# Bias in prescription data of the Irish ovarian cancer population

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# Disclosures



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The following personal or financial relationships relevant to this presentation existed during the past 12 months/during the conduct of the study

No relationships to disclose

# Why interested in bias?



- Pharmacoepidemiology requires data on prescriptions + outcomes
- Ireland only has prescription data from a select subset of the population
- This has the potential to interfere with external validity of our research

# General Medical Services (GMS) cards



- Card holders receive free public services
  - ➢GP/hospital visits
  - ➢ prescriptions
- Eligibility based on
  - > means-test
  - ➤ age
- Cards may be awarded on discretionary grounds (e.g. following cancer diagnosis).





#### Irish population (and GMS cards) in 2011 31% Female Cards Cards Male 0 to 9 10 to 19 20 to 29 30 to 39 40 to 49 28% 50 to 59 60 to 69 70+ 400,000 200,000 0 200,000 400,000 96%

# National Cancer Registry



#### **OVARIAN CANCER (C56) 2003-2011**

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Cork SIR Obs:46 (Exp: 40)

# **GMS** data linkage



All women diagnosed with invasive ovarian cancer (ICD10-C56) between 2001-2010 were linked to GMS card records



# **Methods**



- Characteristics of patients with/without cards were compared.
- Logistic regression was used to evaluate associations between card status and:
  - ➤ age at diagnosis
  - Smoking status at diagnosis
  - employment status
  - marital status
  - > deprivation category of area of residence
  - health board of residence
- Kaplan-Meier to estimate survival

# **Ovarian cancer GMS cards**

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## **Results**



• Most women with cards (92%) had them for at least >12months prior to diagnosis.



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# Prognostic factors (age <70) S National Cancer Registry Ireland

### Covariate and card status at the time of diagnosis

Variable		Ν	% with card	AOR 95%CI	p-value
Age	<60	812	72.4		<.0001
	≥60	579	83.2	1.81 (1.44, 2.27)	
Local area deprivation	Not	466	67.9		<.0001
	Deprived	925	81.8	1.91 (1.51, 2.43)	
Employment	Not	1018	78.8		<.0001
	Current	373	71.0	0.29 (0.22, 0.39)	
Married	No	295	76.6		<.0001
	Current	867	74.3	0.51 (0.38, 0.67)	
	Previously	229	86.4	2.01 (1.41, 2.87)	
Smoking status	Not	968	74.9		0.050
	Current	423	80.6	1.27 (1.00, 1.61)	

\*Model also adjusted for heath board

# **Overall Survival**



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# **Post-diagnosis cards**



### Of the women without cards at diagnosis

### - 54% go on to receive one



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# Generalisability



"Generalisation is concerned with the application of research results to cases or situations beyond those examined in the study." Collis & Hussey 2003



# Discussion



Card coverage in Irish ovarian cancer cohort is similar to the general population.

Cancer cohorts with and without cards exhibit differences in population characteristics.

External validity needs to be considered when interpreting Irish pharamcoepidemiological analyses.

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@CStatsAU



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