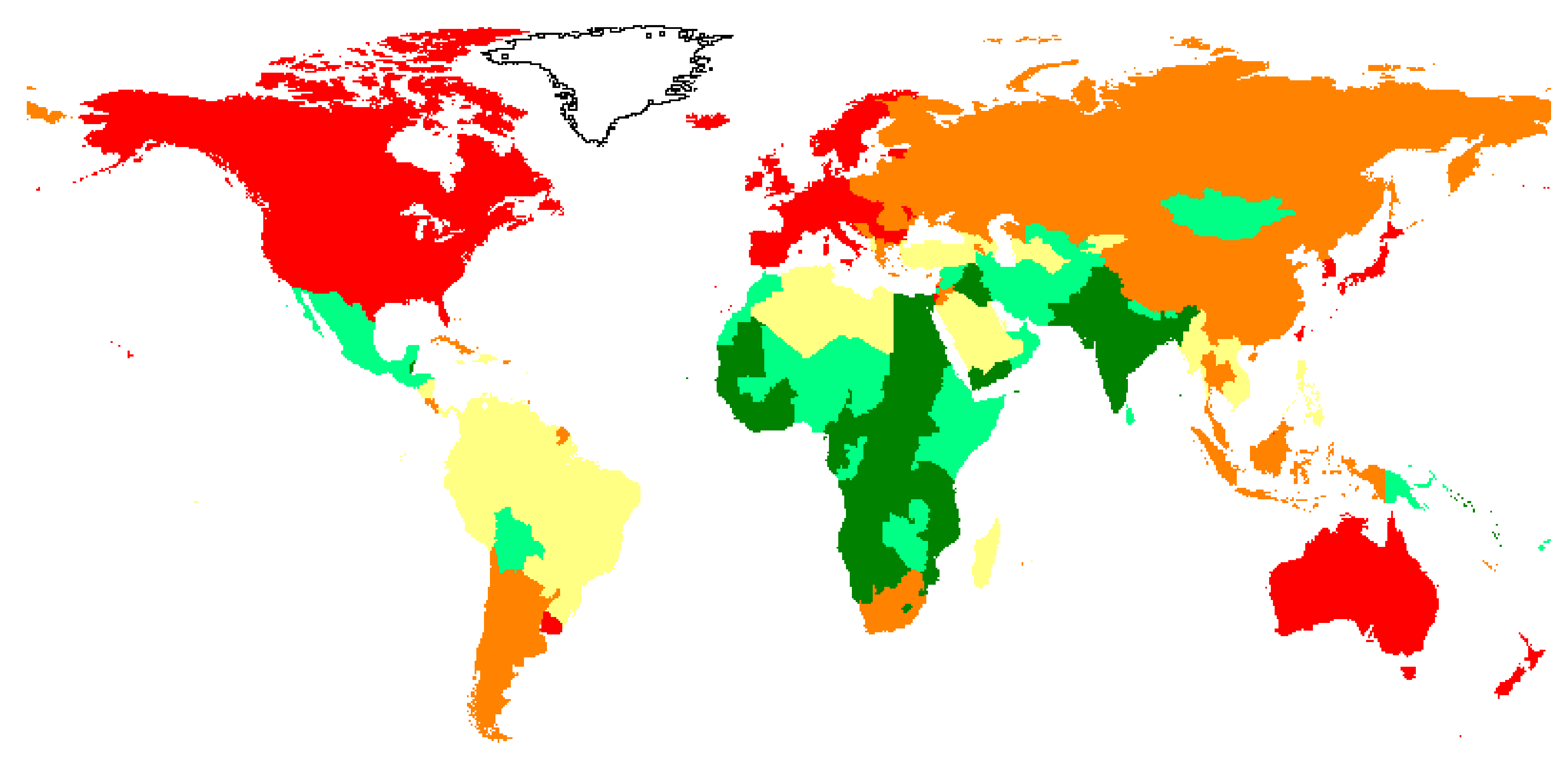
Colorectal cancer in Estonia:present and plans.

Tiit Suuroja

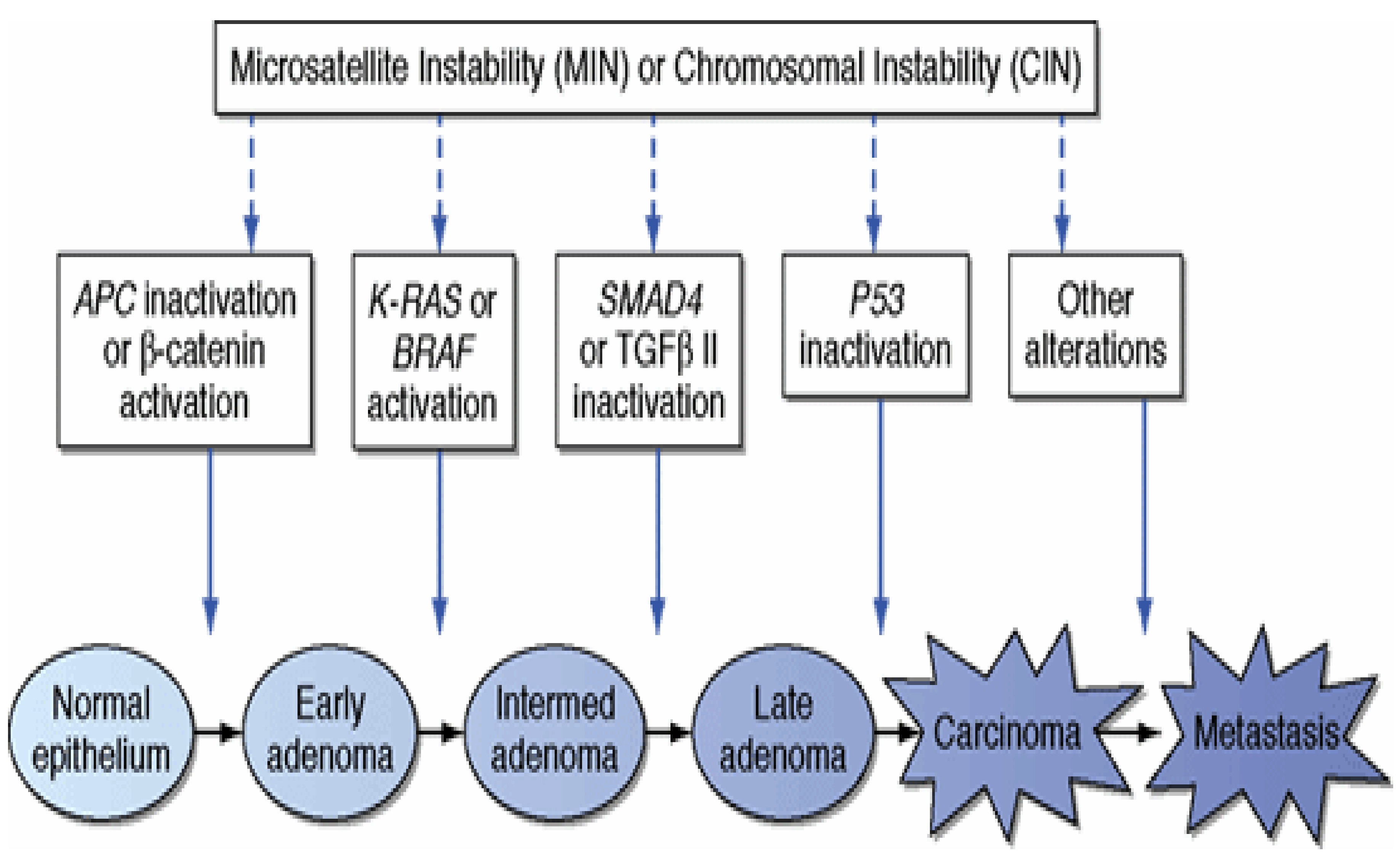
NEMC

International Agency for Research on Cancer
Organization

Estimated age-standardised incidence rate per 100,000
Colorectum: both sexes, all ages

