Outcomes of acute care geriatric units in the context of intervention delivery, and health care team development strategies

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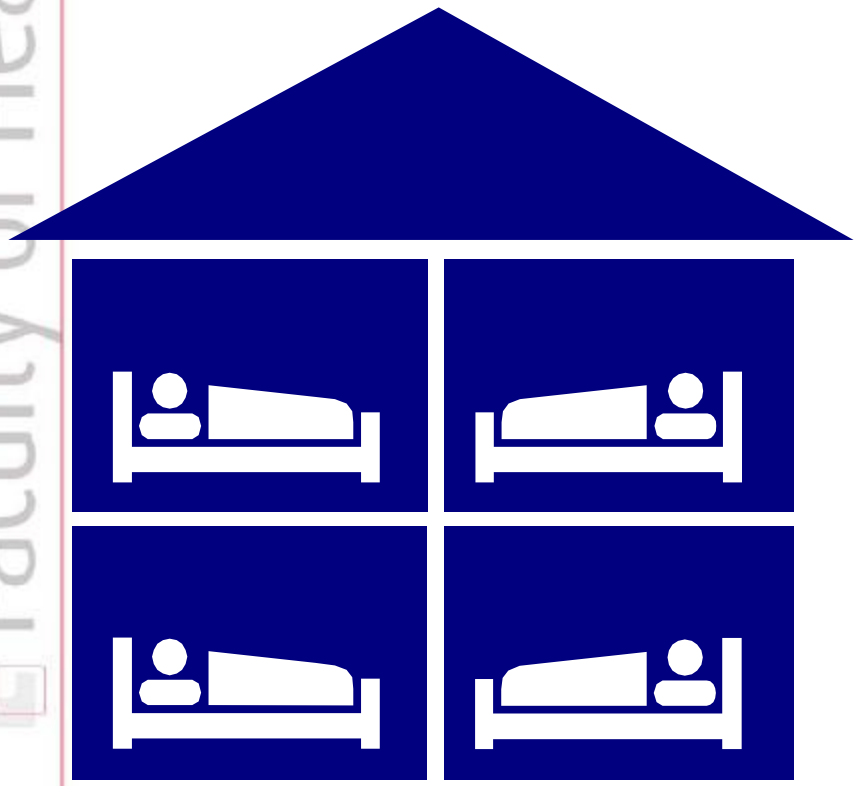
redefine THE POSSIBLE

Context: Risks



- Adults aged 65+ at risk for functional decline and iatrogenic complications such as falls, pressure ulcers, and delirium
- Hospital acquired functional decline & iatrogenic complications associated with ↑ costs, institutionalization, and mortality in older adults even after controlling for co-morbidity & illness severity

Context: ACE model

- Acute geriatric unit care, based on a “pre-habilitation” & “function focused” Acute Care for Elders (ACE) designed to prevent functional decline and iatrogenic complications
- Found effective (Fox et al)
- ↑ older hospital population need to implement acute geriatric care, based on the ACE model, on all hospital units where older adults are admitted

Context: limited understanding

1. specific activities that comprise the components of acute geriatric unit care
2. approach needed to provide the components
3. dose at which the components are to be given
4. KT team strategies needed

to induce the expected changes in the outcomes.

Clarification needed to translate ACE model into the context of practice

Purpose

To delineate the elements of acute geriatric unit care which may have contributed to its effectiveness

Design

Descriptive review representing

Phase II of a large systematic review and meta-analysis of acute care unit geriatric based on the ACE model using Cochrane methodology

Phase II

Descriptive review to

1. explore the extent to which positive outcome achievement was associated with differences in ACE intervention components and KT team strategies
2. describe the ACE intervention components of acute geriatric unit care manifesting ES $\geq$ .20 in terms of their activities, approach, & dose, and KT team strategies

Phase II inclusion criteria

Design: included trials from Phase I and papers describing intervention elements of included trials

Outcomes: those that manifested at least small effects in Phase I meta-analysis:

1. functional decline
2. iatrogenic complications (falls, pressure ulcers, & delirium)
3. discharge destination (home & nursing home)
4. cost of hospital care

Data extraction – Phase II Information categories

1. **Patient-centered care** - nursing assessments & activities focused on older adults' physical, cognitive, & psychosocial status to prevent declines in functioning
2. **Frequent medical review** - assessments & activities focused on medical treatments to minimize their detrimental effects functioning
3. **Early rehabilitation** – OT & PT assessments & activities focused on restoring functioning
4. **Early discharge planning** - assessments & activities focused on needs to return home
5. **Prepared environment** - environmental modifications focused mainly on physical renovations to facilitate functioning during hospitalization.

