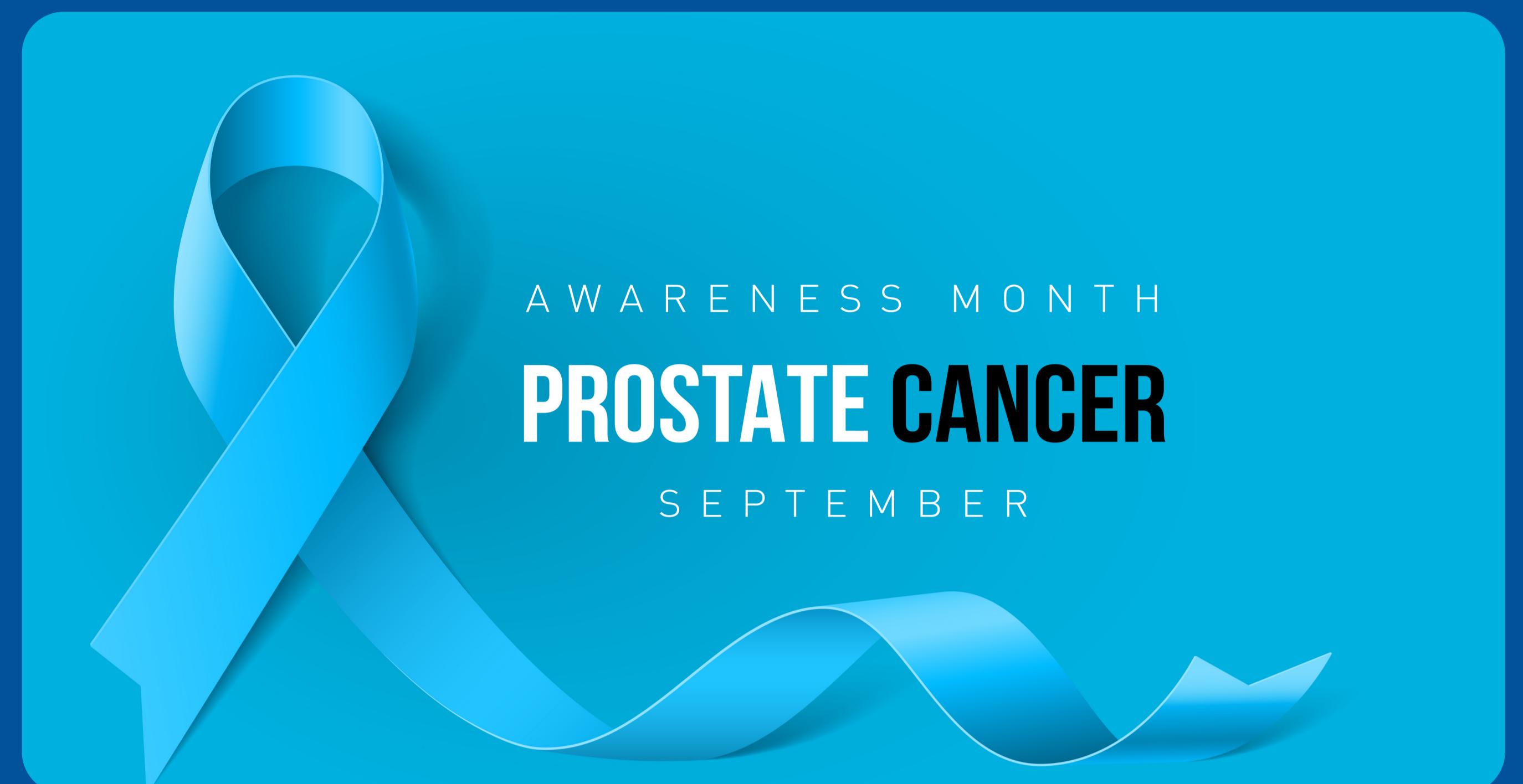
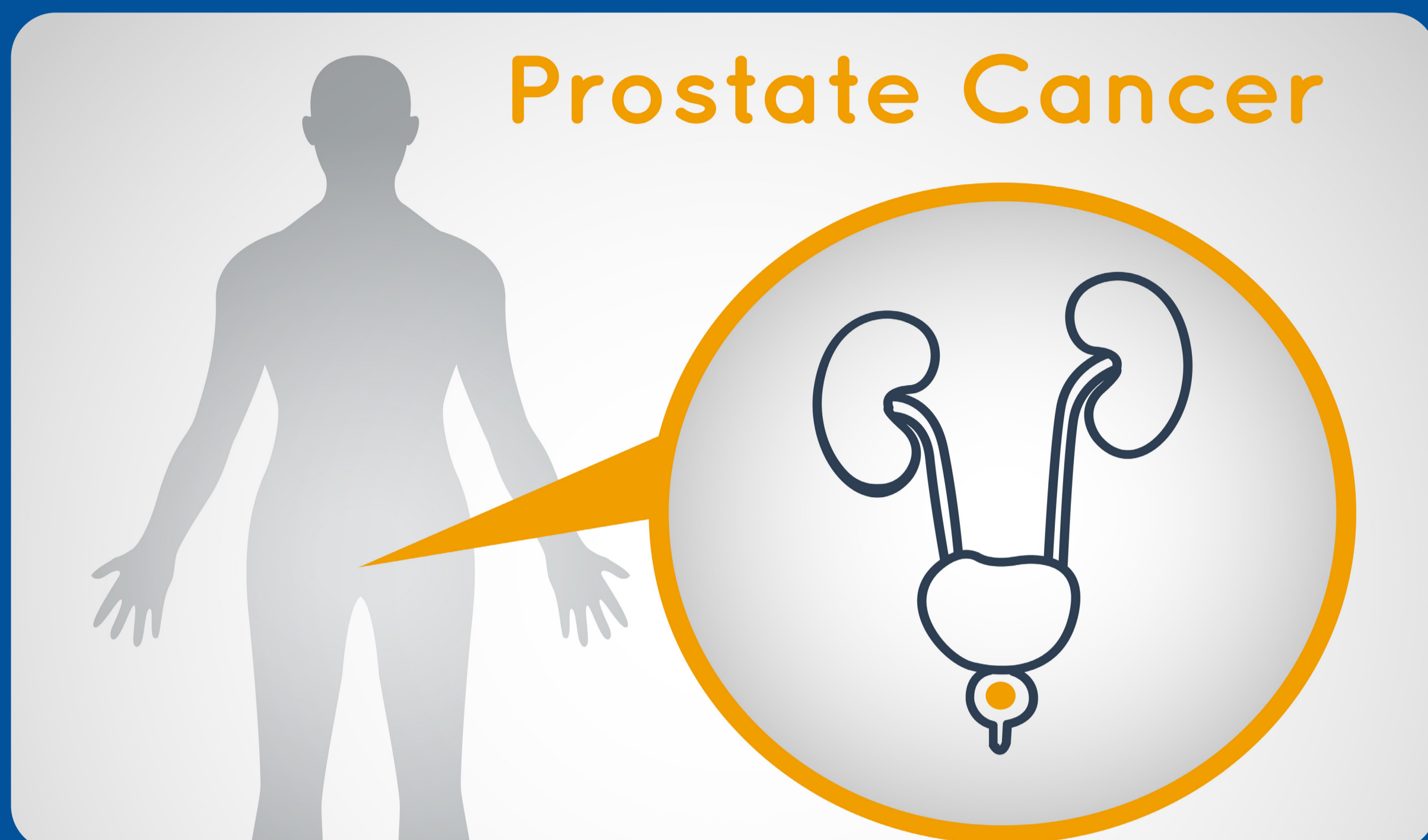