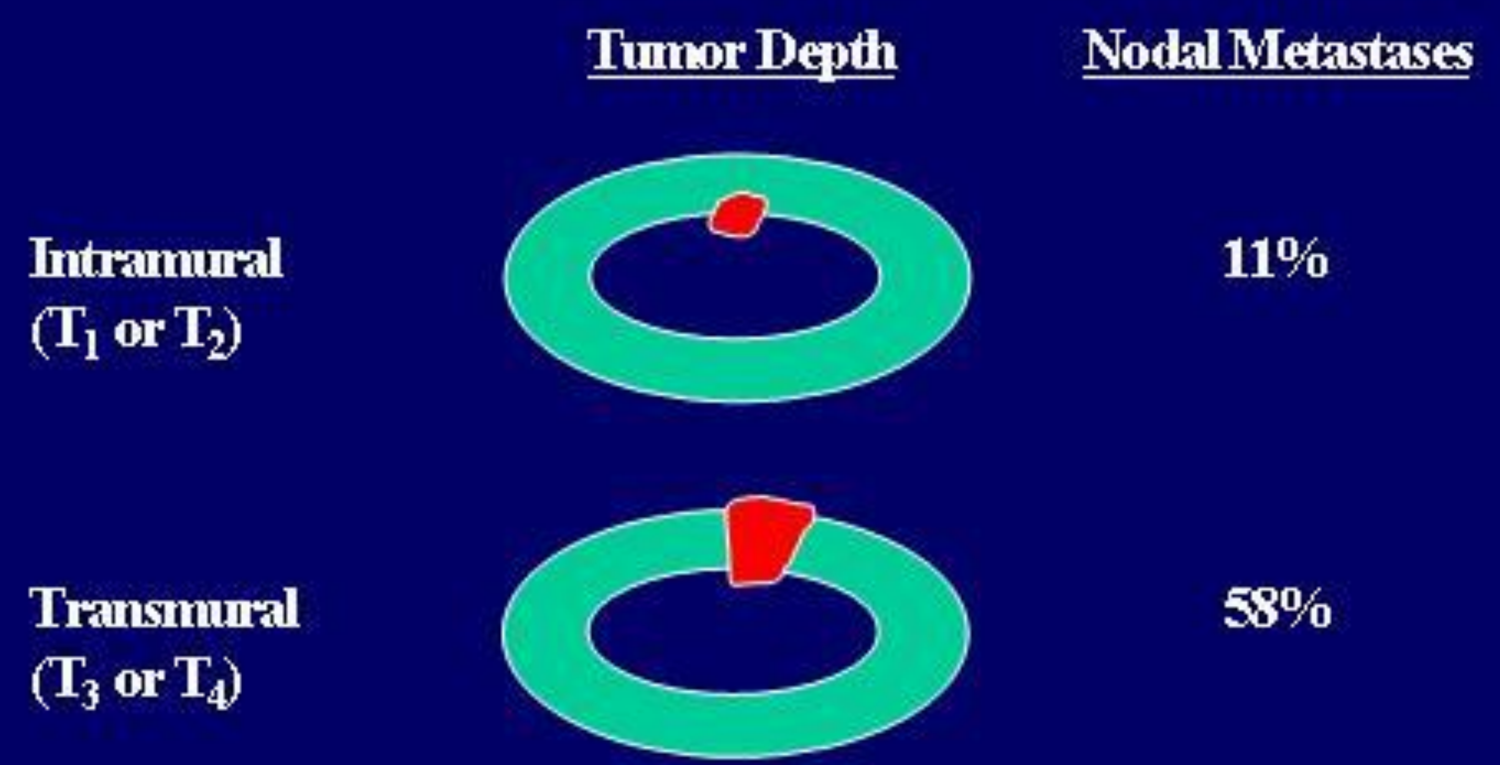


GLOBOCAN 2008 (IARC) - 17.10.2010

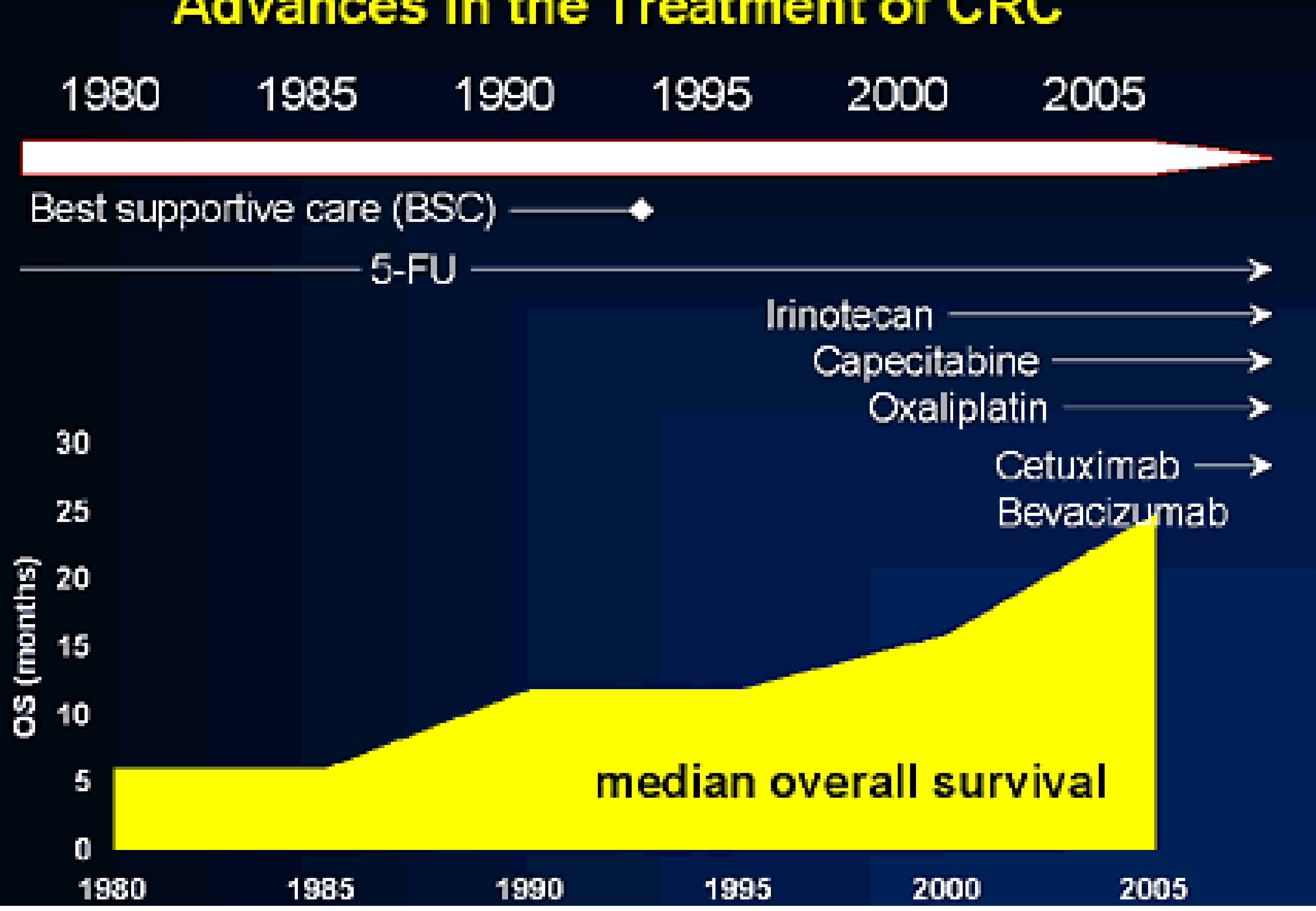


Microsatellite Instability (MIN) or Chromosomal Instability (CIN)
APC inactivation or β-catenin activation
K-RAS or BRAF activation
SMAD4 or TGFβ II inactivation
P53 inactivation
Other alterations
Normal epithelium
Early adenoma
Intermed adenoma
Late adenoma
Carcinoma
Metastasis

