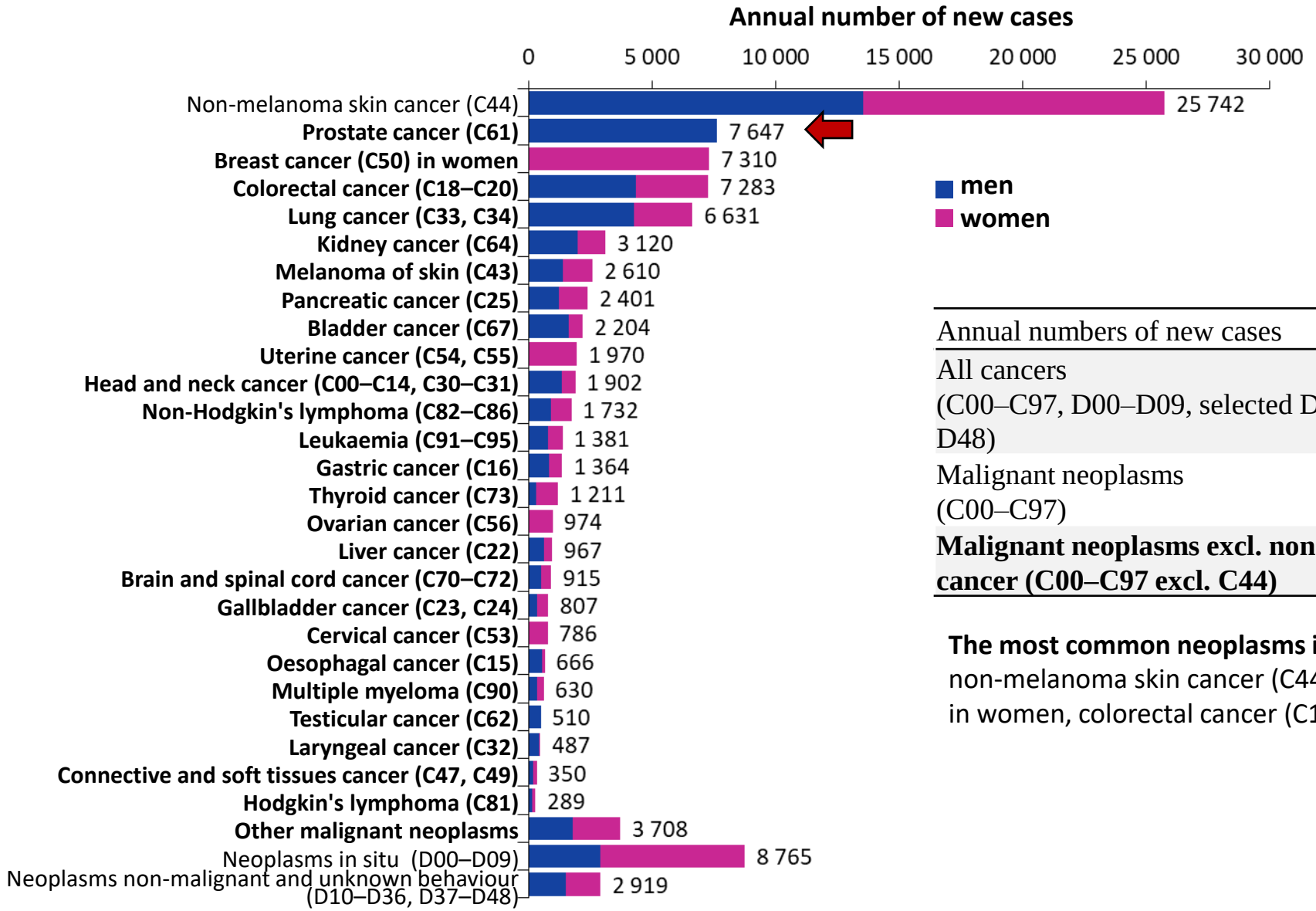
Why we need organized early detection of prostate cancer?

