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Why do we need action on 'missingness' in healthcare?

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**WORLD
CHANGERS
WELCOME**





Outline

- Introductions
- Key findings from missed appts research
 - Definitions
 - GP missed appts
 - Morbidity and mortality
 - Acute care
 - Life course social context
- Next steps for research and practice



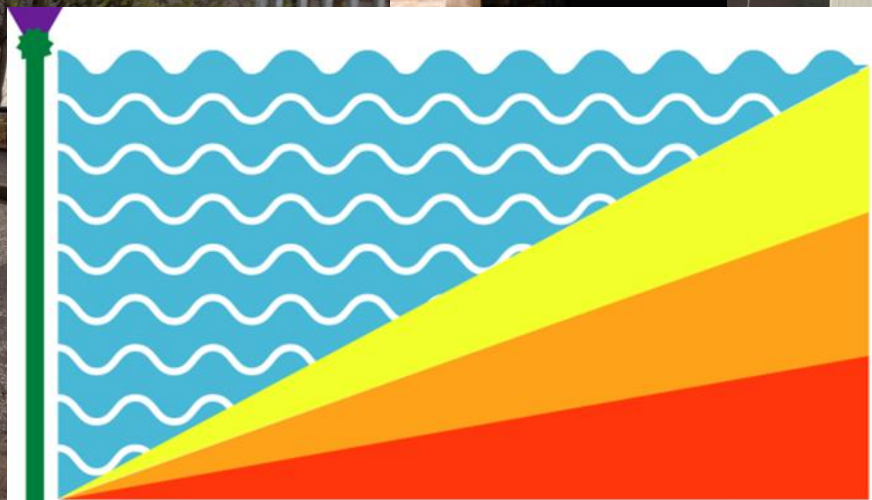
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Hunter Street Homeless Services



No Smoking In the Grounds or Buildings of 55 Hunter Street



GPs at the Deep End





Definition of Inclusion Health populations

“people who are socially excluded, typically experience multiple overlapping risk factors for poor health (such as poverty, violence and complex trauma), experience stigma and discrimination, and are not consistently accounted for in electronic records (such as healthcare databases). These experiences frequently lead to barriers in access to healthcare and extremely poor health outcomes.”

(Public Health England 2021)



Conceptual framework

- Missed appointments as a health harming behaviour
- a proxy for poor health and social vulnerability
- **Missingness as the repeated tendency not to take up offers of care** such that it has a negative impact on the person and their life chances



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Research Acknowledgements

Co-investigators: David A Ellis, Alex McConnachie & Phil Wilson

Researcher: Ross McQueenie

Collaborator: Mike Fleming

Trusted Third Party: Dave Kelly Albasoft

Participating GP practices

Colleagues at Scot Gov and eDRIS



SMA study definition

Average of general practice face to face appointments over previous **three years**

- **Never missed appointments per year, 0**
- **Low missed appointments per year, <1**
- **Medium missed appointments per year, 1-2**
- **High missed appointments per year, 2 or more**

(Williamson et al BMJ Open 2017)