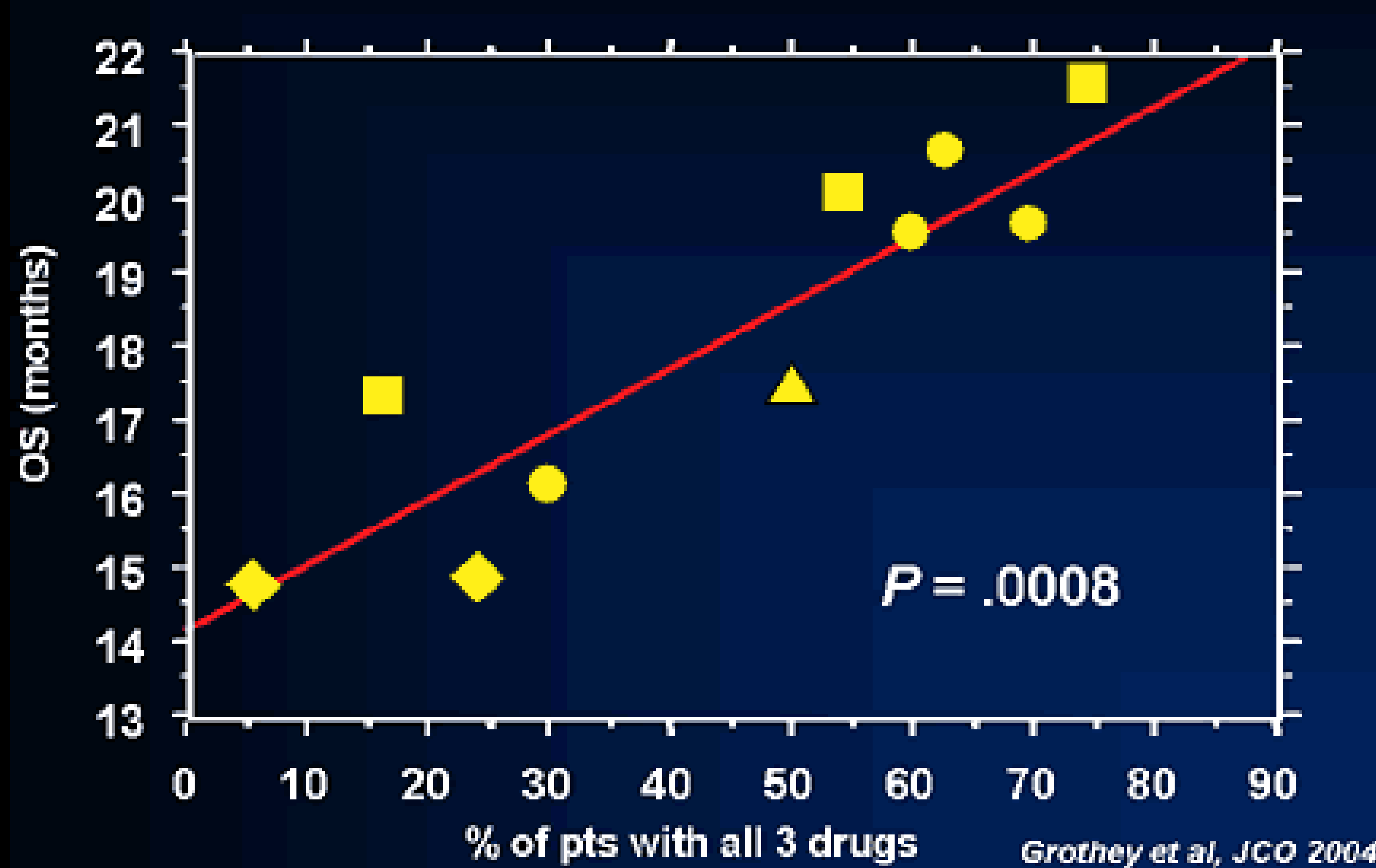
Regional Spread of Rectal Cancer



Proc Royal Soc Med 59:38; 1966

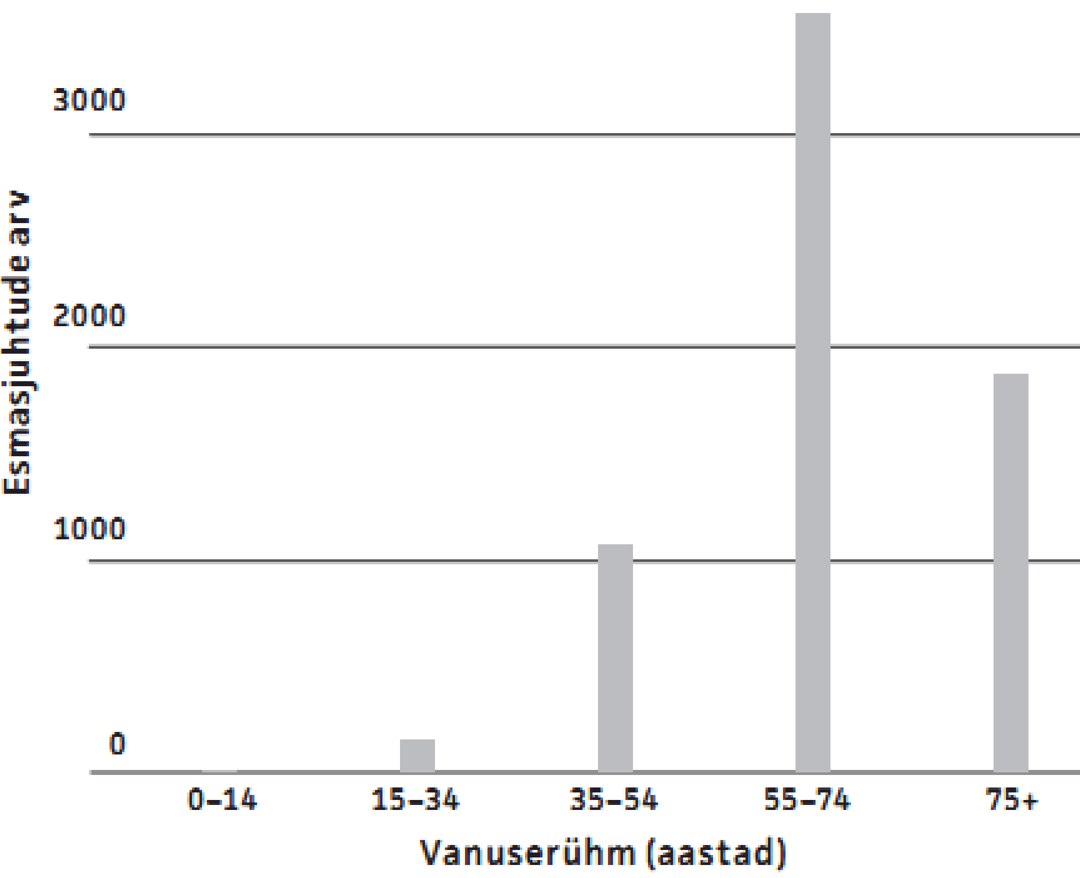

Advances in the Treatment of CRC
1980
1985
1990
1995
2000
2005
Best supportive care (BSC)
5-FU
Irinotecan
Capecitabine
Oxaliplatin
Cetuximab
Bevacizumab
30
25
20
15
10
5
0
OS (months)
median overall survival
1980
1985
1990
1995
2000
2005

All 3 Drugs



Cancer incidence

prostate	877
skin	818
cr	771
lung	727
breast	635


4000
3000
2000
1000
0
Esmasjuhtude arv
0–14
15–34
35–54
55–74
75+
Vanuserühm (aastad)

Paige	RHK-10	Esmasjuhud		Haigestumuskordaja (100 000 in.k.)	
		Arv	%	Tavaline	Standarditud
Eesnääre	C61	818	24,2	132,2	82,3
Kops	C33–C34	509	15,0	82,3	53,1
Käär- ja pärasool	C18–C21	331	9,8	53,5	34,3
Nahk (v.a melanoom)	C44	330	9,8	53,2	33,9
Magu	C16	230	6,8	37,2	24,3
Kusepõis	C67	157	4,6	25,4	16,7
Neer	C64–C65	154	4,6	24,9	16,8
Kõhunääre	C25	113	3,3	18,3	11,9
Nahamelanoom	C43	69	2,0	11,2	7,7
Kõri	C32	63	1,9	10,2	6,8
Kõik paikmed	**C00–C97**	**3384**	**100,0**	**546,9**	**359,3**

