Medication-related harm due to non-adherence may explain the relationship between polypharmacy and mortality


Introduction
Strong evidence exists for a relationship between polypharmacy and mortality[1], independent of comorbidity. The mechanisms underlying this relationship are unclear. Medication-related harm (MRH) may occur due to non-adherence or adverse drug reactions. We sought to determine if MRH due to non-adherence or adverse drug reactions may explain the association between polypharmacy and mortality.

Methods
The PRIME study recruited 1280 older adults at hospital discharge from 5 hospitals in England between 2013 to 2015[2]. Patients were followed up in the community for 8-weeks by senior pharmacists to identify MRH using data from hospital readmissions, GP records and patient interviews. Mortality data at 12 months post-discharge were obtained from hospital records. Non-adherence was determined using a modified version of a validated questionnaire[3]. Adverse drug reactions were assessed using the Naranjo algorithm[4]. Adjusted logistic regression models were used to investigate the relationship between (1) number of medicines and MRH, (2) MRH and mortality.

Results
1116 out of 1280 patients completed follow-up (median age 82 years, range 65-103 years, 58% female). Patients were discharged with a median of 9 medicines (range 0-27). A higher number of medicines was strongly associated with MRH due to non-adherence (p<0.01) and adverse drug reactions (p<0.001). In multivariable analysis, MRH due to non-adherence was associated with one-year all-cause mortality (OR 1.80, 95% CI 1.08-2.99, p=0.02), however MRH due to ADR was not (OR 1.20, 95% CI 0.86-1.68, p=0.28).

Key Conclusions
Harm from non-adherence to medications may explain the relationship between polypharmacy and mortality.

References