Missed appointments results

136 Scottish representative GP practices

550 083 patient records

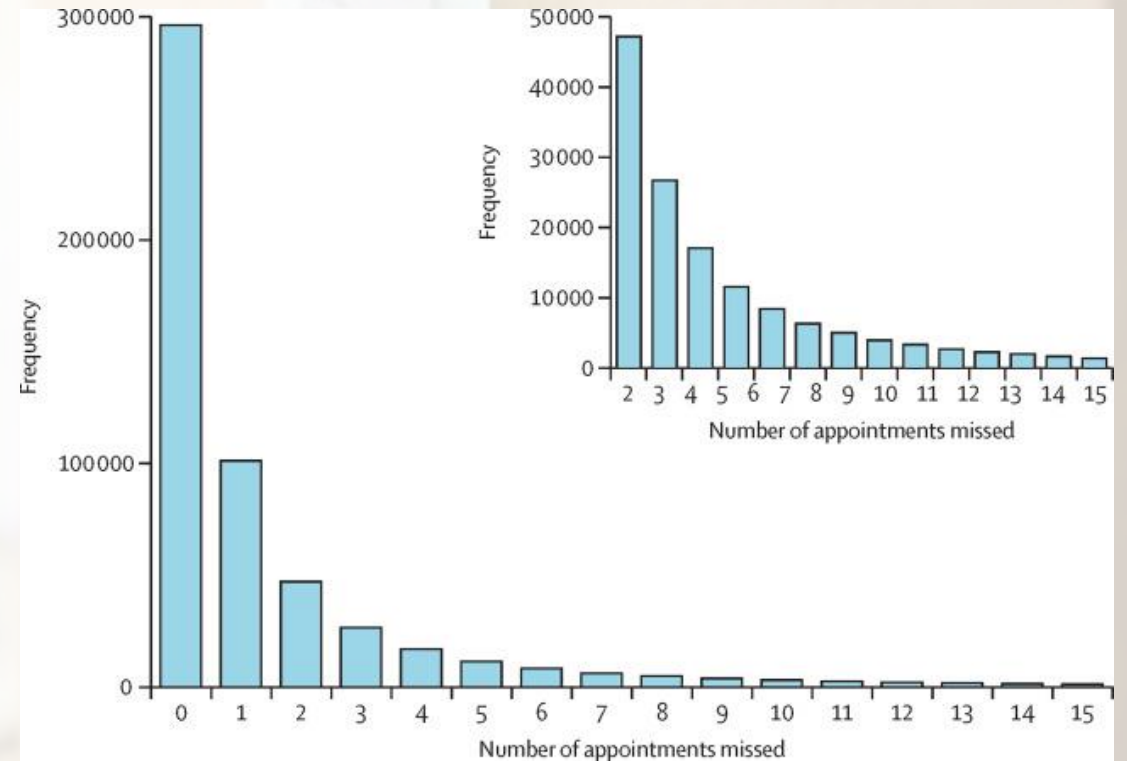
9 177 054 consultations

54.0% (297,002) missed no appointments

46.0% (212,155) missed one or more appointments

19.0% (104,461) missed more than two appointments

(Ellis, McQueenie et al Lancet Public Health 2017)



Patient demographic factors

- Most socio-economically deprived (**SIMD 1**) patients most likely to miss appointments (RRR 2.27, 95% CI 2.22–2.31)
- Most remotely located patients least likely to miss appointments (RR 0.37, 0.36–0.38)
- Patients aged **16–30 years** (1.21, 1.19–1.23) & **older than 90 years** (2.20, 2.09–2.29) more likely to miss appointments
- Effect of gender small
- Ethnicity poorly recorded (2.69% all records)

(Ellis, McQueenie et al Lancet Public Health 2017)

GP practice demographic factors

- **Appointment delay 2–3 days** (RRR 2.54, 95% CI 2.46–2.62) most strongly associated with non-attendance
- **Urban GP practices** more strongly associated with missed appointments
- **More deprived patients registered with GP practices in more affluent settings have the highest risk of missing appointments**

(Ellis, McQueenie et al Lancet Public Health 2017)

Patient and practice demographics

- **Practice factors have a larger effect** than patient factors but a model combining both patient and practice factors gave a higher Cox-Snell pseudo R^2 value (0.66) than models using either group of factors separately (patients only $R^2=0.54$; practice only $R^2=0.63$) (Ellis, McQueenie et al Lancet Public Health 2017)
- Recent QI project in East London:
- largest reduction in practice missed appointments from reducing practice appointment delay NOT patient nudges eg text reminders (Margham et al BJGP 2021)

Morbidity and mortality

- Patients with **more long-term conditions** have increased risk of missing GP appointments (controlling for number of apts made)
- Patients missing appointments were at much greater risk of **all-cause mortality, the risk increasing with number of missed appointments** (independent of morbidities)

(McQueenie et al BMC Medicine, 2019)