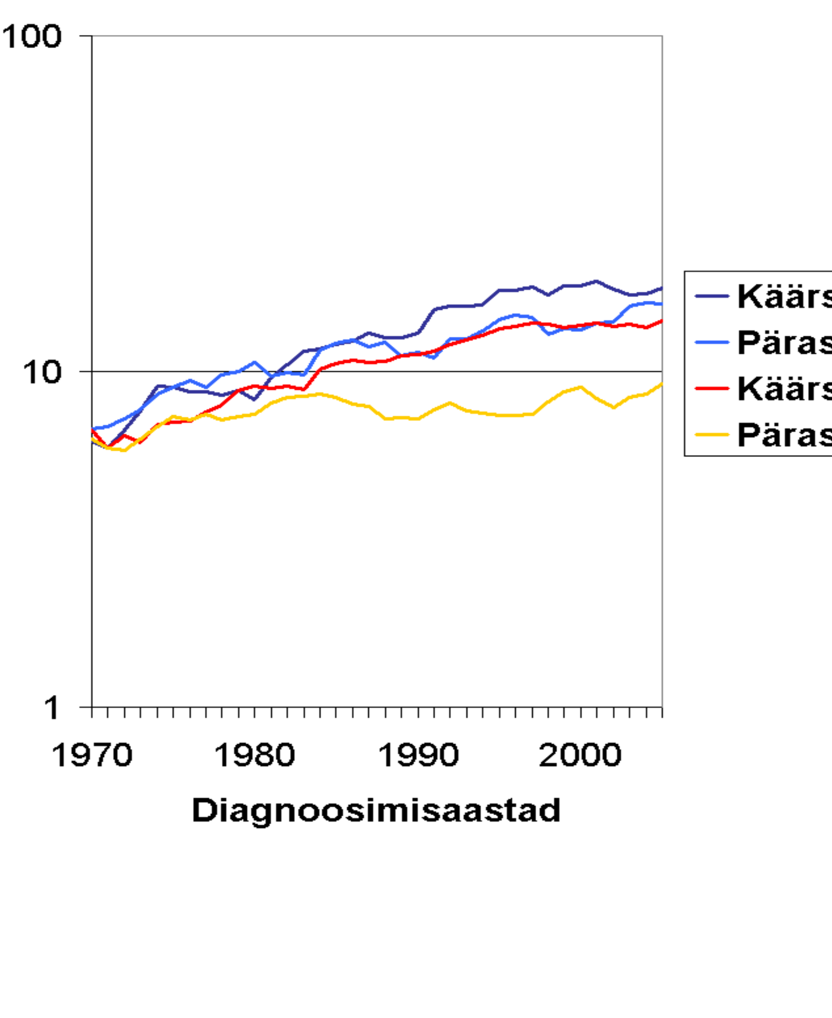
Naised

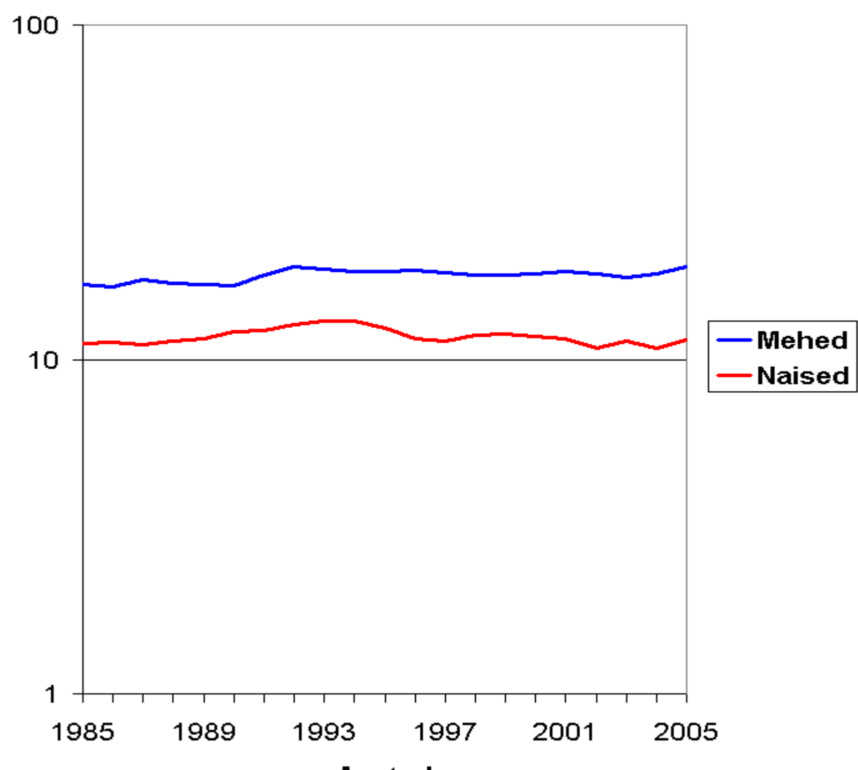
Paige	RHK-10	Esmasjuhud		Haigestumuskordaja (100 000 in.k.)	
		Arv	%	Tavaline	Standarditud
Rind	C50	598	18,1	82,5	47,3
Nahk (v.a melanoom)	C44	457	13,7	63,1	27,1
Käär- ja pärasool	C18–C21	395	12,0	54,5	22,8
Emakakeha	C54	200	6,1	27,6	14,4
Magu	C16	195	5,9	26,9	11,8
Munasari	C56	189	5,7	26,1	15,4
Emakakael	C53	159	4,8	21,9	15,4
Kops	C33–C34	154	4,7	21,2	9,9

CRC new cases

year	*incidence*
2001	672
2002	701
2003	684
2004	761
2005	728
2006	772
2007	758
2008	771

Estonian Cancer Registry

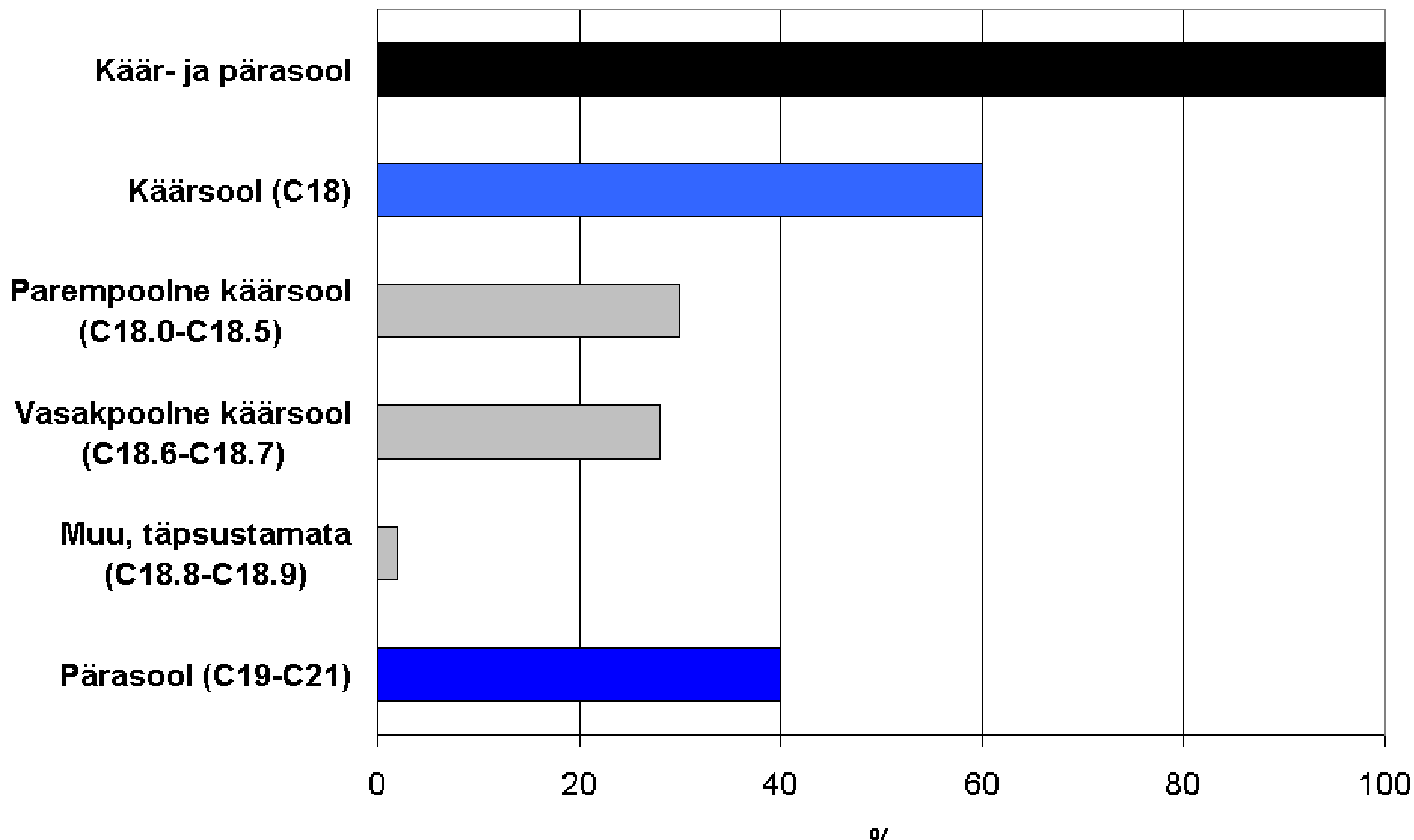

Haigestumuskordaja* 100 000 in.k.
100
10
1
1970
1980
1990
2000
Diagnoosimisaastad
Käärsool, M
Pärasool, M
Käärsool, N
Pärasool, N