Marko Babjuk

Dept. Of Urology, 2nd Faculty of Medicine, Hospital Motol, Praha, Czech Republic

Cancer incidence in the Czech Republic in 2016–2020

Source: Czech National Cancer Registry

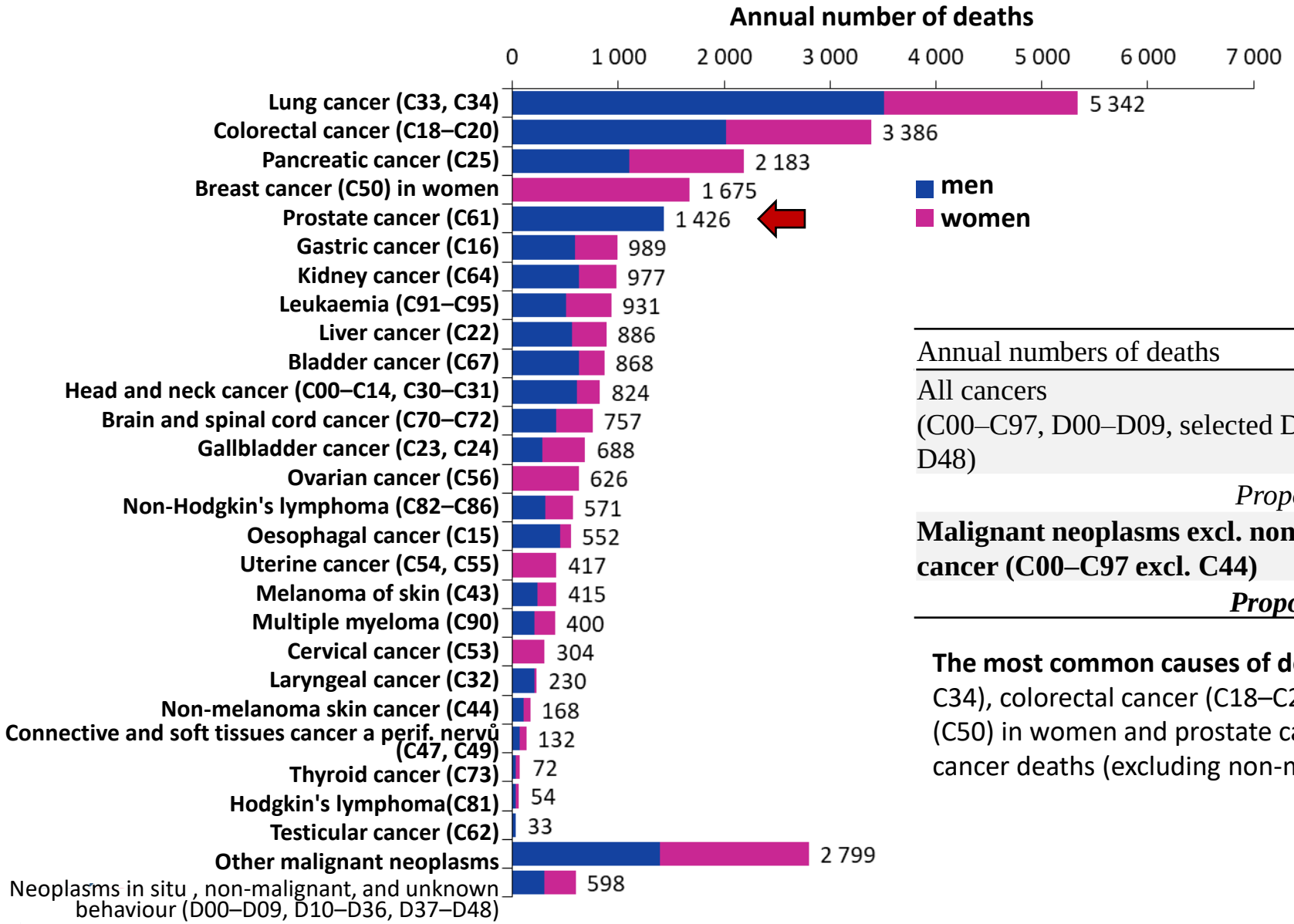


Annual numbers of new cases	men	women	total
All cancers (C00–C97, D00–D09, selected D10–D36, D37–D48)	50 033	47 246	97 280
Malignant neoplasms (C00–C97)	45 634	39 962	85 596
Malignant neoplasms excl. non-melanoma skin cancer (C00–C97 excl. C44)	**32 084**	**27 770**	**59 854**

The most common neoplasms in the Czech Republic in 2016–2020 were non-melanoma skin cancer (C44), prostate cancer (C61), breast cancer (C50) in women, colorectal cancer (C18–C20) and lung cancer (C33, C34).