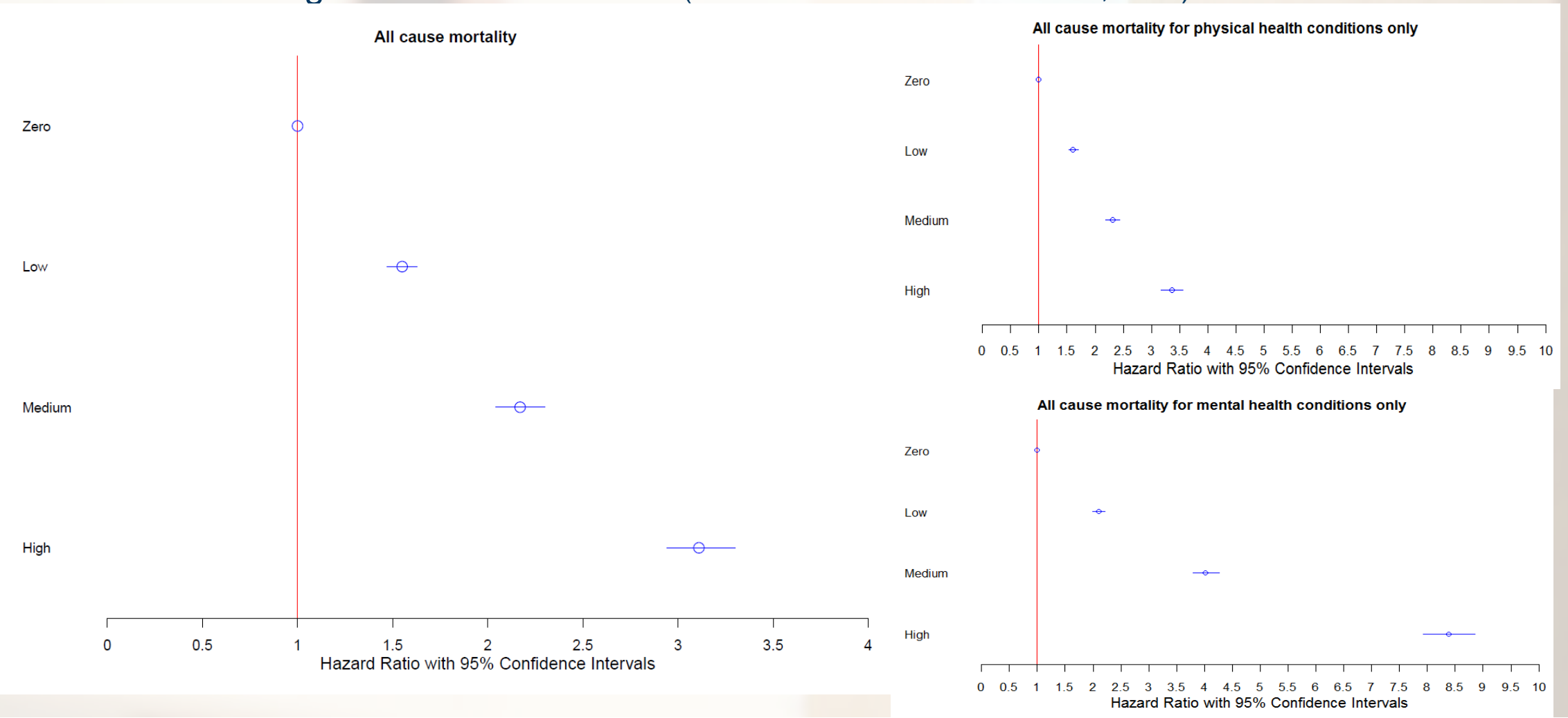
Shocking mortality

- Patients with **long-term mental-health conditions missing >2 appointments per year had >8x** risk of all-cause mortality compared with those who missed no appointments
- These patients died at a **younger age**, and commonly from **non-natural external factors**
- **Missing appointments repeatedly seems to be a powerful marker for greatly increased risk of mortality, particularly among those without physical long-term conditions** (after adjustment for all other mortality risks)

(McQueenie et al BMC Medicine, 2019)

Risk of death

Cox regression: adjusted for age, sex, demographics, practice factors and number of long-term conditions (McQueenie et al BMC Medicine, 2019)



Hospital utilization

- Patients missing **high numbers** of GP appointments were **higher users of hospital outpatient** (RR 1.90, 95% CI 1.88-1.93)* especially mental health services (4.56, 4.31-4.83)
- and **inpatient care** (general 1.67, 1.65-1.68, maternity 1.24, mental health 1.23, 1.15-1.31), compared to patients missing no GP appointments
- **Emergency department use was the same across all groups** (1.00, 0.99-1.01)

*negative binomial regression modelling controlling for age, sex, SIMD and number of long-term conditions.

