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Introduction

The Irish Prostate Cancer Outcomes Research (IPCOR) Study collected comprehensive longitudinal data on men diagnosed with prostate cancer in Ireland, which has a mixed public-private healthcare system.

This analysis aims to characterize disease presentation features and identify factors related to sociodemographic disparities.

Methods

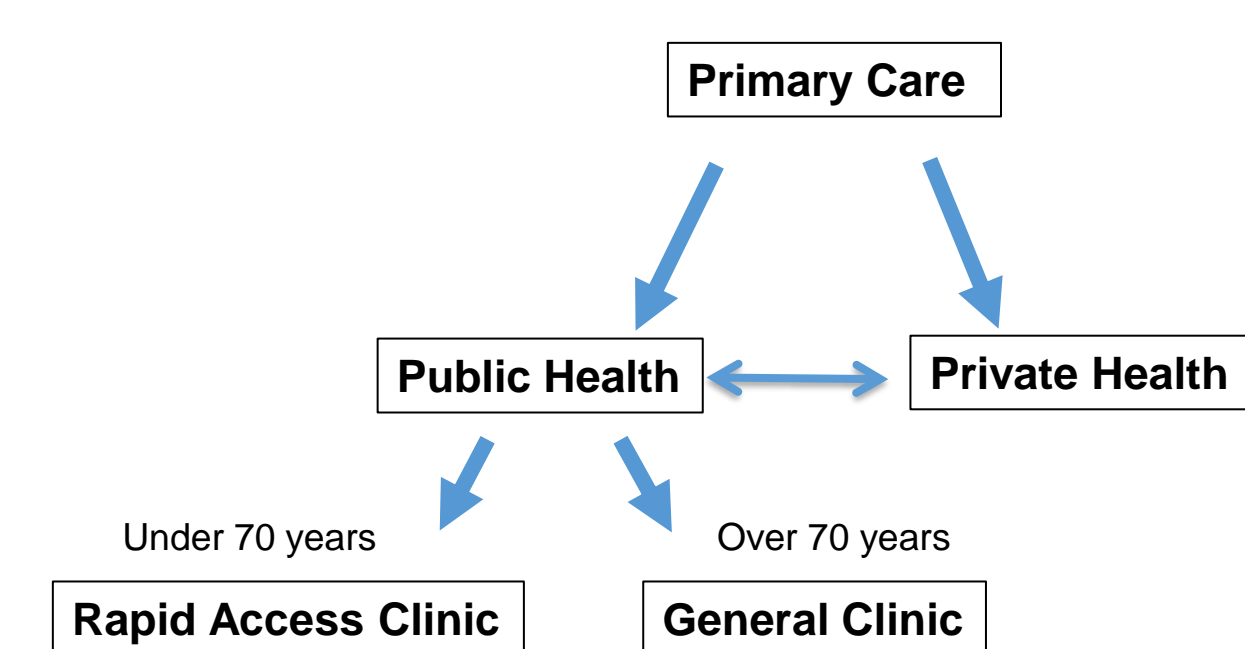
From February 2016 until January 2020, IPCOR collected data on demographics, diagnosis and treatment from 6816 men in 16 hospitals across Ireland. Covering about 85% of the patient population.

A subset of 873 men participated in a Patient Reported Outcomes (PROMs) sub-study, providing information regarding healthcare financing (i.e., having private medical insurance or public medical card).

A complete case analysis was performed. Between-group comparisons were performed using chi-squared analysis for categorical variables and ANOVA for continuous variables. Multivariable logistic regression was performed to predict dichotomous dependent variables.