Cancer mortality in the Czech Republic in 2016–2020

Source: Czech Statistical Office

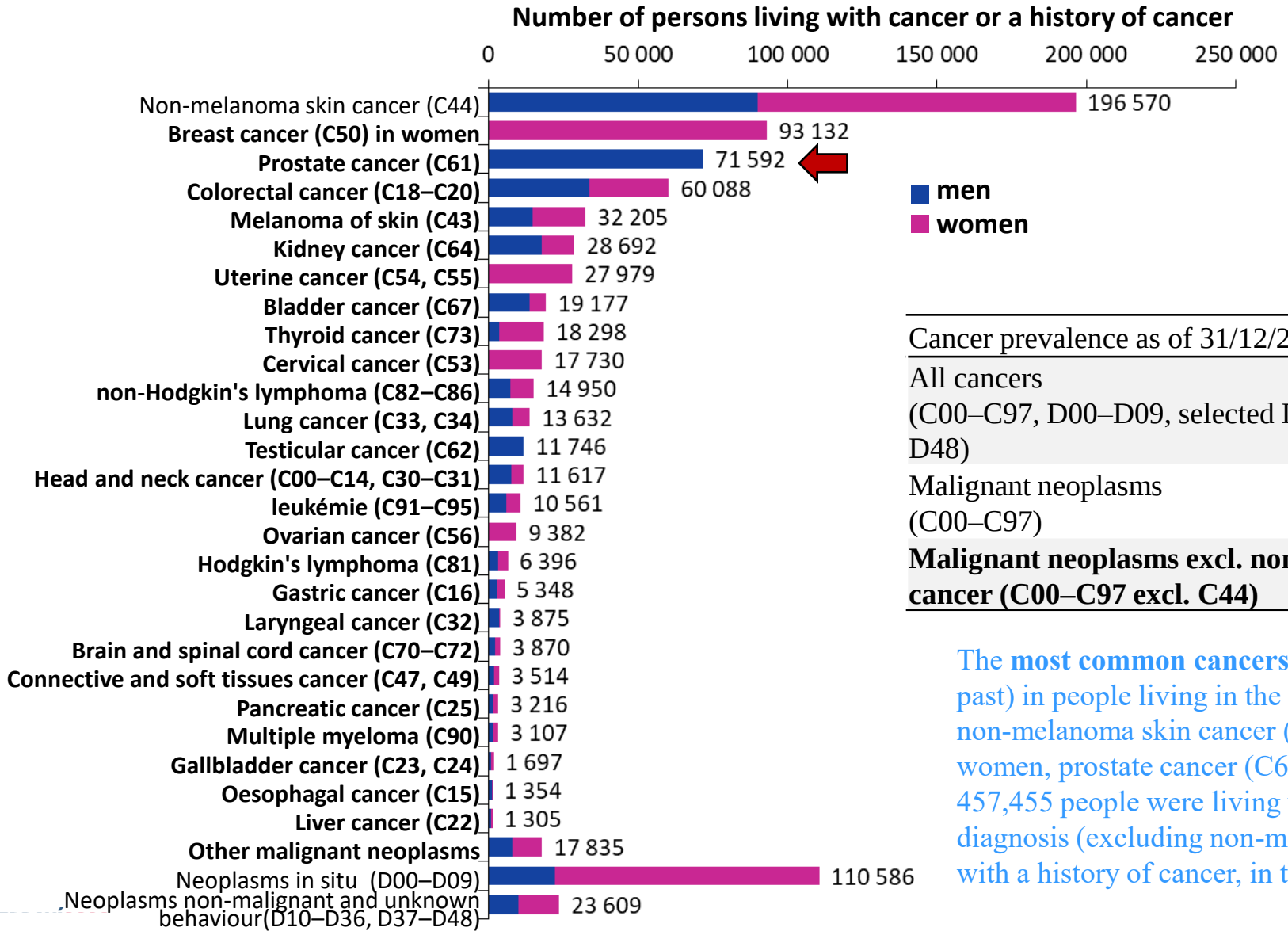


Annual numbers of deaths	men	women	total
All cancers (C00–C97, D00–D09, selected D10–D36, D37–D48)	15 652	12 650	28 302
Proportion of all deaths	*26,8 %*	*22,5 %*	*24,7 %*
Malignant neoplasms excl. non-melanoma skin cancer (C00–C97 excl. C44)	**15 248**	**12 287**	**27 536**
Proportion of all deaths	***26,1 %***	***21,8 %***	***24,0 %***

The most common causes of death from cancer were lung cancer (C33, C34), colorectal cancer (C18–C20), pancreatic cancer (C25), breast cancer (C50) in women and prostate cancer (C61), which accounted for 50% of all cancer deaths (excluding non-melanoma skin cancer).

Cancer prevalence* in the Czech Republic as of 31/12/2020

Source: Czech National Cancer Registry



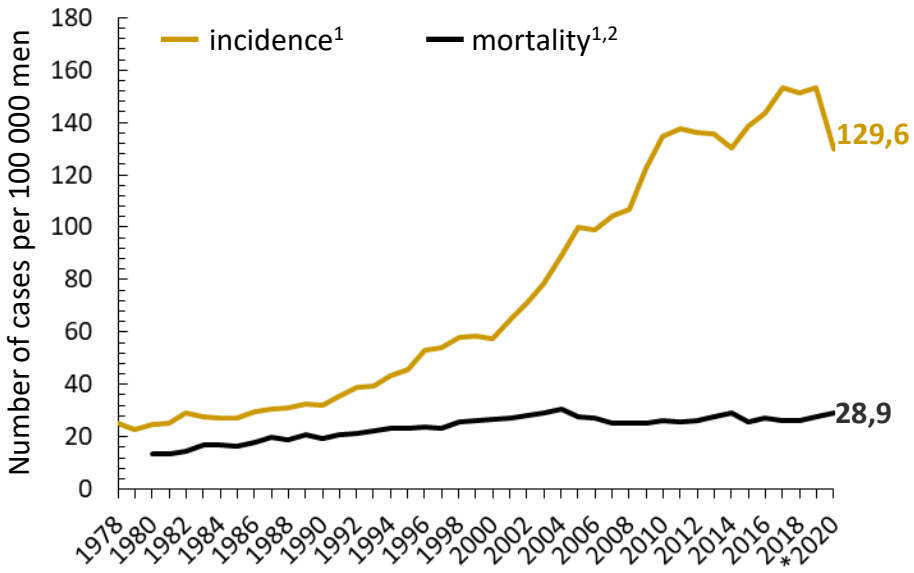
***People with a history of cancer (diagnosed at any time) who were alive on 31 Dec 2020**

Cancer prevalence as of 31/12/2020	men	women	total
All cancers (C00–C97, D00–D09, selected D10–D36, D37–D48)	295 630	428 294	723 924
Malignant neoplasms (C00–C97)	276 623	342 704	619 327
Malignant neoplasms excl. non-melanoma skin cancer (C00–C97 excl. C44)	**204 789**	**252 666**	**457 455**