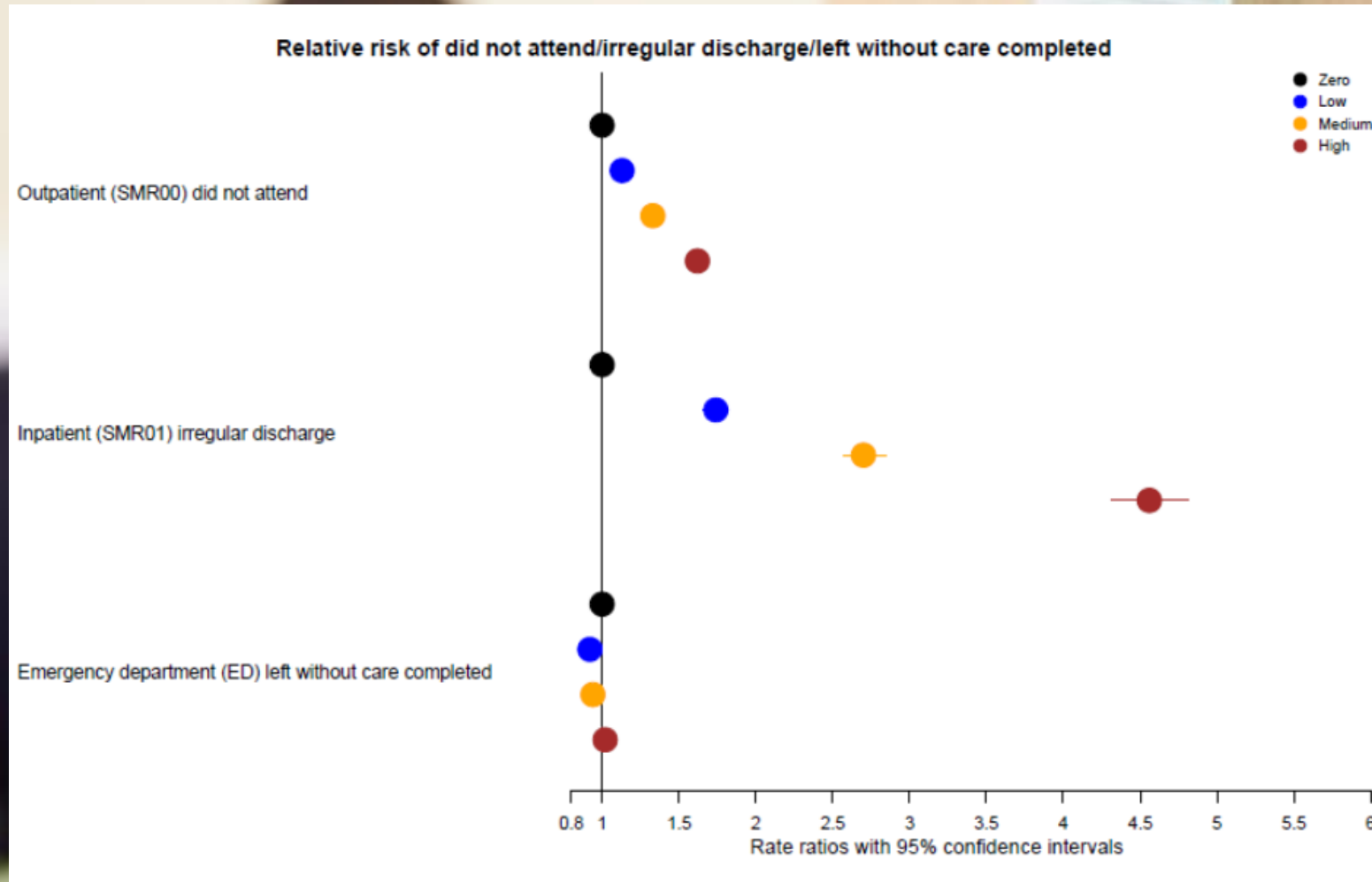
(Williamson et al Plos One 2021)

Hospital missingness

- Patients who had patterns of high missed GP appointments were **more likely** (RR 1.62, 95% CI 1.60-1.64)* to **miss hospital outpatient appointments**
- A **much higher risk** of non-attendance for **mental health services** (7.83, 7.35-8.35).
- Patients with high missed GP appointments were **more likely** (4.56, 4.31-4.81) to experience an **‘irregular discharge’ from inpatient care**
- No difference for ED ‘left before care complete’ between GP missed appointment category (1.02, 0.95-1.09)

*negative binomial regression modelling controlling for age, sex, SIMD and number of long-term conditions.

(Williamson et al Plos One 2021)



(Williamson et al Plos One 2021)

Life course social context

Patients at higher risk of missingness are more likely to have

- an ACE recorded in their GP record (Williamson et al BJGP Open 2020)
- From education linked data:
 - reduced school attendance
 - higher levels of school exclusion
 - lower educational attainment (McQueenie et al BMC Medicine 2021)