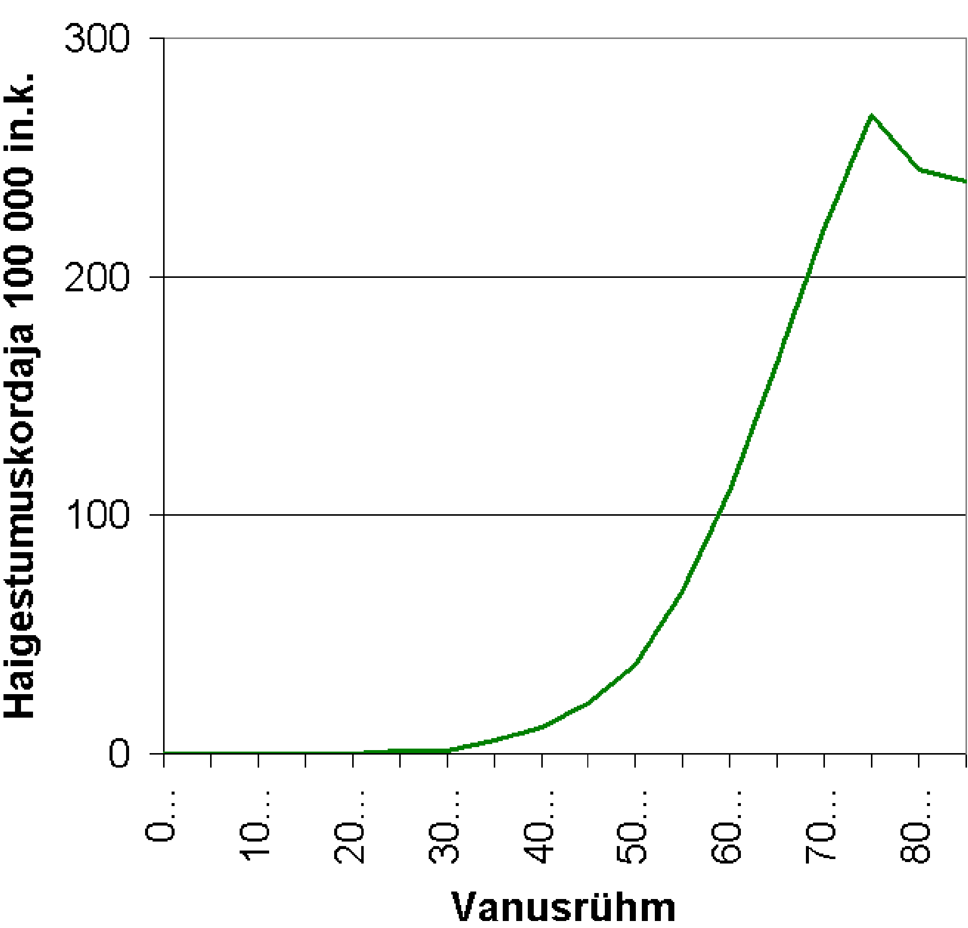

Standarditud* suremuskordaja 100 000 in.k.
100
10
1
1985
1989
1993
1997
2001
2005
Aastad
Mehed
Naised

CRC deaths

year	deaths
2008	401
2009	417
2010	409
2011	432

Estonian Cancer Registry


Käär- ja pärasool
Käärsool (C18)
Parempoolne käärsool
(C18.0-C18.5)
Vasakpoolne käärsool
(C18.6-C18.7)
Muu, täpsustamata
(C18.8-C18.9)
Pärasool (C19-C21)
0
20
40
60
80
100
%

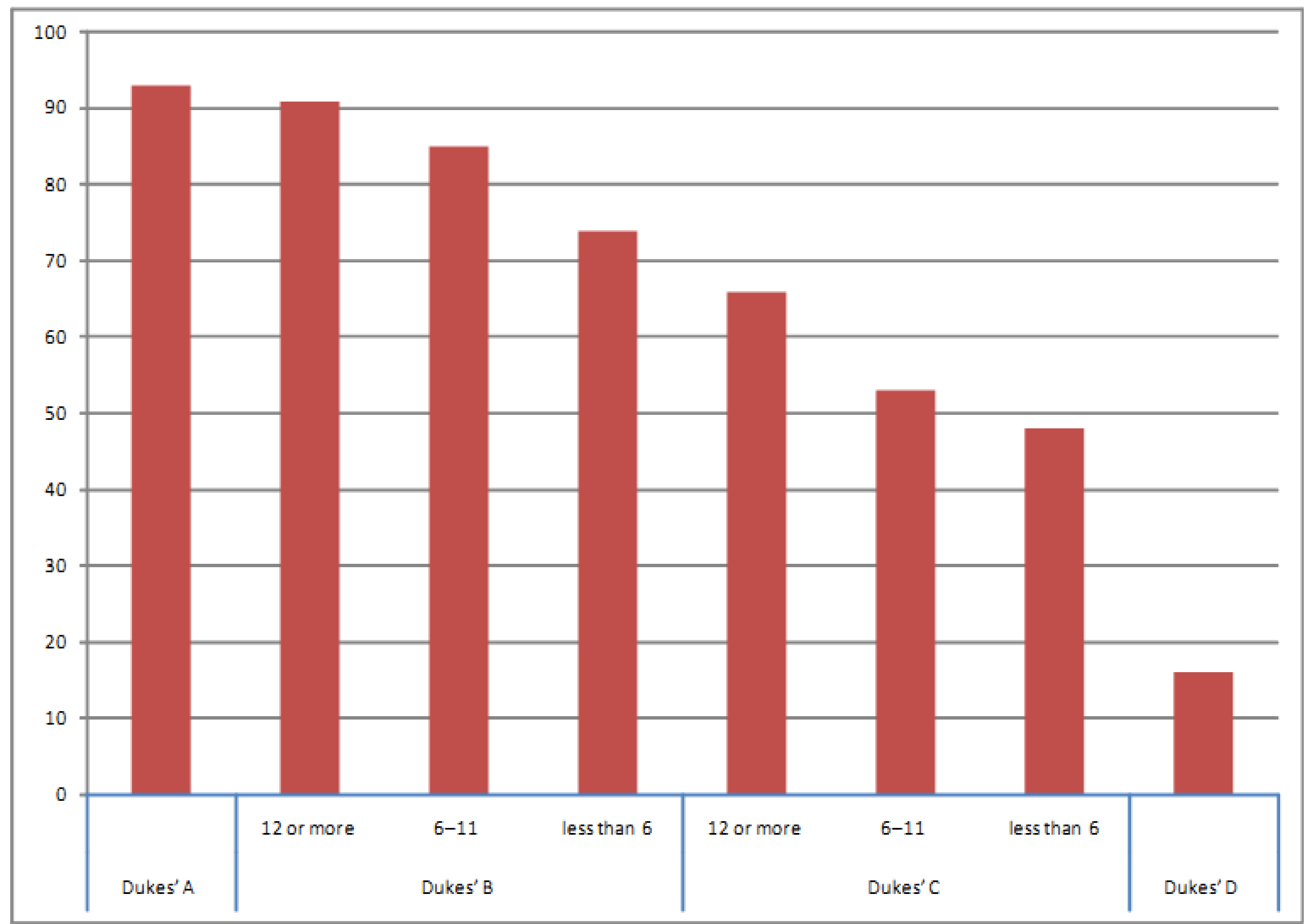


Haigestumuskordaja 100 000 in.k.
300
200
100
0
0...
10...
20...
30...
40...
50...
60...
70...
80...
Vanusrühm