# Geographic and sociodemographic variation in treatment of elderly prostate cancer patients

Elin Gustavsen<sup>1,2</sup>, cand.scient, PhD student, T. Å. Myklebust<sup>3</sup>, E. S. Haug<sup>4</sup>, E. Haukland<sup>5</sup>, R. Heimdal<sup>6</sup>, B. Vonen<sup>1,2</sup>, E. Stensland<sup>1,2</sup>, B. Hauglann<sup>2</sup>



## Introduction

Prostate cancer is the second most commonly diagnosed cancer among men world wide. Choice of treatment is based on disease risk-level, health status and life expectancy. Complexity in the assessment of these factors may be a source to variation in clinical practice and disease management of elderly patients in particular.

## Objective

Investigate geographic and sociodemographic variation in curative treatment and choice of treatment modality among elderly patients with non-metastatic, high-risk prostate cancer in Norway.

## Data

- National population-based data on individual level
- Inclusion period: 2011-2016
- Age at diagnosis:  $\geq 70$  years old
- Patients: All Norwegian men diagnosed with non-metastatic, high-risk prostate cancer  
-> Study population: 6176 patients

## Methods

Data were obtained from the Cancer Registry of Norway, Norwegian Prostate Cancer Registry, Norwegian Patient Registry and Statistics Norway. The data were linked by the use of the Norwegian 11-digit identity number.

Multilevel logistic regression analysis was used to model variation in

- receipt of curative treatment
- choice of treatment modalities

## Results

Overall, 38% (25-48%) received curative treatment with either radical prostatectomy or radiotherapy. Among the treated patients, 27% (6-73%) had radical prostatectomy.

