CareSearch Project Research Studies Register: Registration Proforma	0185

Study Title: Pre-existing risk factors for in-hospital death among older patients could be used to initiate end-of-life discussions rather than Rapid Response System calls: A case-control study.

Brief description of the study: AIM: To investigate associations between clinical parameters - beyond the evident physiological deterioration and limitations of medical treatment - with in-hospital death for patients receiving Rapid Response System (RRS) attendances. METHODS: Retrospective case-control analysis of clinical parameters for 328 patients aged 60 years and above at their last RRS call during admission to a single teaching hospital in the 2012-2013 calendar years. Generalised estimating equation modelling was used to compare the deceased with a randomly selected sample of those who had RRS calls and survived admission (controls), matched by age group, sex, and hospital ward. RESULTS: In addition to a pre-existing order for limitation of treatment or cardiac arrest (OR 6.92; 95%CI 4.61-10.27), nursing home residence, proteinuria, advanced malignancy, acute myocardial infarction, chronic kidney disease, cognitive impairment and frailty were associated with high risk of death. After adjusting for all the clinical indicators investigated, the strongest risk factors for in-hospital death for patients with a RRS call were advanced malignancy (OR 3.95; 95%CI 2.16-7.21) and new myocardial infarction (OR 2.79; 95%CI 1.86-4.20). Patients with cognitive impairment, frailty indicator or chronic kidney disease were twice as likely to die as patients without those risk factors. CONCLUSION: In a sample of older deteriorated patients requiring a RRS attendance, multiple indicators of chronic illness, cognitive impairment and frailty were significantly associated with high risk of death. These clinical features beyond the evident orders for limitation of medical treatment should signal the need for clinicians to initiate end-of-life discussions that may prevent futile interventions.

Study Methodology: (Please mark with an x which type of study methodology)

	Epidemiology
X	Health Services / Health Economics / Quality Improvement
	Qualitative, Observational or Descriptive
	Mixed Method
	Systematic Review
	Intervention: RCT
	Intervention: Comparative or cohort study
	Intervention: Case series

Project details:

Funding source (Optional): NHMRC program grant

Has the study received ethics approval?	**X**	Yes		No		Not applicable
Project starting date: May 2014						
Project completion date: March 2016						
Multi site:		Yes	**X**	No		Not applicable
Researchers						
Principal Investigator (name) Dr Magnolia Cardona-Morrell						
Contact Details +61 2 8738 9373 m.cardonamorrell@unsw.edu.au						
Investigator B (Name) Ms Amanda Chapman						
Investigator C (Name) Dr Robin M Turner						
Investigator D (Name) Miss Ebony T Lewis						
Investigator E (Name) Dr Blanca Gallego-Luxan						
Associated publications / reports: Cardona-Morrell M, Chapman A, Turner RM, Lewis E, Gallego-Luxan B, Parr M, Hillman K. Pre-existing risk factors for in-hospital death among older patients could be used to initiate end-of-life discussions rather than Rapid Response System calls: A case-control study. Resuscitation. 2016 Dec; 109:76-80. Epub 2016 Oct 18.						
Topics (Admin only) Older people, Site of care: Hospital						