

**Supplemental Table 4. Characteristics of randomized studies**

Study Country # Enrolled # of Arms		Eligibility	Population High Risk? Mean Age (SD) Female % Race % Living Alone % Top 3 Conditions	Outcomes Reported <sup>a</sup> Outcome Timing Primary Outcome	Risk of Bias for Objective and Patient- Reported Outcomes <sup>b</sup>
<b>Single-Strategy Interventions</b>					
<i>Case Management/Transition of Care</i>					
Basic, 2005 <sup>1</sup> Australia 224 2		Inclusion: "Older adult" functional impairment; psychological disability; social disability; active multisystem disease  Exclusion <sup>c</sup> : Medically unstable; living in nursing home	High risk: Yes, based on functional status or other Age: 78.7 (6.4) Female: 60% Race: NR Living alone: 39% Top 3: Musculoskeletal, cardiovascular, neurological	Functional status: Modified Barthel index Hospitalization: At index <sup>d</sup> visit Timing: Index visit  Primary: Index hospital admission, length of inpatient stay, functional decline	Objective: High Patient: High
Caplan, 2004 <sup>2</sup> Australia 739 2		Inclusion: Aged ≥75  Exclusion: Lived in a nursing home; previously enrolled in this study	High risk: No Age: 82.2 (6.0) Female: 61% Race: NR Living alone: 39% Top 3: Ischemic heart disease, falls, diabetes mellitus	<b>Functional status: Composite</b> Mortality Hospitalization: After index visit  ED readmit  Timing: 30 days; 3, 6, 12, 18 months  Primary: All hospital admissions within 30 days of ED visit	Objective: Low Patient: Unclear

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Gagnon, 1999 <sup>3</sup> Canada 427 2		Inclusion: Aged ≥70 with cardiac disease (part of risk assessment)  Exclusion: Admitted to ED from long-term care facility or nursing home; currently in another research study or followed by a geriatric team; hospitalized; partner already enrolled	High risk: Yes, based on ADL and Boult assessment tool Age: 81.6 (6.4) Female: 58% Race: NR Living alone: 61% Top 3: Diabetes, cardiac	Functional Status: ADL, IADL Quality of life: SF-36 Mortality Patient experience Hospitalization: follow-up ED readmit  Timing: 10 months  Primary: Quality of life, satisfaction with care, functional status, admission to hospital, length of hospital stay, or readmission to ED	Objective: Unclear Patient: Unclear
Runciman, 1996 <sup>4</sup> Europe 424 2		Inclusion: Aged ≥75; accident  Exclusion: NR	High risk: No Age: 81 (NR) Female: NR Race: NR Living alone: NR Top 3: Fall and soft-tissue injury	<b>Functional Status: SF-36</b> <b>Patient experience:</b> <b>Informal</b> ED readmit  Timing: 4 weeks  Primary: Patient satisfaction, ED readmission rate, dependency, functional outcome	Objective: Unclear Patient: Unclear

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<b>Multi-Strategy Interventions</b>					
<i>Discharge Planning PLUS Case Management/Transition of Care</i>					
Eklund, 2013 <sup>5</sup> Europe 181 2		Inclusion: Aged 65-79 with 1 or more chronic disease and dependent in 1 or more ADLs, or ≥ age 80  Exclusion: Dementia; palliative care; and acute severe illness with immediate need of assessment and treatment by physician	High risk: Yes, based on ADL and diagnosis Age: NR Female: 55% Race: NR Living alone: NR Top 3: Frail, visual impairment	<b>Functional status</b>  Timing: 3, 6, 9, 12 months  Primary: Frailty (Berg Balance scale)	Objective: NA Patient: High
McCusker, 2001 <sup>6</sup> Canada 388 2		Inclusion: Aged ≥65  Exclusion: Referred from nursing home or chronic disease hospital; patient expected by ED staff to be admitted; medically unstable or cognitively impaired with no family as proxy; already seen by a member of the hospital's geriatric staff prior to enrollment	High risk: Yes, based on ISAR score Age: 76.6 (7.0) Female: 61% Race: NR Living alone: 40% Top 3: Cardiorespiratory, musculoskeletal, digestive	<b>Functional status: ADL</b> <b>Patient experience</b> Hospitalization: At index visit ED readmit Costs  Timing: 1, 4 months  Primary: functional status and depression, change in caregiver physical and mental health status, patient and caregiver satisfaction with care	Objective: Low Patient: Low

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Mion, 2003 <sup>7</sup> USA 650 2		Inclusion: Aged ≥65  Exclusion: Not expected to discharge from ED; impaired hearing; no family caregiver as proxy for cognitively impaired	High risk: No Age: 74.4 (6.9) Female: 59% Race: White (39%), other categories (NR) Living alone: NR Top 3: NR	Functional status: SF36 Mortality <b>Patient experience</b> Hospitalization: After index visit ED readmit Costs  Timing: 30, 120 days  Primary: Health care service use (defined as ED, hospital, nursing home, health care costs)	Objective: Low Patient: Low
<i>Case Management/Transition of Care PLUS Medication Management</i>					
Biese, 2014 <sup>8</sup> USA 178 3		Inclusion: Aged ≥65  Exclusion: Admitted to hospital; discharged to setting other than home; not referred to outpatient follow-up; cognitively impaired; patient excluded from primary outcome ONLY if returned to ED or was hospitalized within 5 days of index ED visit	High risk: No Age: 75 (7.58) Female: 60% Race: White (67%-74%), Black (23%-31%) Living alone: NR Top 3: NR	Hospitalization: After index visit ED readmit Costs  Timing: 35 days  Primary: Post-ED discharge measured by expedited outpatient follow-up and/or increased compliance with medication changes	Objective: High Patient: High

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Biese, 2017 <sup>9</sup> USA 2000 2		Inclusion: Aged ≥65  Exclusion: discharged to hospice or skilled care facility or correctional institution; failed cognitive test; no phone; no ER note; psychiatric reason for ER visit; left ER against medical advice prior enrollment or refusal	High risk: No Age: 74 (7.1) Female: 60% Race: White (77%), Black (19%) Living alone: NR Top 3: Traumatic injury, pain (any), cardiac symptoms	Mortality Hospitalization: After index visit  ED readmit  Timing: 30 days  Primary: Composite of # days from ED discharge to return to ED, hospitalization, or death	Objective: Unclear Patient: High

<sup>a</sup> Outcomes limited to those prioritized for this review. Bolded text reflects outcomes with a positive effect of intervention strategies.

<sup>b</sup> Objective outcomes (*ie*, non-patient-reported outcomes): mortality, hospitalization, ED readmission. Patient-reported outcomes; health-related quality of life, functional status, patient experience.

<sup>c</sup> Exclusion criteria shown are limited to those relevant to this review.

<sup>d</sup> Index refers to the ED visit during which study enrolment occurred.

Abbreviations: ADL=activities of daily living; ED=emergency department; IADL=independent activities of daily living; ISAR=identification of seniors at risk; NA=not applicable; NR=not reported; SD=standard deviation; SF-36=short-form health assessment questionnaire

## References

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