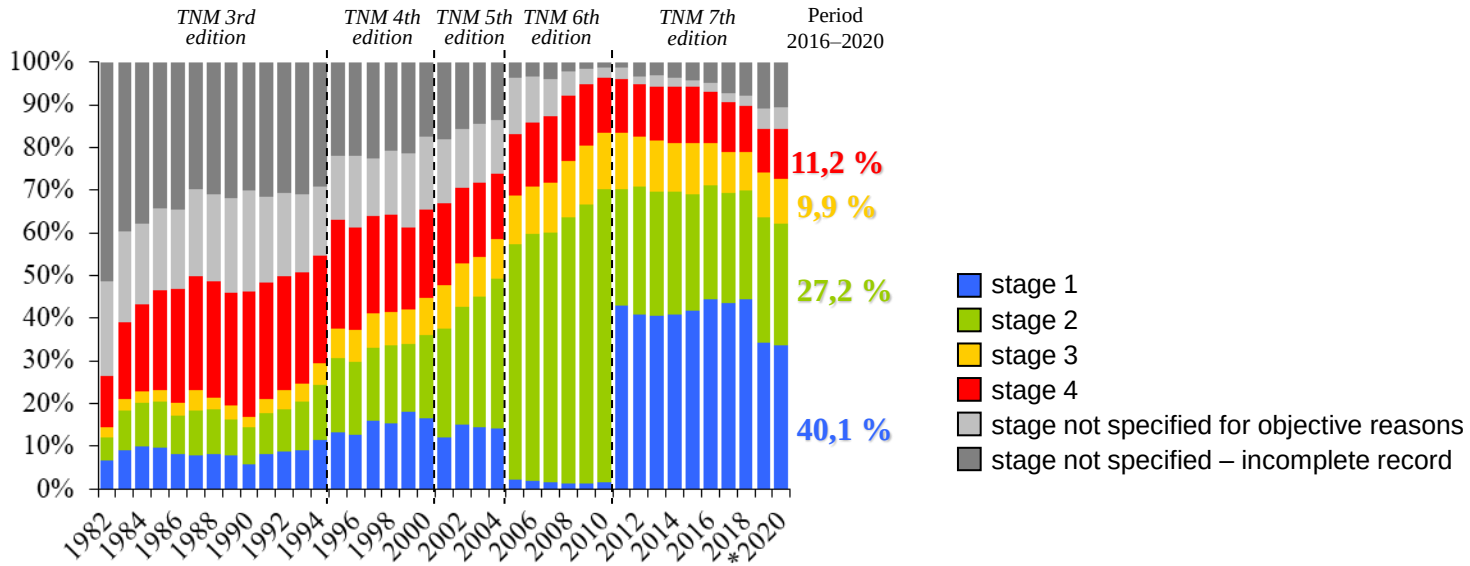
The **most common cancers** (present or with a history at any time in the past) in people living in the Czech Republic as of 31 December 2020 were non-melanoma skin cancer (C44), followed by breast cancer (C50) in women, prostate cancer (C61) and colorectal cancer (C18-C20). A total of 457,455 people were living with a malignant neoplasm, regardless of diagnosis (excluding non-melanoma skin cancer), either in the present or with a history of cancer, in the Czech Republic as of 31 December 2020.

Prostate cancer epidemiology

Incidence and mortality



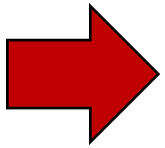
Clinical stages



Source: [1]Czech National Cancer Registry, [2]Czech Statistical Office

What is our goal in prostate cancer?

- Decrease mortality
- Detect those tumours, which should be treated
- Treat those tumours, which represent the danger for the patient
- Treat effectively, but without side effects and complications



- Concentration on prevention, risk adapted early detection and risk adapted approach in detected cases

PSA screening is connected with decrease of mortality

EUROPEAN UROLOGY 75 (2019) 374–377

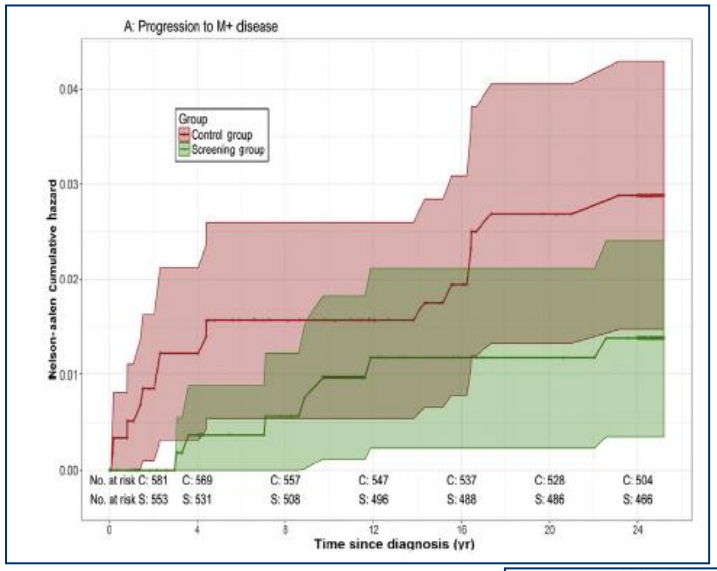
available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