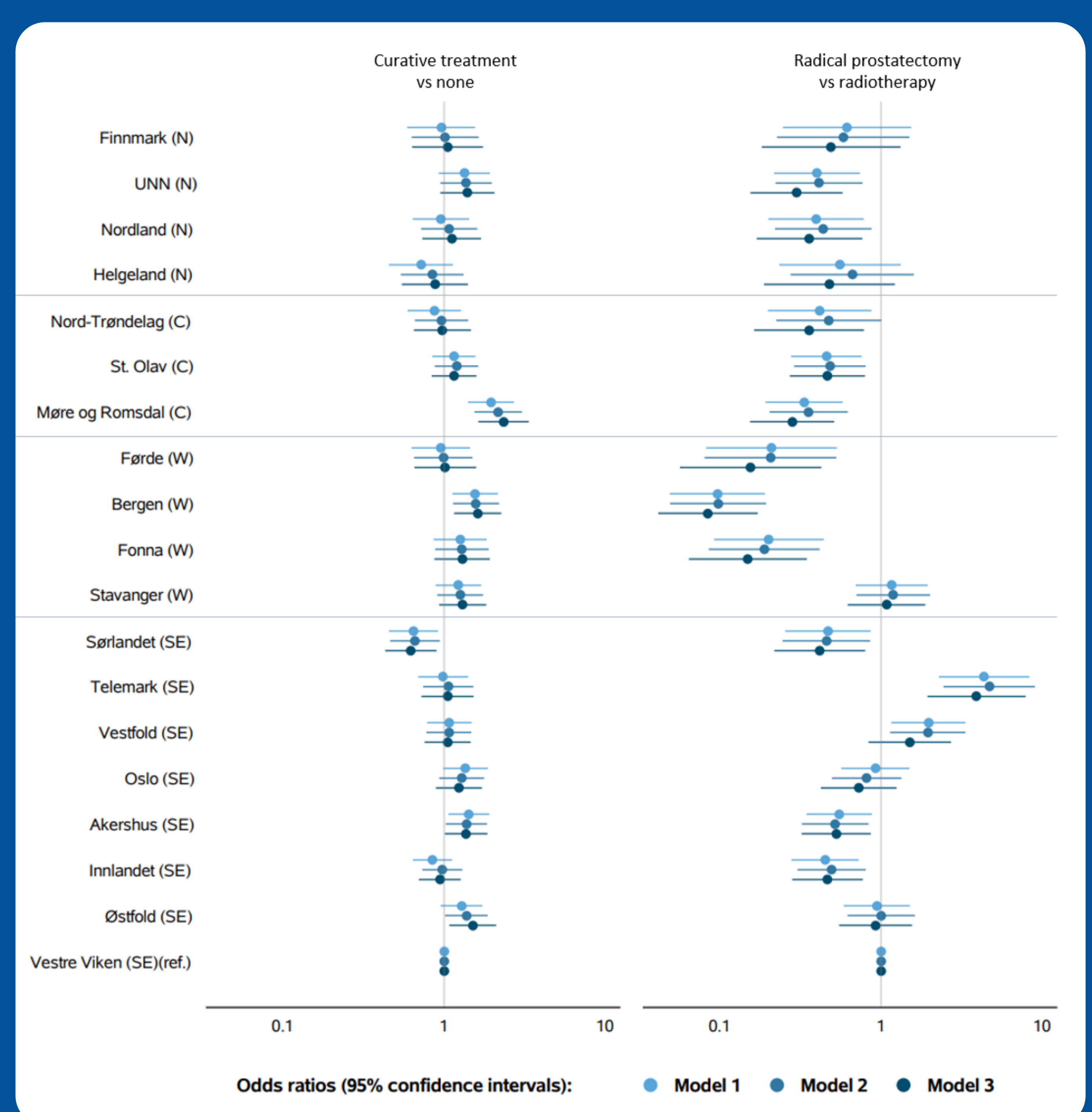
### Geographic variation:

- Minor geographic variation in receipt of curative treatment
- 20% of the variation in choice of modality occurred at hospital referral area level

### Sociodemographic variation:

- Increasing age and comorbidity were associated with decreasing odds of curative treatment
- Patients with higher income and with a cohabitant had independently higher odds of curative treatment compared to those with low income and living alone
- Patients with high income had higher odds of receiving radical prostatectomy over radiotherapy

## Geographic variation



19 hospital referral areas in 4 regions (North, Centre, West and South-East). Left column: OR of curative treatment over none.