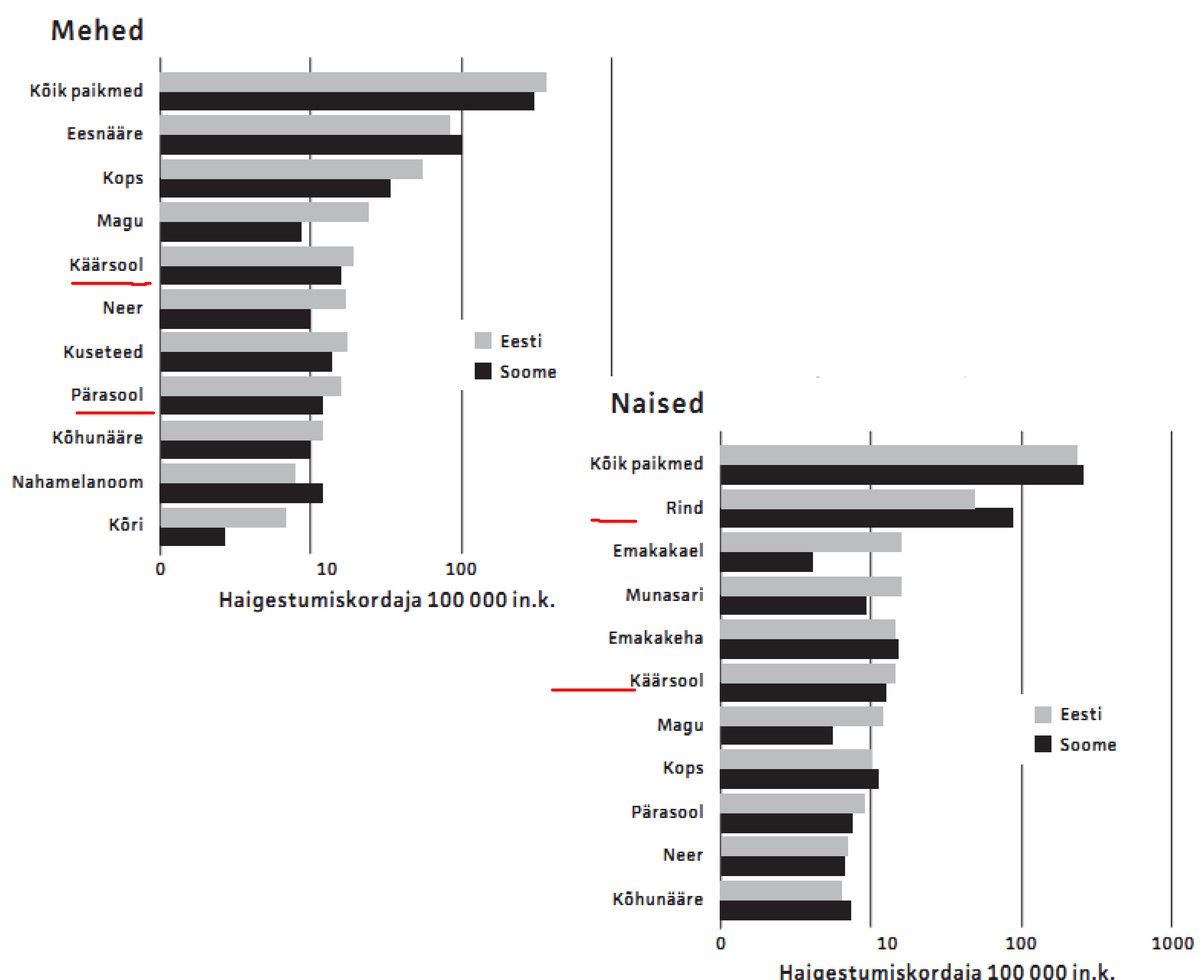
local	42%
regional	18%
T4	6%
distant metastasis	28%
not specified	6%

Estonian Cancer Registry

Figure 1.2: Three-year CRC survival by stage and number of lymph nodes examined, for countries in the Eurocare study (data source: Ciccolallo et al. 2005).



Joonis 9. Eesti ja teiste Euroopa riikide viie aasta suhteline elulemus käär- ja pärasoolevähi korral (elulemusmäär, %)*



Mehed
Kõik paikmed
Eesnääre
Kops
Magu
Käärsool
Neer
Kuseteed
Pärasool
Kõhunääre
Nahamelanoom
Kõri
Eesti
Soome
0
10
100
Haigestumiskordaja 100 000 in.k.
Naised
Kõik paikmed
Rind
Emakakael
Munasari
Emakakeha
Käärsool
Magu
Kops
Pärasool
Neer
Kõhunääre
Eesti
Soome
0
10
100
1000
Haigestumiskordaja 100 000 in.k.

Paige	Sugu**	Viie aasta suhteline elulemusmäär, %					
		1990–1994 (a)	1995–1999 (b)	2000–2004 (c)	Vahe (c) – (a)	p	Prognoos 2005–2009
Magu	M + N	19,2	20,8	24,1	4,9	<0,01	26,5
Käär- ja pärasool	M + N	36,1	42,6	49,1	13,0	<0,01	57,1
Kops	M + N	9,5	9,6	11,6	2,1	<0,01	12,5
Nahamelanoom	M	51,6	54,1	58,8	7,2	0,10	63,6
	N	57,5	66,3	74,2	16,7	0,01	78,1
Rind	N	58,0	60,6	66,2	8,2	<0,01	69,6
Emakakeha	N	60,6	64,5	72,1	11,5	<0,01	73,8
Munasari	N	21,7	24,9	29,7	8,0	<0,01	37,0
Eesnääre	M	44,1	61,6	65,9	21,8	<0,01	72,4
Munand	M	59,8	69,2	74,5	14,7	0,08	81,8
Neer	M + N	38,9	52,7	59,8	20,9	<0,01	69,1
Kilpnääre	M + N	81,2	86,2	88,9	7,7	<0,01	92,3
Mitte-Hodgkini lümfoom	M + N	35,6	38,9	38,8	3,2	0,03	44,5
Hulgimüeloom	M + N	18,8	20,9	30,2	11,4	0,01	34,4
Leukeemia	M + N	35,1	36,7	43,2	8,1	<0,01	47,1

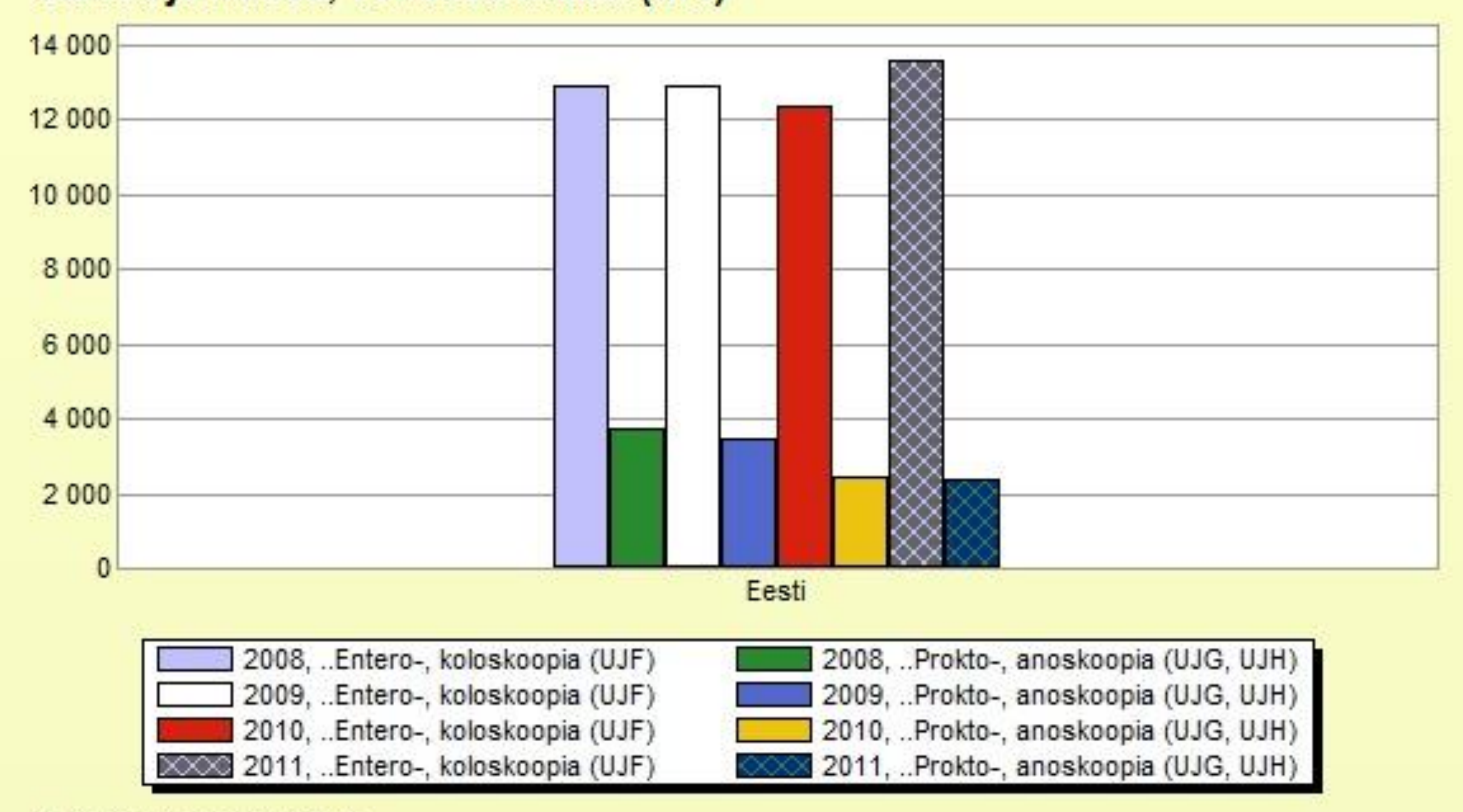
* Kirjandusallika 4 põhjal.
** M – mehed, N – naised.