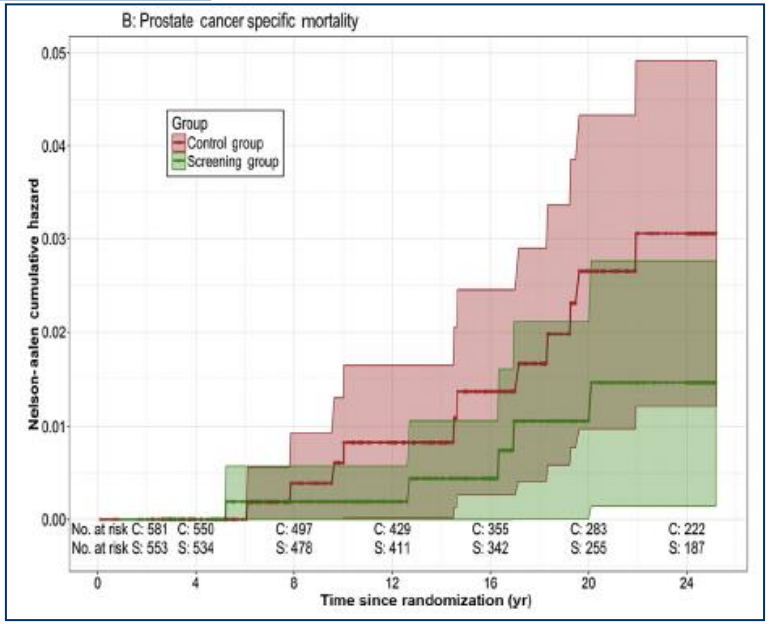
Brief Correspondence

Results of Prostate Cancer Screening in a Unique Cohort at 19 yr of Follow-up

Daniël F. Osses [a,b,], Sebastiaan Remmers [a], Fritz H. Schröder [a], Theo van der Kwast [c,d], Monique J. Roobol [a]*



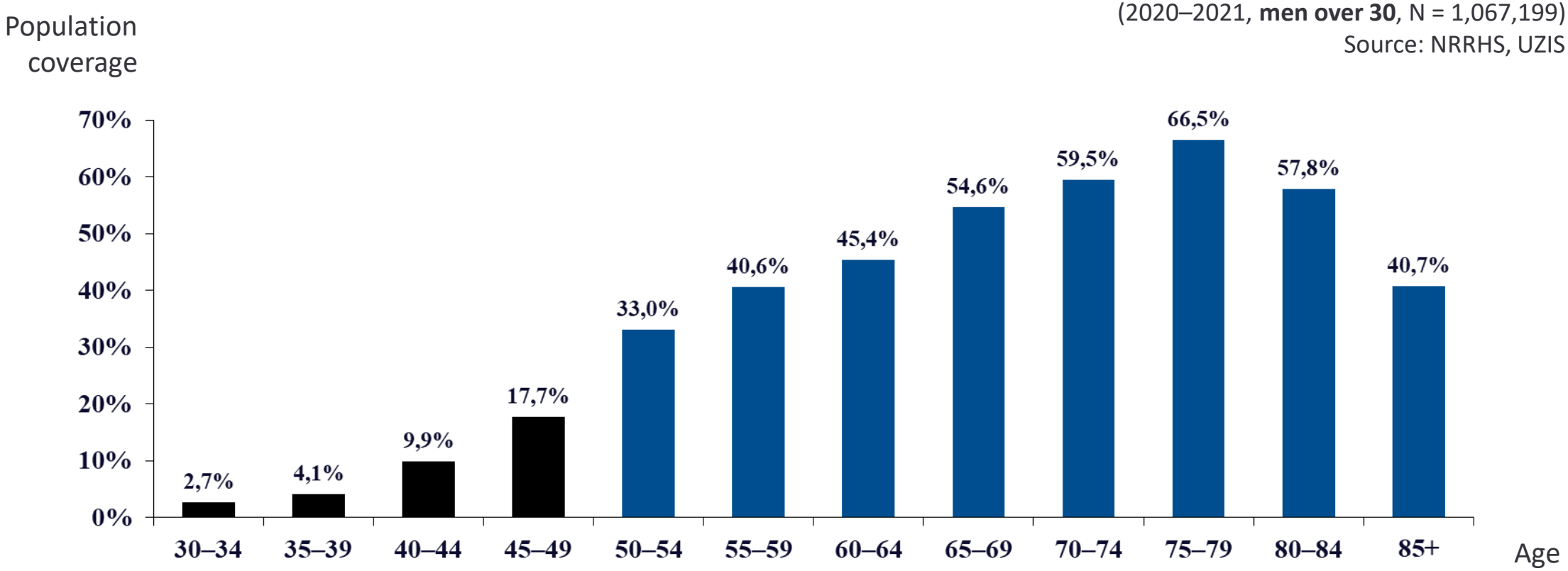
- 1134 men from Rotterdam cohort of ERSPC with PSA <10 ng/ml randomized between 1991 and 1992
- Biopsy in PSA ≥ 3ng/ml
- 19 Yrs of follow-up
- Decrease of PCa specific mortality of 52% and risk of progression to metastatic disease in 54%