Referral Pathways for Prostate Cancer in Ireland

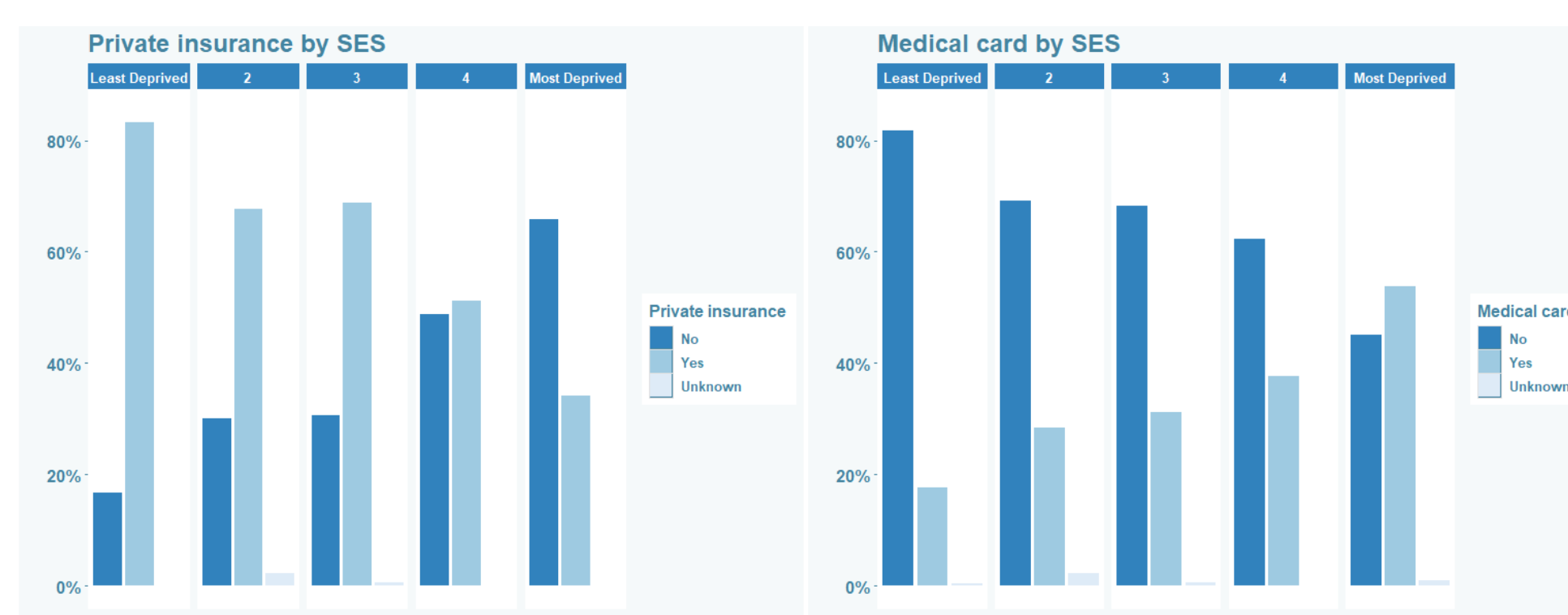


Results

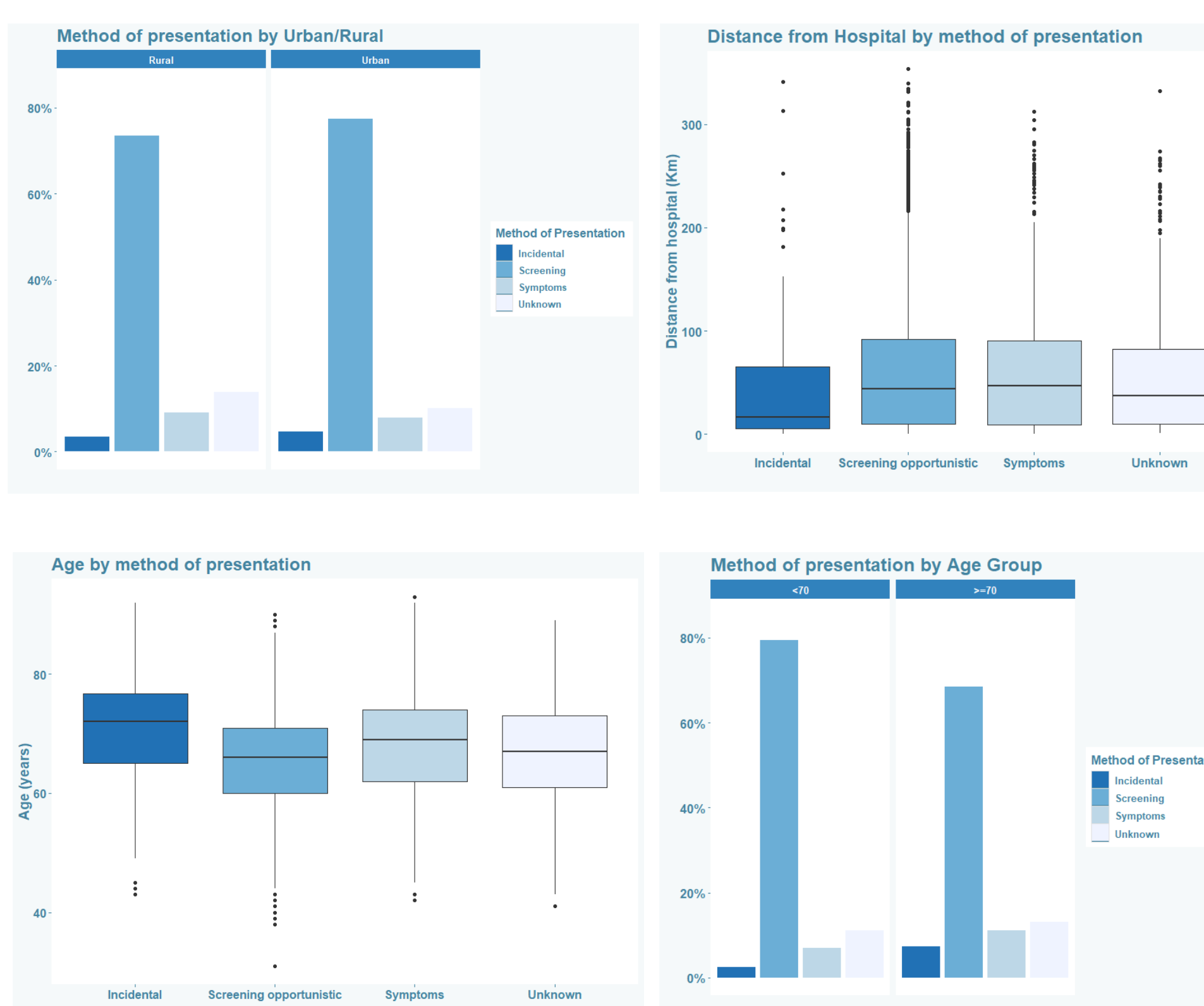
A) The median age at diagnosis was 66.7. Almost two-thirds of men (62.2%) were diagnosed in a public hospital. Three-quarters of men (69.1%) were diagnosed following opportunistic PSA screening, while a small proportion (7.6%) presented with symptoms.

	Overall (N=6816)
Age at Diagnosis	
Mean (SD)	66.7 (8.23)
Median [Min, Max]	67.0 [31.0, 94.0]
Missing	98 (1.4%)
PSA at Diagnosis	
Mean (SD)	30.2 (219)
Median [Min, Max]	7.68 [0.100, 9150]
Missing	405 (5.9%)
Method of Presentation	
Screening opportunistic	4712 (69.1%)
Symptoms	520 (7.6%)
Incidental	256 (3.8%)
Unknown	736 (10.8%)
Missing	592 (8.7%)
Distance Travelled to Diagnosing Hospital	
Mean (SD)	58.0 (61.7)
Median [Min, Max]	39.1 [0.173, 353]
Missing	50 (0.7%)
Deprivation Index	
1 - Least Deprived	1377 (20.2%)
2	1176 (17.3%)
3	1267 (18.6%)
4	1355 (19.9%)
5 - Most Deprived	1290 (18.9%)
Missing	54 (0.8%)
Mult_Different	297 (4.4%)