Structure of oncological care

- National Cancer Strategy(intr.2007)
- 2 regional hospitals(NEMC,TUH)
- to some extent in 2 central hospitals
- emergency service in county hospitals as well

Endoscopy service

- instrumental part quite good
- facilities and competence unevenly distributed
- competence(distribution,assesment and auditing,criteria)


Endoskoopilised uuringud
--- Aasta , Uuring (NCSP) , Maakond.
Mehed ja naised, Vanused kokku. (Arv)
14 000
12 000
10 000
8 000
6 000
4 000
2 000
0
Eesti
2008, ..Entero-, koloskoopia (UJF)
2009, ..Entero-, koloskoopia (UJF)
2010, ..Entero-, koloskoopia (UJF)
2011, ..Entero-, koloskoopia (UJF)
2008, ..Prokto-, anoskoopia (UJG, UJH)
2009, ..Prokto-, anoskoopia (UJG, UJH)
2010, ..Prokto-, anoskoopia (UJG, UJH)
2011, ..Prokto-, anoskoopia (UJG, UJH)
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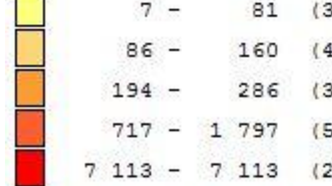
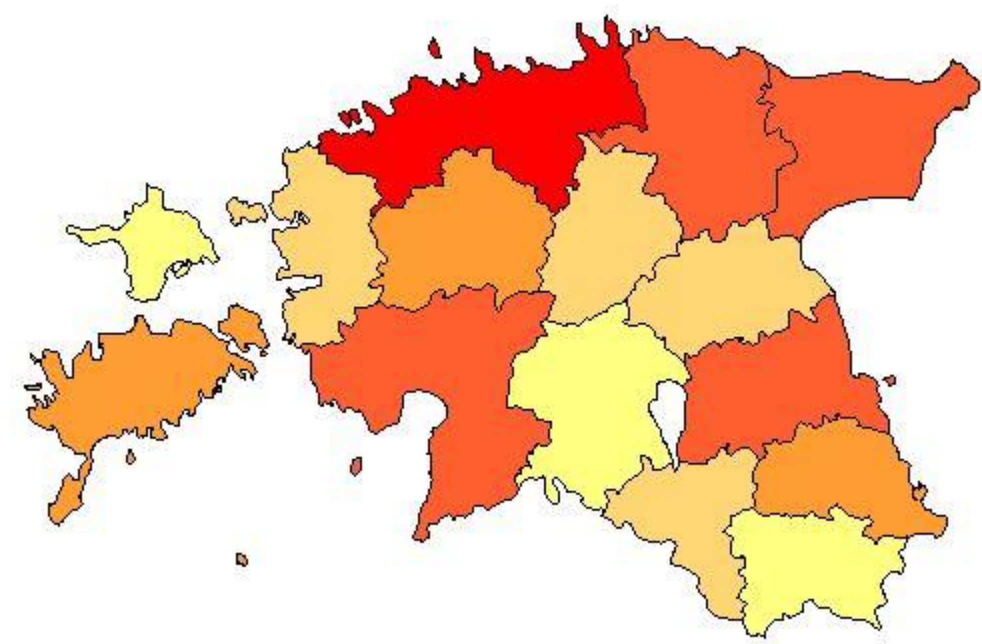
DR30: Endoskoopilised uuringud soo, vanusrühma, teenuse osutamise viisi ja maakonna järgi

Maakond: Harju maakond
Aasta: 2009
Uuring (NCSP): ..Entero-, koloskoopia (UJF)
Sugu: Mehed ja naised
Vanusrühm: Vanused kokku



Andmebaas: Tervise Arengu Instituut
Kaardiallikas: Maa-amet



Diagnostic radiology

- CT situation not bad
- PET
- CT,MRI waiting list normal
- workload

Pathology service

- full size labs in 3 hospitals
- smaller ones in 3 hospitals
- staff senescence,overburdened,lack of vision on the govermental level

Contemporary CRC treatment paradigm

- surgery,tse RT are curative modalities
- NA CT prolongs DFS in HM
- adjuvant CT improves survival after surgery
- palliative CT improves survival
- NA and A RT improves LC and tse OS in rectal cancer
- GB FOB and sigmoidoscopy improves CSS

Surgical treatment

- oncological surgery in 4 hospitals
- emergency cases in county hospitals too
- 620 colonic resections(ca)
- 100 laparoscopic resections

Radiotherapy

- 4 linear accelerators,2 more in the nearest future
- neoadjuvant therapy as standard, both short and long course

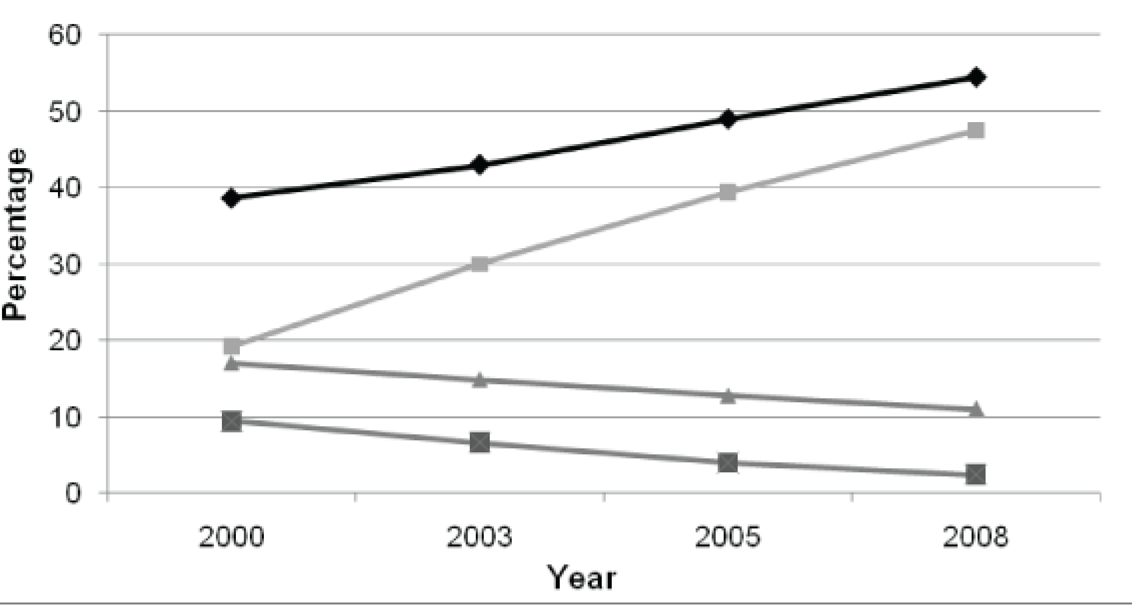
Possibilities of systemic treatment

- capecitabine(100% covered)
- oxaliplatin,irinotecan
- bevacizumab(25% of cases)
- EGFR directed therapy-neoadjuvant,barely covered
- regorafenib not available
- ChT done in 3 centres
- 2011-736 pt(3245 courses),2012-701 pt (3361 courses).