Osses DF, et al. Eur Urol 2019;75:374-377

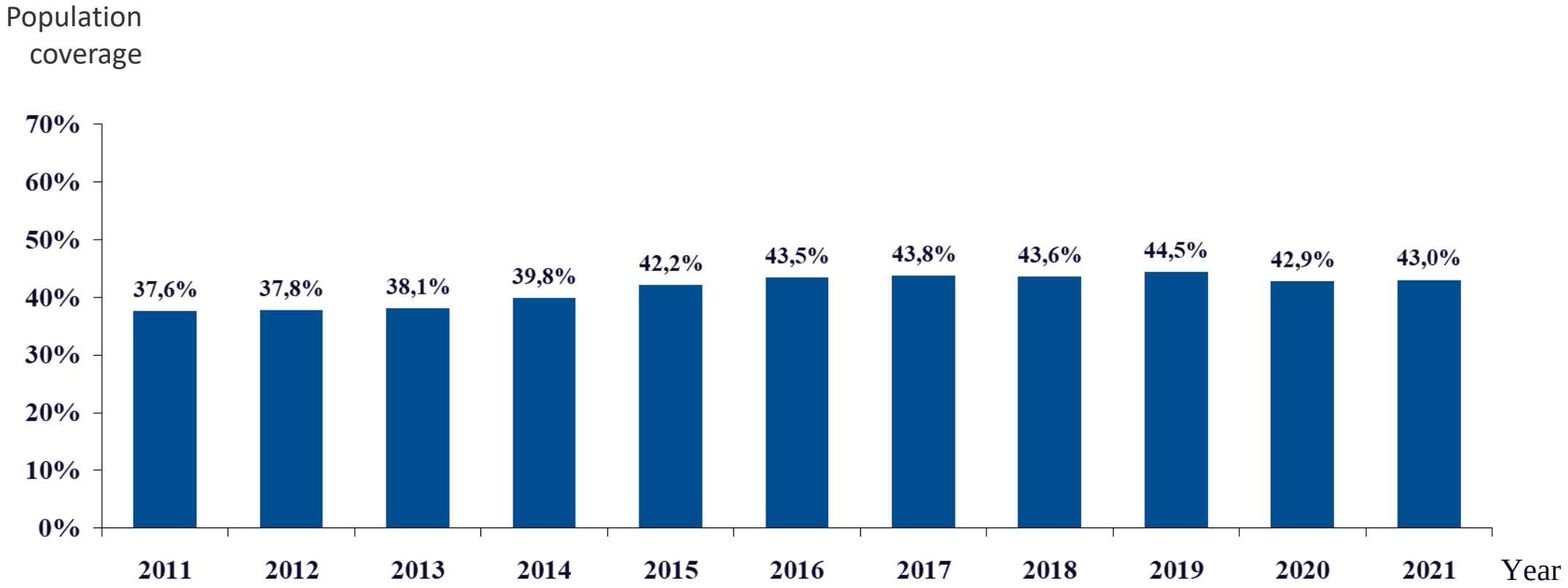
Two-year coverage by PSA examination in Czech men

PSA examination (93225)
(2020–2021, **men over 30**, N = 1,067,199)
Source: NRRHS, UZIS



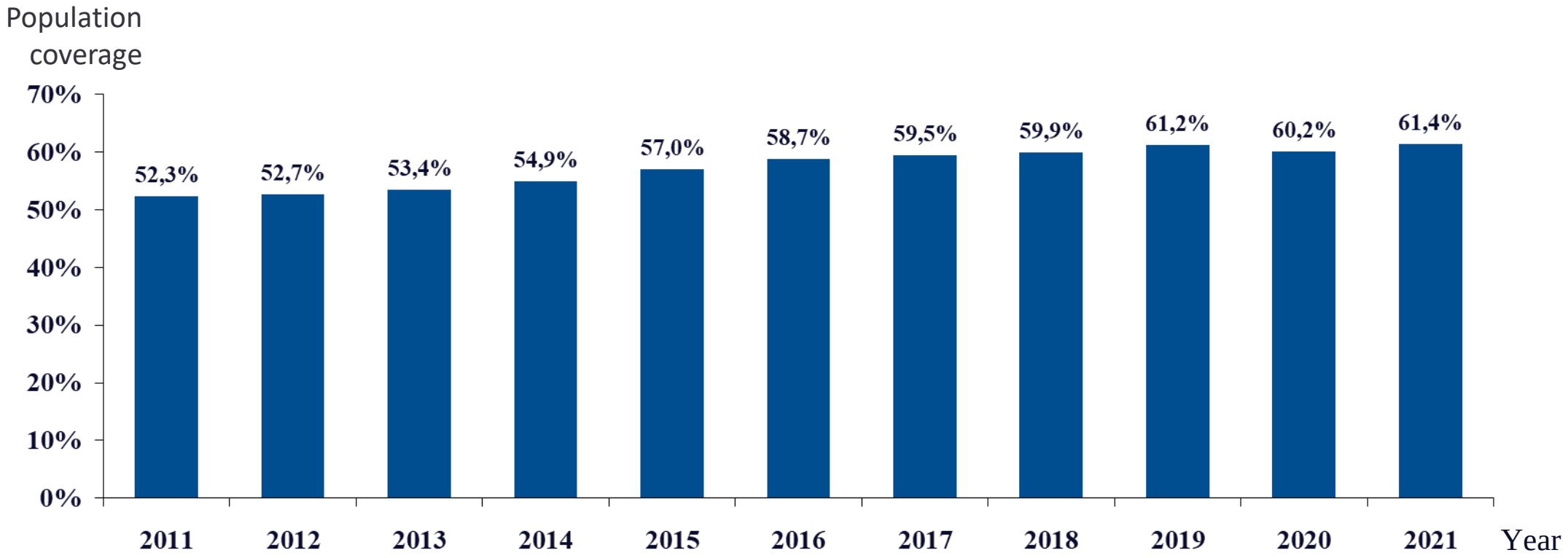
Two-year coverage of Czech men aged over 50 is 48.1% in 2021