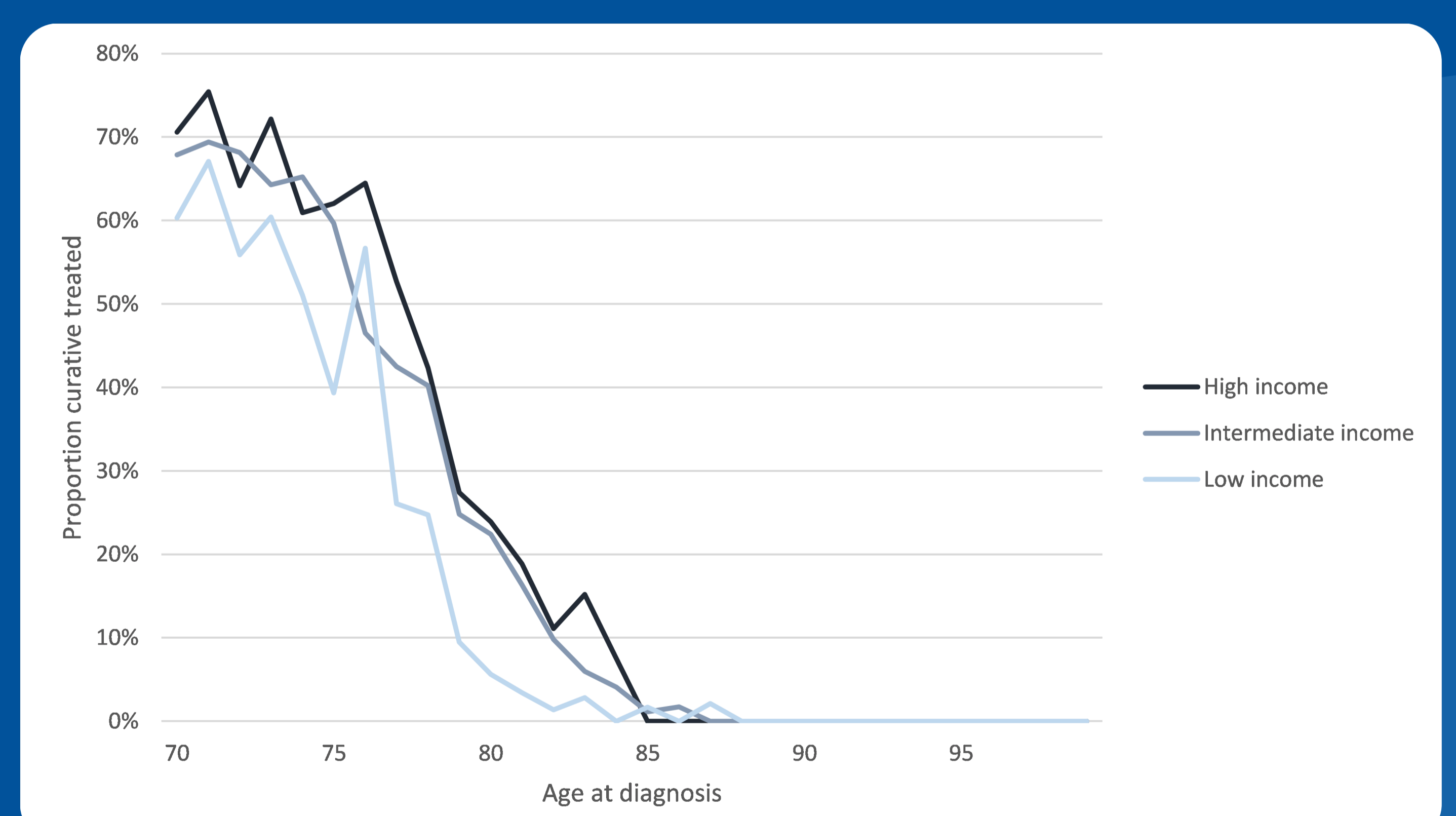
Right column: OR of radical prostatectomy over radiotherapy.

Model 1: Null model + age, stage, comorbidity

Model 2: + income, education, household type

Model 3: + travel time, radiation center, year of diagnosis

## Sociodemographic variation



Curative treated patients by age and level of income

## Conclusion

There was minor geographic variation in receipt of curative treatment. However, it was a substantial geographic variation in the choice of treatment modality, where 20% of the variation occurred at the hospital referral area level.

Clinical, socioeconomic and demographic factors were associated both with receipt of curative treatment and choice of treatment modality; Patients with high income and a cohabitant had respectively 84% and 50% higher odds of curative treatment compared to those with low income and living alone.

1. Department of Community Medicine, UiT The Arctic University of Norway, Tromsø, Norway
2. Centre for Clinical Documentation and Evaluation (SKDE), Tromsø, Norway
3. Cancer Registry of Norway, Oslo, Norway
4. Section of Urology, Vestfold Hospital Trust, Tønsberg, Norway
5. Department of Oncology and Palliative Medicine, Nordland Hospital, Bodø, Norway
6. Geriatric Department, Akershus University Hospital, Lørenskog, Norway