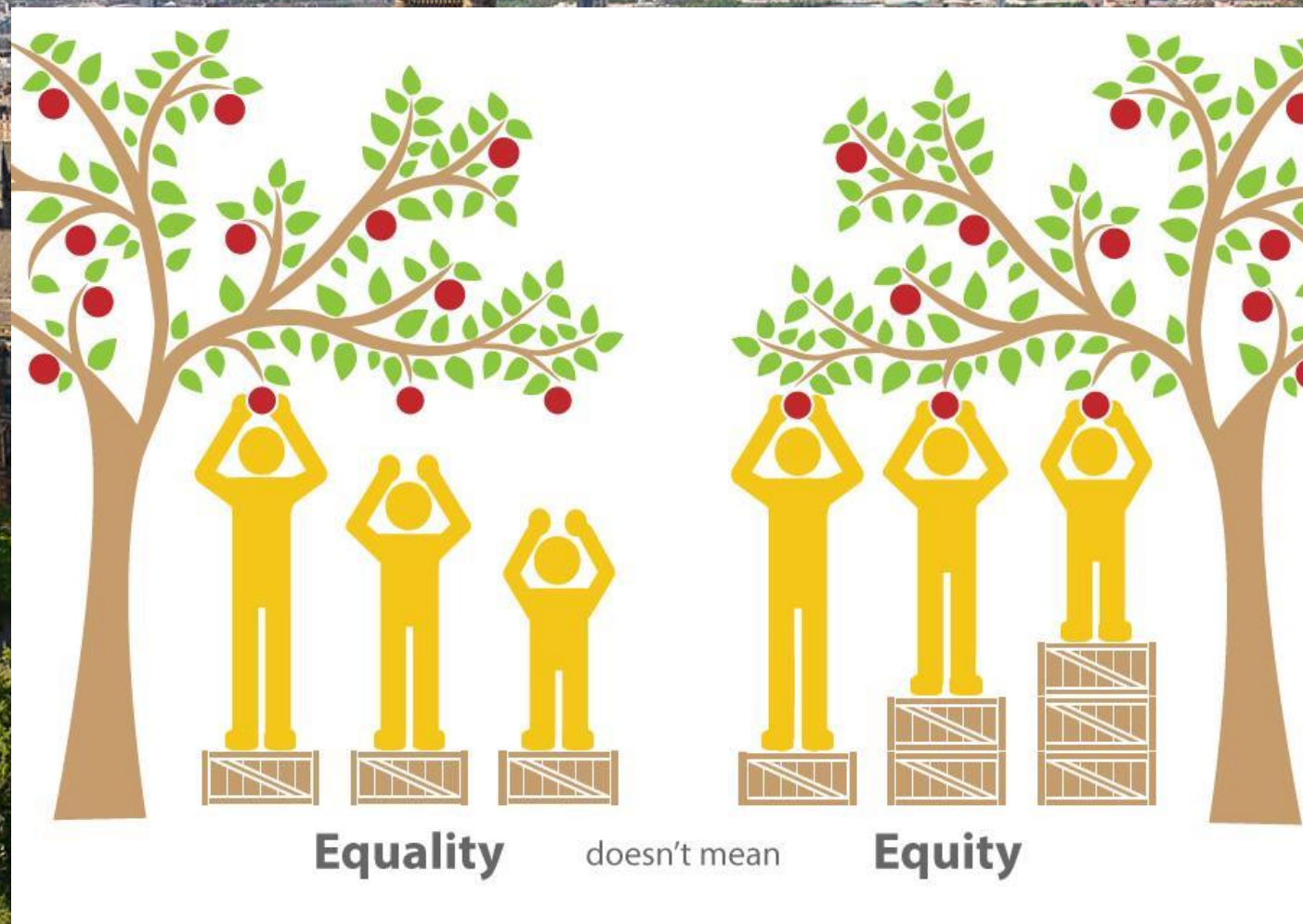
Final key conclusions

- **Patients** at high risk of missingness are characterized by poor health, higher treatment burden, complex social circumstances and have higher premature mortality
- **General practice appointment scheduling** and context is important
- **Patterns of missingness persist across secondary care** outpatients and inpatient ‘irregular discharges’; patients are NOT seen in ED instead
- **Missingness is a strong risk marker for a poor outcome** so needs urgent attention from health service planners and practitioners



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The importance of equity





Next steps

- **Research: Interventions to reduce ‘missingness in health care**
 - O’Donnell, Mackenzie, Wong, Duddy, Simpson & Ellis, NIHR £728k
 - Realist evidence synthesis
 - interviews with people with lived experience & professionals
 - Developing a complex intervention
- **Identifying patients at high risk**
- **Supporting patients**
 - Importance of relational care (Inclusion Health, NICE Guideline 214 2022)
 - Trauma informed practice- words (and what’s behind them) matter!
 - patient engagement coordinator for systems and patients?



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Thank you!

Further information

<http://www.gla.ac.uk/serialmissedappointments>



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