Two-year coverage by PSA examination in Czech men aged 50–69 in 2011–2021



Two-year coverage of Czech men aged 50-69 is 43.0% in 2021

Two-year coverage by PSA examination in Czech men aged 70–84 in 2011–2021



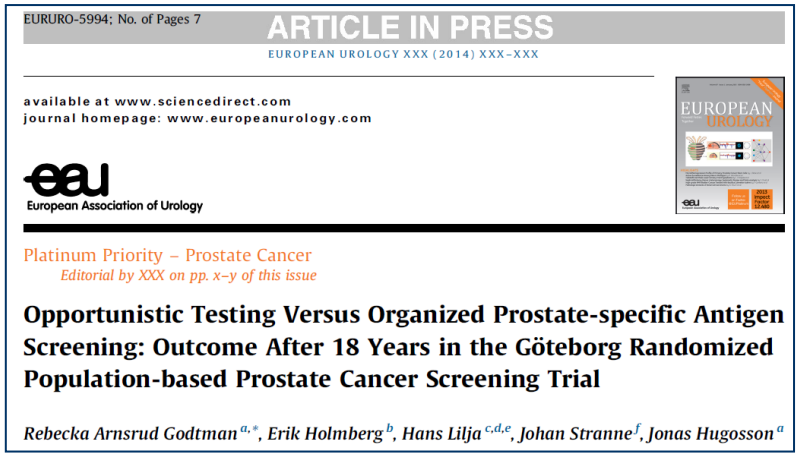
Two-year coverage of Czech men aged 70-84 is 61.4% in 2021

Mean number of PSA investigations in 2019–2021 according to age

Age	2020–2021	2019–2021
30–34	1,15	1,21
35–39	1,18	1,26
40–44	1,25	1,39
45–49	1,31	1,49
50–54	1,38	1,61
55–59	1,55	1,87
60–64	1,75	2,18
65–69	1,96	2,50
70–74	2,13	2,81
75–79	2,25	3,00
80–84	2,21	2,92
85+	2,06	2,64
All 30+	**1,79**	**2,23**
All 50+	**1,88**	**2,38**

Prostatic specific antigen (93225)
(2019–2021, **men until 30**)
Source: NRHZS

Opportunistic x organized screening?



