Critical Review Form
Therapy
Ricauda NA, et al. Home Hospitalization Service for Acute Uncomplicated First Ischemic Stroke in Elderly Patients: A Randomized Trial, *JAGS* **2004: 52: 278-283**

Objective: To evaluate whether home treatment of patients ≥ 70 years with uncomplicated first acute ischemic stroke is associated with different mortality rate and/or clinical outcomes than those treated on general medical ward (GMW).
Methods: Block randomized, single-blinded assessment of 120 patients presenting at San Giovanni Battista Hospital in Torino, Italy from January 1997 through February 1998. Patients were randomized into standard care group (control) on GMW or geriatric home hospitalization service (GHHS). GHHS consisted of geriatricians, nurses, physical therapist, dieticians, psychologist, occupational therapist, speech therapist and social worker, the first three of which evaluated and treated the home patients daily during the intervention period. Outcomes included 6-month survival, 7-point Functional Impairment Scale, Canadian Neurological Scale, and NIH Stroke Scale.

	Guide	**Comments**
I.	**Are the results valid?**	
A.	**Did experimental and control groups begin the study with a similar prognosis (answer the questions posed below)?**	
1.	Were patients randomized?	Yes, by block randomization (p. 279)
2.	Was randomization concealed (blinded)?	No. Patients could not be blinded if they were being discharged home. The nurses who evaluated the patient upon enrollment and physicians who conducted follow-up evaluations were blinded to patients' allocation. (p. 279)
3.	Were patients analyzed in the groups to which they were randomized?	Intention-to-treat analysis was used (p. 279)
4.	Were patients in the treatment and control groups similar with respect to known prognostic factors?	Table 1 (p. 281) shows no significant differences in reported demographic, historical, or clinical variables between the two groups.

B.	**Did experimental and control groups retain a similar prognosis after the study started (answer the questions posed below)?**	
1.	Were patients aware of group allocation?	Yes, so subject to bias (recall).
2.	Were clinicians aware of group allocation?	Clinicians were not aware of where the patient was randomized to during the index evaluation, but they were aware of allocation during the treatment period.
3.	Were outcome assessors aware of group allocation?	No
4.	Was follow-up complete?	No loss to follow-up reported during the 6-month trial.
II.	**What are the results (answer the questions posed below)?**	
1.	How large was the treatment effect?	1) GHSS had <u>increased length-of-stay</u> (38.1 days versus 22.2 days, p<0.001). 2) <u>No effect on mortality</u>, either short (21.7% versus 23.3%, p=0.89) or long-term (6 month, 35% versus 40%, p=0.49). 3) <u>No effect on select medical complications</u>: pneumonia (26.7% GHHS versus 30.3% GMW) or UTI (20% GHHS versus 23.3% GMW, no p-values reported). 4) **Large reduction on those subsequently admitted to long-term care facility** for those in GHHS group: 2% GHHS versus 54% GMW. This suggests that a large number of GMW patients may be successfully managed from home post-discharge from acute hospital (Institutionalization bias?).
2.	How precise was the estimate of the treatment effect?	No confidence intervals provided.

III.	How can I apply the results to patient care (answer the questions posed below)?	
1.	Were the study patients similar to my patient?	Yes, especially if caring for elderly Italians from "The Hill"! Exclusion criteria, though, would limit generalized applicability: geographically close to the hospital with a dependable, live-in caregiver.
2.	Were all clinically important outcomes considered?	Yes.
3.	Are the likely treatment benefits worth the potential harm and costs?	"Each patient-day of at-home care cost about one-third of the cost of a traditional hospital setting…" (p. 282)

Limitations:
1) Few health systems can boast 20 years experience with geriatric home health care services (GHHS), as can this Turin group. The requisite initial funding and learning curve at other institutions would undoubtedly impact the ability to replicate these impressive results.
2) Very limited population: geographically close to the hospital with a live-in caregiver.
3) GMW care may not be comparable to stroke-unit care, though most US hospitals still do not utilize a dedicated stroke-unit and the GMW model probably more closely approximates reality, in general.

Bottom Line:
Home treatment of elderly patients after a first acute, uncomplicated ischemic stroke is at least as effective as traditional hospital management. Patients currently treated on general medical wards may be managed successfully from home in a structured, multi-disciplinary program thereby easing the inpatient and LTCF bed crisis. Many patients currently discharged from acute care hospitals to rehabilitation hospitals might be managed equally effectively from home.