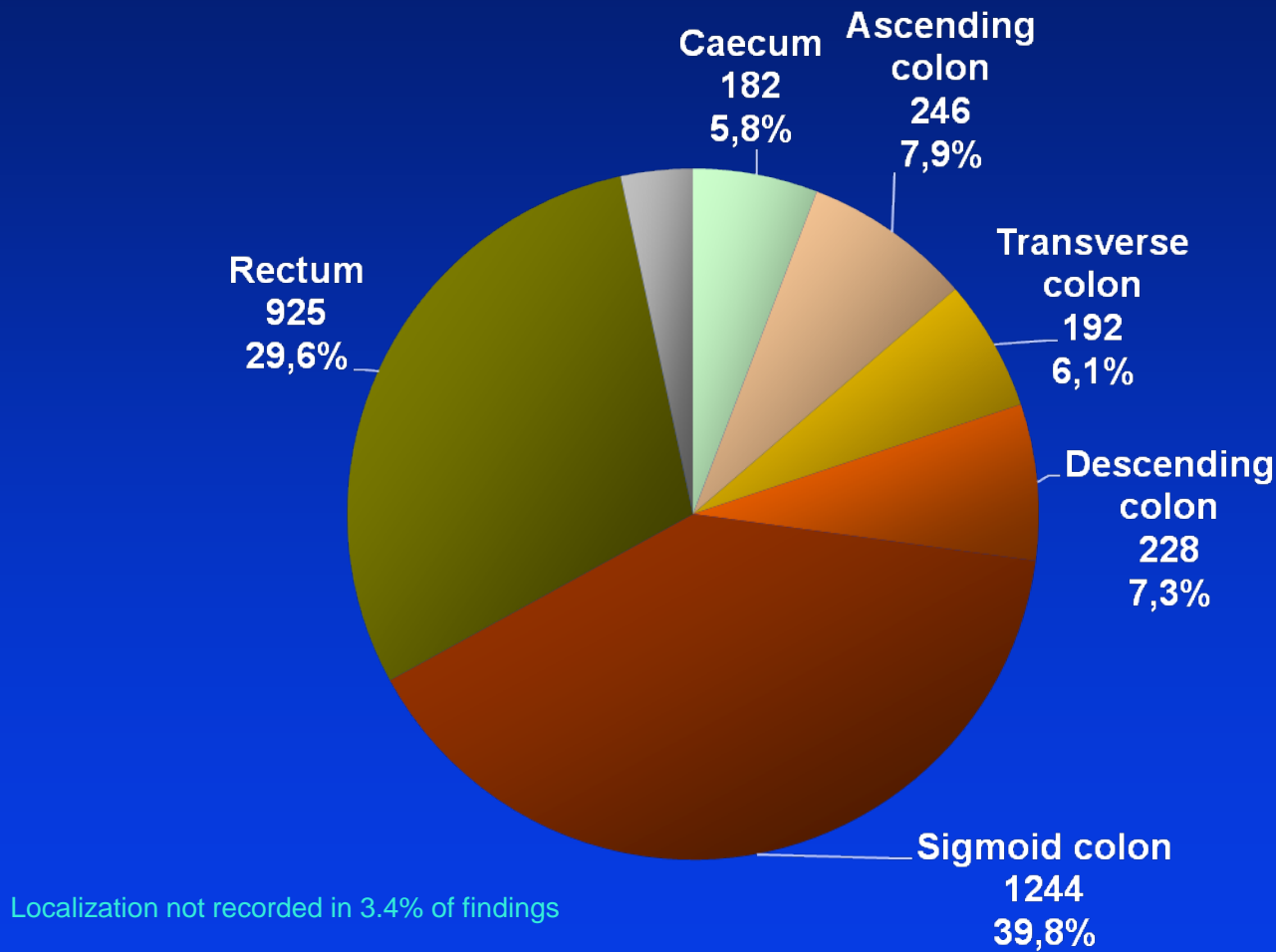


Total proportion: **1.1 %**

17.4% of cancer patients were diagnosed with regional or generalized disease

Years 2009-2011
n = 10,310

Cancer – localization

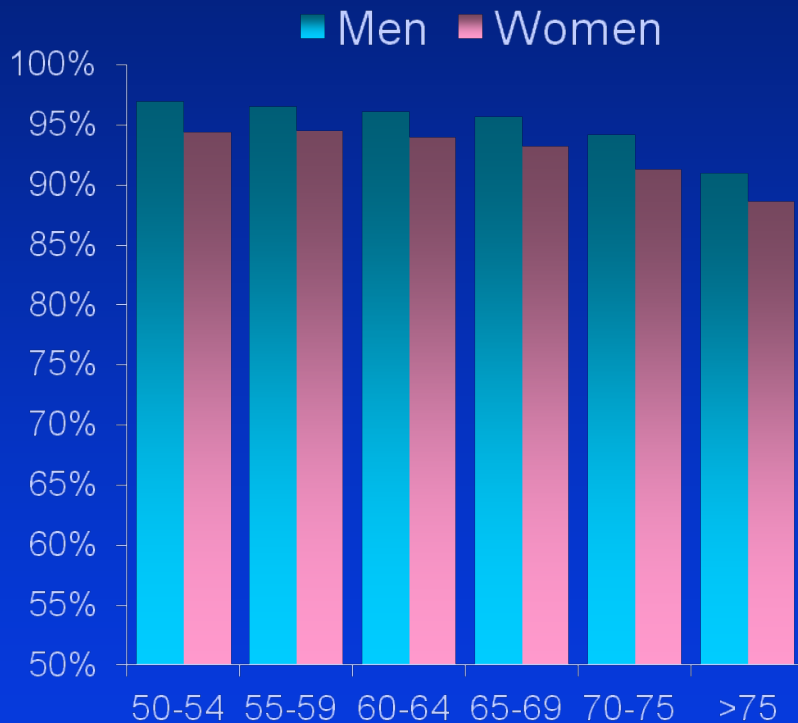


Years 2006-2011, 3,122 recorded findings in 3,038 patients

Source: Czech CRC Screening Database

Cecal intubation rate (overall 96,0%)