Cost of systemic treatment

- 2,0 m2
- 4 lines of treatment(Avastin+FOLFOX 6-Avastin+FOLFIRI-cetuximab-regorafenib)
- evidence based and by price=64 948 EUR-i e. 1 013 189 EEK-i
- code-based=25 140 EUR-i e.400 000 EEK-i
- adjuvant treatment of one patient=3100 EUR-i e.50000 EEK-i
- code based=6704 EUR-i e. 104 582 EEK-i

Colorectal cancer screening modality trends in adults ages 50-75, United States, 2000–2008



Any exam (FOBT in past year, sigmoidoscopy in past 5 years, or colonoscopy in past 10 years)

Colonoscopy in past 10 years

Home FOBT in past year

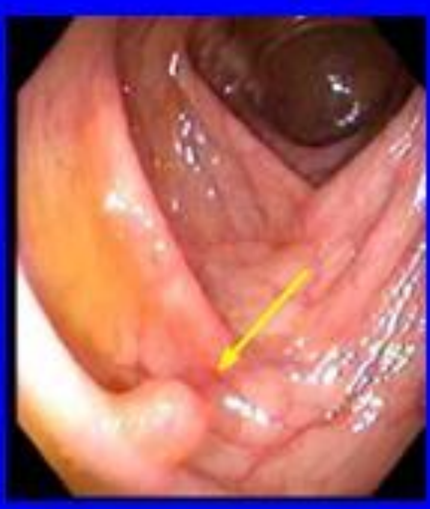
Sigmoidoscopy in past 5 years

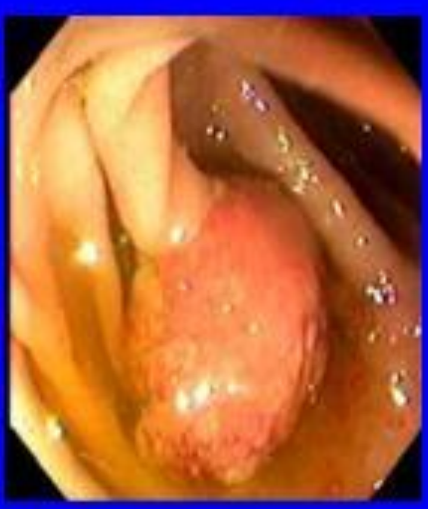
Source: National Health Interview Survey Public Use Data File 2000, 2003, 2005, and 2008. National Center for Health Statistics, Centers for Disease Control and Prevention. Data synthesis courtesy of Carrie Klabunde.

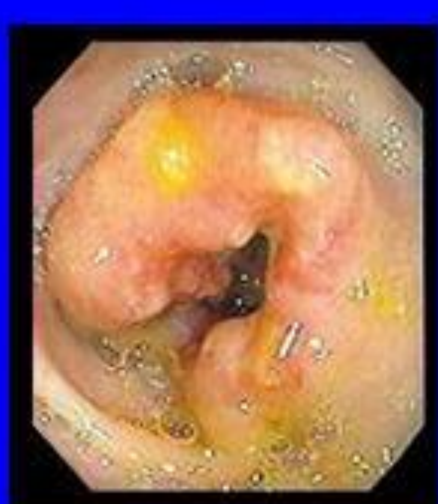
Why Screening Works:
Polyp to Cancer: 10 to 15 years

Small Polyp

Cancer







National CRC screening using colonoscopy in Poland

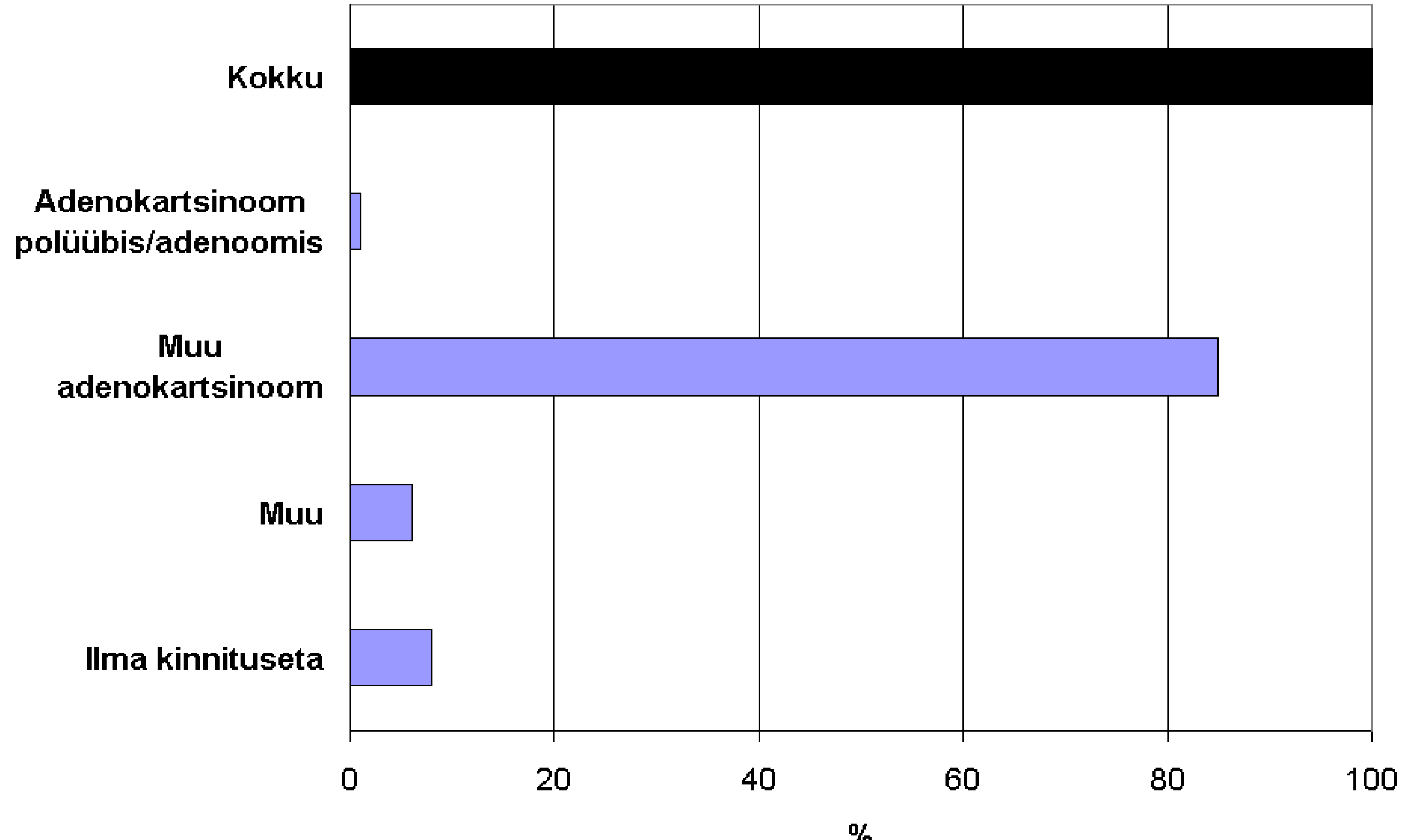
- >50,000 screenees from 40 sites
- Cecum reached in >90%
- Normal colonoscopy - 47%
- Non-neoplastic lesions - 29%
- Adenomas - 24%
- Advanced Adenoma - 5%
- Cancer <0.8%
- Complications 0.1%
- Perforations 0.01%

Regula NEJM, 2006

Table 1.2: Age range and mortality reduction in the four randomised controlled trials on FOBT

Study	Age range	RRR CRC mortality	Years of follow-up
Nottingham	45–75	13% (CI 0.78–0.97)	11 years
Funen	45–74	11% (CI 0.78–1.01)	17 years
Minnesota	50–80	21% (CI 0.62–0.97)	18 years
Goteborg	60–64	16% (CI 0.78–0.90)	15.5 years

Quality assurance guidelines etc.



Kokku
Adenokartsinoom polüübis/adenoomis
Muu adenokartsinoom
Muu
Ilma kinnituseta
0
20
40
60
80
100
%

Future pilot`s main questions

- 3-4 geographioc locations (town,county,island?,cultural differences?)
- Different strategy in different locations?
- Age 60-64 ?one year?
- FOB(guaiac vs immune?,quantitative vs qualitative?)
- Based on mail ?GP?
- central lab?
- different levels of endoscopy service?
- central management,data collection and analyzation,auditing,procurement of tests,delivery of tests and local procedures,treatment etc

Screening summary

- time is ripe for CRC screening in Estonia
- evaluation of situation,analysis,pilot or two,roll-out
- most likely faecal occult blood test?
- immunological method?guaiac?
- suggested one method then possibility to choose?
- final goal is population-based CRC screening programme