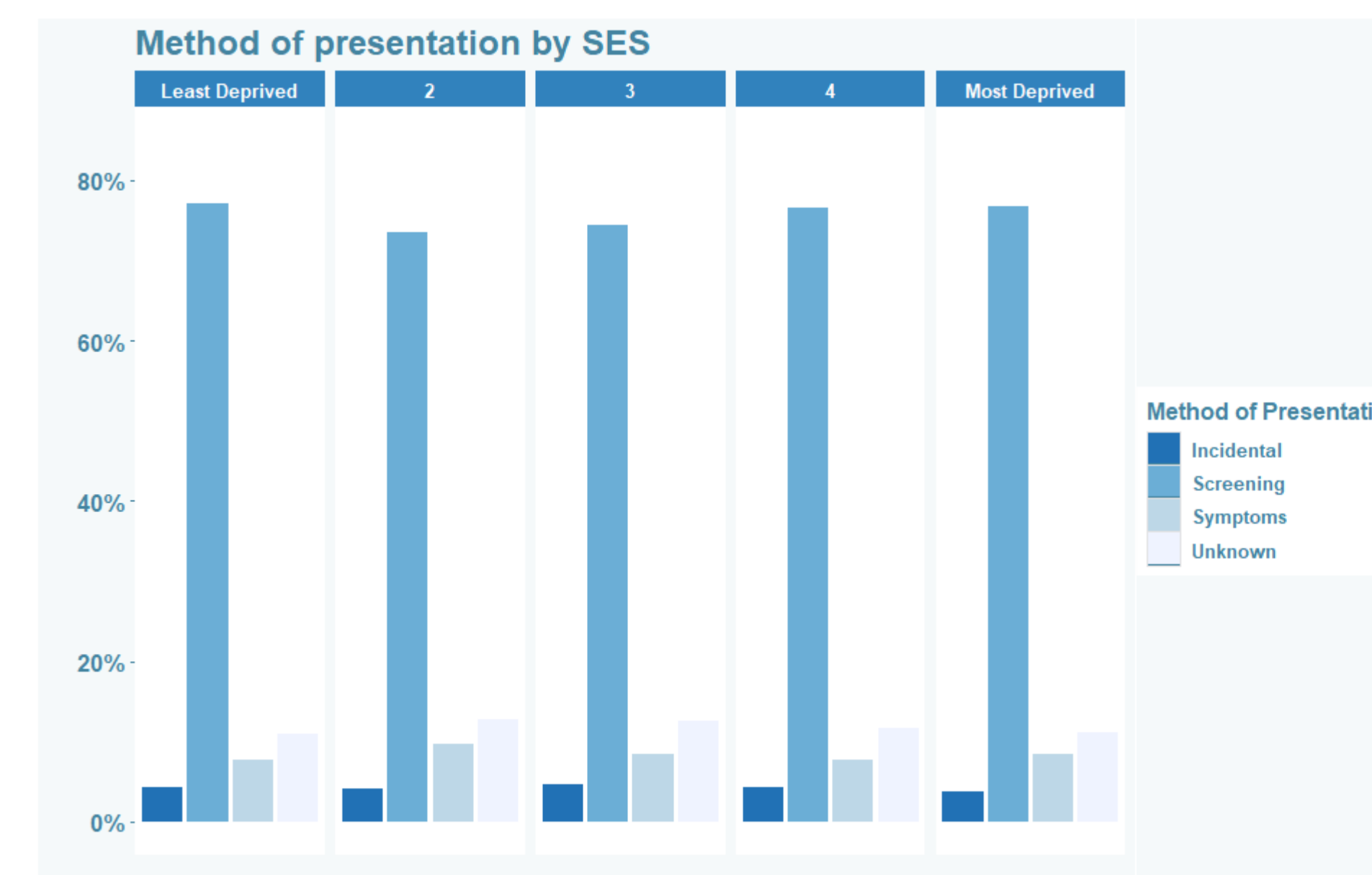
B) Examining the self reported responses, **socioeconomic status (SES) was negatively linked to private insurance and positively linked medical cards** (both $p < 0.001$).



