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Association between patient and GP characteristics and unplanned first-time admissions for cancer

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Outline of talk

- Starting point for the work
- Aim of study
- Data sources and methods
- Key findings and size of effects
- What they mean

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Starting point – why did we do this study?

- Early dx key to improving ca survival
- Background: unplanned adms shown to be associated with more advanced disease and poorer outcomes (NCIN: 25% of all first ca adms)
- Important to understand how patient and practice characteristics relate to unplanned route

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Aim of study

- To explore associations between patient and practice characteristics and unplanned admission using routinely available data in England

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Data sources overview

- Hospital admissions
- Area deprivation (IMD), rural/urban
- NHSIC for practice, GP chars
- Quality and Outcomes Framework (QOF) for practice performance scores inc pt survey on appt access

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Data used: Hospital Episode Statistics

- Routine hospital admissions data (HES) for 2007/8 to 2009/10
- Covers all NHS hospitals in England
- We found each pt's first cancer admission (no cancer adm in prior 3yr): was it emergency or not?

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Data used: QOF scores for each practice

- Each GP practice receives payments depending on its performance in >100 indicators in four domains
- Two cancer indicators: whether practices keep a register of patients diagnosed with any cancer (CANCER01) and the percentage of patients with cancer diagnosed within the last 18 months and who had a review within 6 months of confirmed diagnosis (CANCER03)
- Two appt access indicators: providing appointments within 48 hours (PE07) and providing advance booking more than two days ahead (PE08)

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Methods

Patient-level analysis used GEE

Modelled relation between odds of emergency adm and:

- Patient factors (age, sex, ethnic group, cancer type, area deprivation, urban/rural)
- Practice factors (urban/rural, # GPs, list size, % non-UK trained, % female, % aged 50+)
- Practice QOF scores inc pt exp scores

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Results: emergency admission more likely if…

- You are older, female (OR=1.07), non-white, have certain cancers (esp pancreas), live in most deprived fifth (OR=1.46) or urban (>10K) area (OR=1.04)
- Your practice is smaller; small effect if all GPs trained overseas (OR=1.07: probably another deprivation effect)
- NO EFFECT FOUND for having only one GP (after adj), all older or all female GPs

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Results: emergency admission more likely if…

- Your practice gets lower overall QOF scores (OR=1.06 per 100 points fewer)
- You're less able to get 48hr appt (OR=1.18 for zero points v all points)
- No relation seen with either QOF cancer indicator or with scores for advanced appts

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Interpretation: which factors are most influential?

- Two concepts: ‘baseline’ risk and number of people affected

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Effect of increasing the risk: how big was it before?

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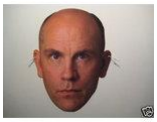
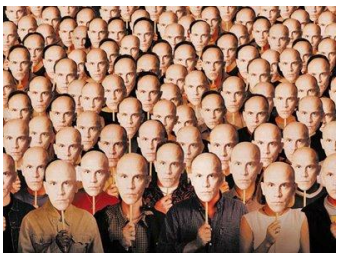
Effect of increased risk: how many people are affected?





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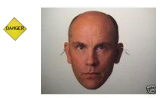
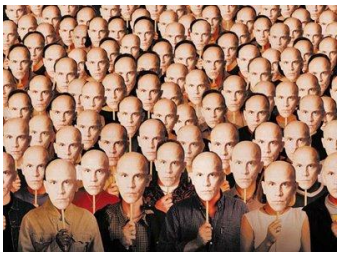
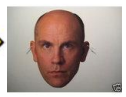
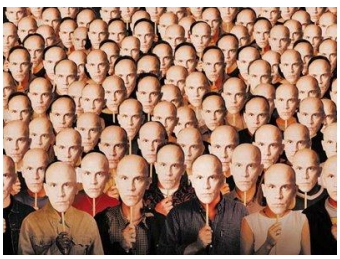
Both concepts of increased risk combined









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Estimation of 'extra' emergency adms

Effect of i) deprivation and ii) 48hr access scores estimated by indirect standardisation:

- Apply emerg rates for depr quintiles 1-4 to the popn in quintile 5 (adj for other factors) to get 'expected' E: compare O with E
- Apply emerg rates for practices scoring well on access to those scoring poorly (adj for other factors) to get 'expected' E: compare O with E

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Estimates of 'extra' emergency adms

- Deprivation (quintile 5 v rest) = 3,900 in 3 years (1,300 per year)
- 48hr appts (quintile 1 v quintile 4) = 1,500 in 3 years (500 per year)
- Interpretation: nationally, deprivation has bigger effect than appt access

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Summary

- Striking differences by age, cancer type and deprivation
- Also associations with practice chars e.g. list size and 48hr appt access. Some of access's effect could be due to need-led demand and/or residual socio-economic effects

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Future work

- Could combine with stage and treatment info and long-term outcomes: National Cancer Data Repository is essential resource
- Could do qualitative study comparing types of practice with differing performance (emerg rates)

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Further information on this study

- Alex Bottle, Carmen Tsang, Camille Parsons, Azeem Majeed, Michael Soljak, Paul Aylin. Association between patient and general practice characteristics and unplanned first-time admissions for cancer: observational study. *(under review)*
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