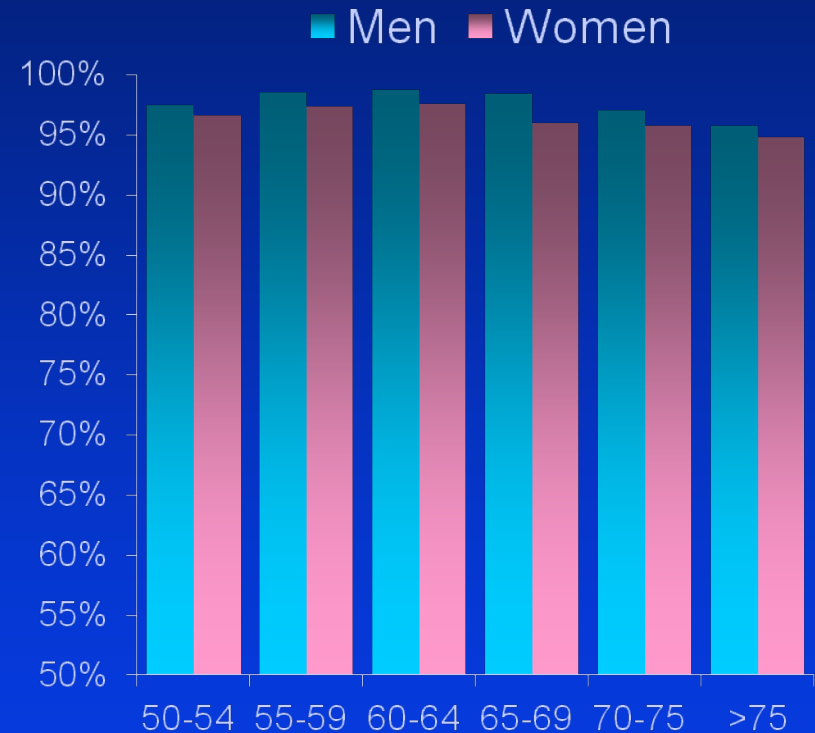
Screening colonoscopy (FOBT+)



Total rate: **94.4%**

Years 2006-2011
n = 68,546

Primary screening colonoscopy



Total rate: **97.6%**

Years 2009-2011
n = 10,310

Quality indicators based on examinations performed Endoscopists

No. of individuals examined by endoscopists	No. of endoscopists	Total number of individuals SCREENING COLONOSCOPY (FOBT+)	ADENOMA DETECTION RATE		CAECAL INTUBATION RATE
			All	Advanced	
Endoscopist not recorded		541	39.9%	17.6%	96.1%
1-25	230	2,143	35.2%	16.4%	94.9%
26-50	101	2,896	38.4%	18.0%	96.3%
51-75	58	2,942	39.5%	18.4%	95.7%
76-150	77	6,450	35.3%	17.7%	96.1%
151+	29	5,070	31.2%	13.7%	95.1%
Total	495	20,042	35.4%	16.7%	95.7%

* both screening colonoscopy and primary screening colonoscopy

year 2011

Quality indicators based on examinations performed Endoscopy units

No. of individuals examined in endoscopy unit	No. of endoscopy units*	Total number of individuals SCREENING COLONOSCOPY (FOBT+)	ADENOMA DETECTION RATE		CAECAL INTUBATION RATE
			All	Advanced	
1-50	27	731	42.7%	19.6%	94.8%
51-75	31	1,607	38.3%	19.6%	95.0%
76-100	30	2,243	35.2%	18.3%	95.4%
101-150	40	4,048	35.6%	17.0%	96.1%
151-200	29	4,318	35.5%	17.3%	94.4%
201+	31	7,095	34.0%	14.7%	96.6%
Total	188	20,042	35.4%	16.7%	95.7%

* both screening colonoscopy and primary screening colonoscopy

year 2011

ADR – international studies comparison

Source	CRC incidence (ASR-W)	Screening colonoscopies (FOBT+)		Primary screening colonoscopies	
		Adenoma DR	Advanced adenoma DR	Adenoma DR	Advanced adenoma DR
Czech republic	39,2	33,6%	16,6%	24,0%	7,5%
Bavaria	35,5			24,7%	
Germany					8,6% / 4,9%
England	30,8	32,1 (PPV for neoplasia)			
Poland	24,5			12,2% (median ADR)	5,9% (advanced neoplasia)
Spain	30,4	30,3	24,4		

Adverse events of colonoscopy

Years 2006-2011
n = 78,856

- TOTAL
 - Perforation: 64 (0,08% of all examinations)
- DIAGNOSTIC, n = 53 763
 - Perforation: 20 (0,03% of all examinations)
- POLYPECTOMY, n = 23 216
 - Perforation: 44 (0,13% EPE)
 - Bleeding: 285 (0,82% EPE)

Comparison with literature (Panteris V et al., Endoscopy, 2009):

Perforations: colonoscopy 0,07%, EPE 0,1%

Conclusion

- Successes:
 - programme is effective (82,771 colonoscopies, 26,479 adenomas, 3,463 cancers)
 - basic early performance indicators implemented and accomplished
- Challenges:
 - increase of target population coverage
 - development of long-term impact indicators