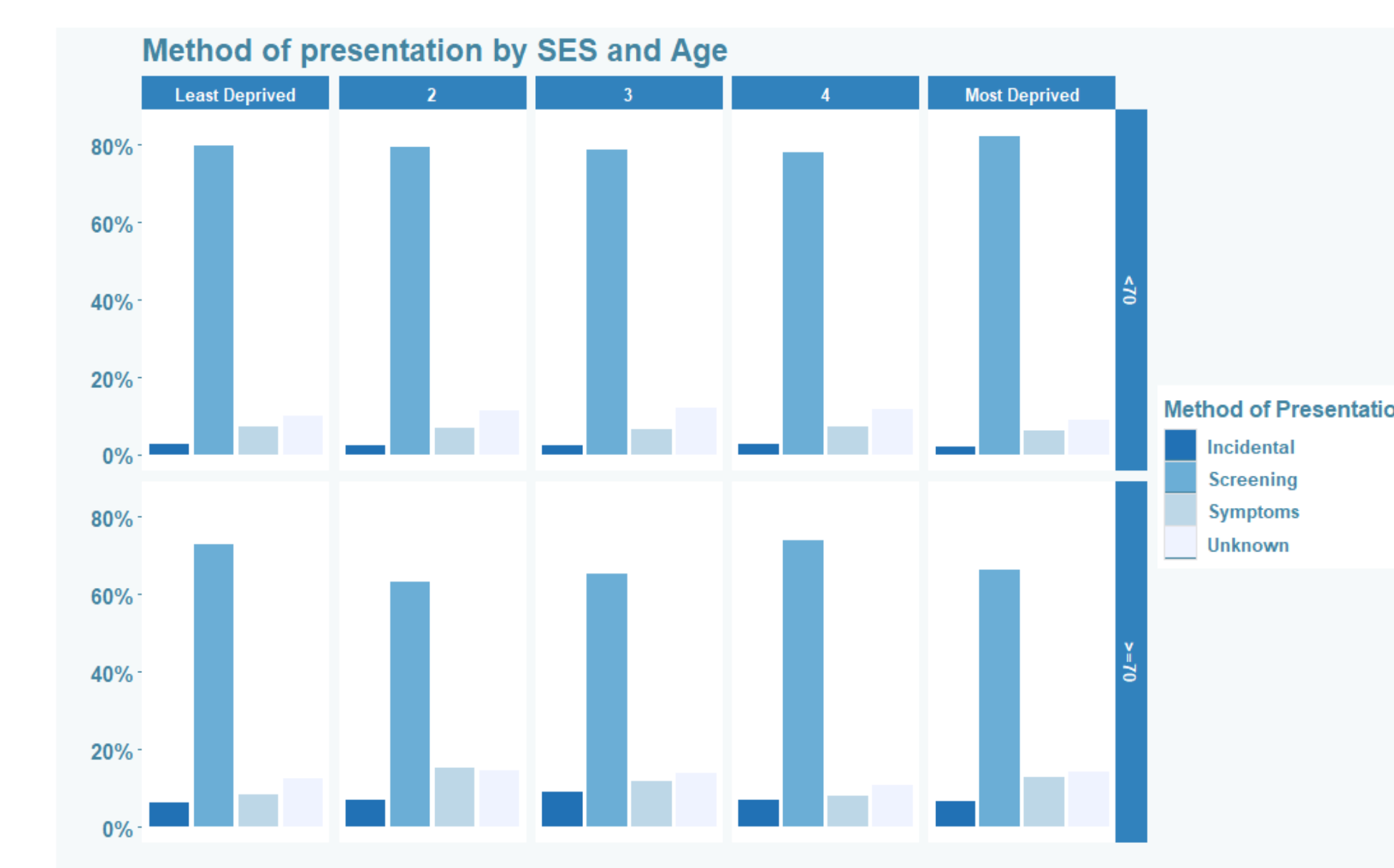
C) Distance to hospital, rural or urban setting and age (<70 , ≥ 70) were associated with method of presentation (all $p < 0.001$).



D) We also found an association between the socioeconomic status (SES) quintile and diagnosis post-screening. **Men in the 2nd and 3rd quintiles were less often diagnosed due to opportunistic screening** (73.6% and 74.5%, respectively) than men in the 1, 4 and 5 quintiles (77.1%, 76.6% and 76.8%, respectively) ($p = 0.027$), creating a U-shaped relationship.



E) Stratification by SES and age (<70 , ≥ 70) shows that **the difference in method of presentation between SES quintiles is derived from the older (≥ 70) age group**.



F) In a multivariable logistic regression analysis, we found that higher age is predictive of presenting with symptoms ($p < 0.001$), whereas lower age, urban setting and longer distance from hospital are predictive for presentation after opportunistic screening (all $p < 0.001$).

Discussion

A variation was found in the method of disease presentation by socioeconomic status. Ireland's two-tiered public-private healthcare system may explain this anomaly.

While men in the 2 and 3 SES quintiles may not afford private insurance, they also may not be eligible for social medical coverage.

These men may avoid opportunistic screening since general practitioner visits are costly.

Conclusion

Resources should be allocated to enable universal access to prostate cancer screening. This may eliminate disparities in disease presentation and affect outcomes.