EURURO-5994; No. of Pages 7

ARTICLE IN PRESS

EUROPEAN UROLOGY XXX (2014) XXX–XXX

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

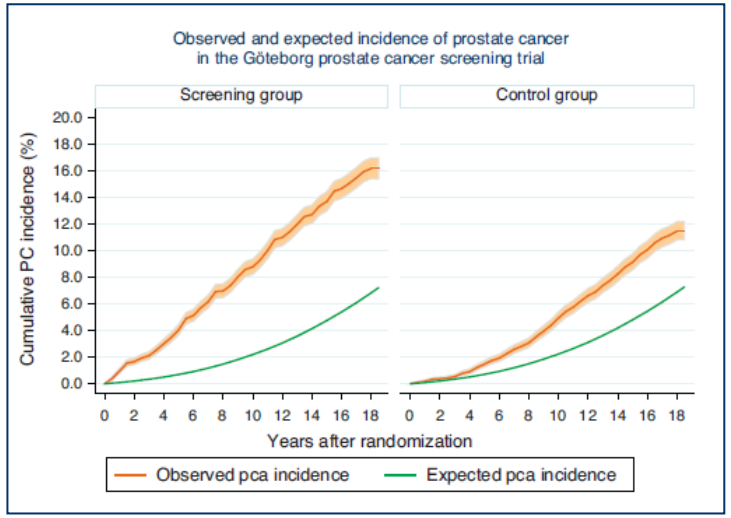
European Association of Urology

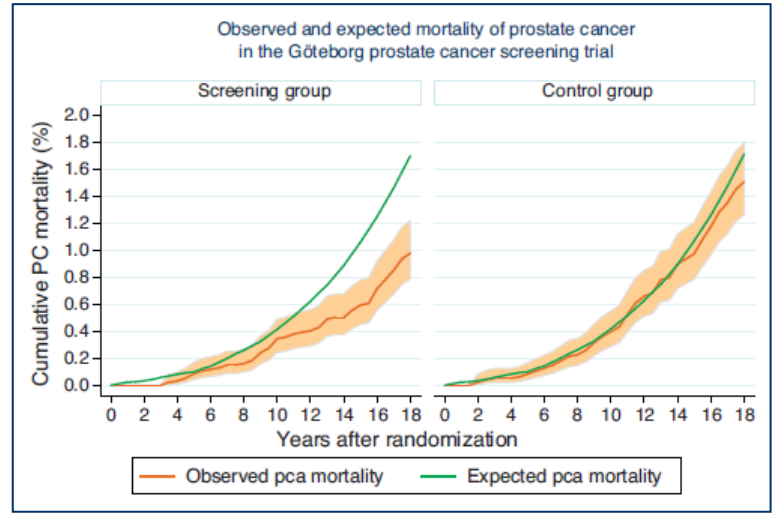
Platinum Priority – Prostate Cancer

Editorial by XXX on pp. x–y of this issue

Opportunistic Testing Versus Organized Prostate-specific Antigen Screening: Outcome After 18 Years in the Göteborg Randomized Population-based Prostate Cancer Screening Trial

Rebecka Arnsrud Godtman [a,], Erik Holmberg [b], Hans Lilja [c,d,e], Johan Stranne [f], Jonas Hugosson [a]*

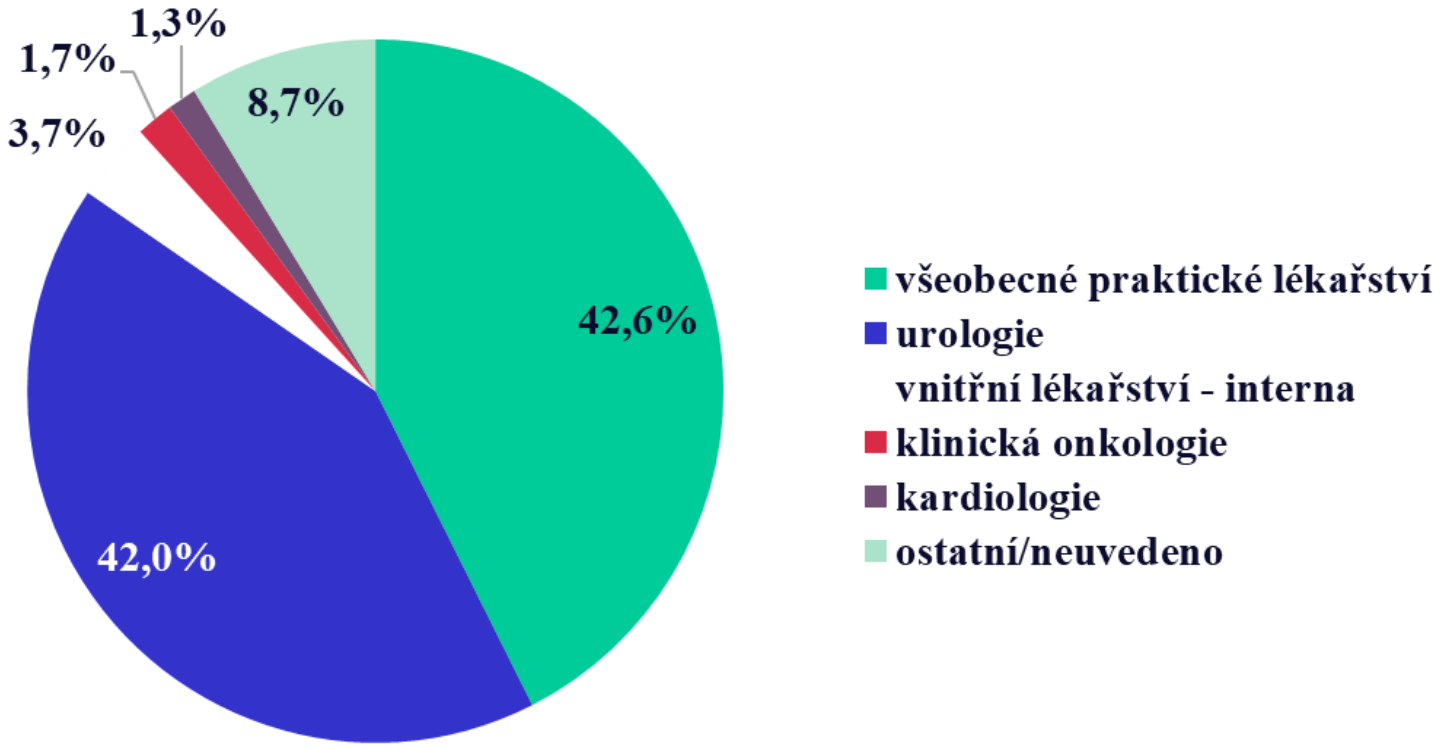




- 10.000 men from Göteborg screening study with biopsy in PSA ≥2,5 ng/ml enrolled since 1995 compared with 10.000 men, who were not invited and underwent opportunistic screening
- Followed until 2012
- Organized screening decreases mortality of PCa, but is connected with overdiagnosis, opportunistic screening has no input on mortality and increases overdiagnosis

Godtman RA, et al. Eur Urol 2015;68(3):354-360

PSA is tested both by urologists and GPs



Organized early detection of prostate cancer

- Screening increases detection of prostate cancer
- Screening improves survival
- Risk of overdiagnosis and overtreatment
- The key is the set up the strategy of organized early detection including indicators of individual diagnostic and treatment steps