- **Approach -** standardized, tailored, or mixed ?
- **Dose** – when initiated, how often, and for how long?
- **KT strategies** – any team development strategies to help them provide ACE interventions to patients & families

Data analysis

To explore extent to which outcome achievement associated with differences in ACE intervention components & KT strategies:

- Calculated standardized mean differences for continuous outcomes using Cohen's formula. For dichotomous outcomes, we calculated odds ratios which we then re-expressed as standardized mean differences using Chinn's formula (2000).

To describe interventions:

- Content analysis
- Descriptive stats (frequencies)

Results

literature search yielded

- 9 descriptive papers
- 20 experimental papers
- 1 published abstract
- 1 unpublished report
- 1 thesis

reporting on 14 research trials

What was provided?

- Patient-centered care - all 14 trials
- Frequent medical review - 9/14 trials
- Early discharge planning - 8/14 trials
- Early rehabilitation - 6 /14 trials
  Prepared environment – 5/14 trials
- KT strategies – 5/14 trials

Outcome Achievement Relative to ACE Components

Average Effect Sizes across outcomes

- Patient-centered care ES = **-.23** (n = 32)
- Early rehabilitation ES = **-.23** (n = 12)
- Frequent medical review ES = **-.22** (n = 22)
- Early discharge planning ES = -.18 (n = 19)
- Prepared environment ES = -.12 (n = 12)

N = number of effect sizes included in analysis

Outcome Achievement Relative to KT strategies for team

Average Effect Sizes across outcomes

- KT strategies ES = **.25** (n = 16)
- No KT strategies ES = .15 (n = 20)

Patient-centered care

- Included assessing physical, cognitive, & psychosocial functioning (11/11 trials with this data) within 24 hours of admission (9/12 trials)
- Based on the assessments, care activities focused on preventing declines in 8 main areas of functioning implemented:
  - Nutritional status (10/14 trials)
  - Mobility or falls (9/14 trials)
  - Self-care ability (9/14 trials)
  - Skin integrity (8/14 trials)
  - Cognition (8/14 trials)
  - Continence or elimination (7/14 trials)
- continued at least daily (5/6 trials) for the duration of hospital stay (6/8 trials) using a mixed approach (7/12 trials)

Early rehabilitation

- Included admission PT & OT assessments (3/ 6 trials) and/or PT or OT treatment (4/6 trials)
- Treatment activities focused on:
  - improving mobility including falls prevention (5/6 trials)
  - improving ADL performance/ self-care ability (4/6 trials)
- Dose poorly described
  - initiated within 48 hours of admission (2/2 trials)
  - continued daily (1 trial)
  - for at least the duration of the hospital stay (all 6 trials)
- Approach varied
  - standardized and provided to all patients (3/6 trials)
  - individualized and provided only to older adults in need of rehabilitation (3/6 trials). PT or OT participated in daily interdisciplinary team meetings during which information from the daily patient-centered care assessments was communicated.

Frequent medical review

- Involved screening for high risk medications (8/9 trials), & high risk treatments and planned procedures (7/9 trials)
  - Based on the assessment, protocols implemented to minimize the adverse effects of medications (8/9 trials) followed by treatments or planned procedures (7/14 trials).
  - most often initiated on admission or within 24 hours of hospital admission (5/7 trials) and continued daily (8/ 9 trials) for at least the duration of hospital stay (9/9 trials)

- Mixed approach (8/ 9 trials) - all older adults' medications, treatments and planned procedures were screened, & standardized guidelines implemented based on need

KT strategies

- KT strategies to facilitate interdisciplinary teams' ability to implement the ACE components (5/14).
- pre-trial education focused on geriatric care (5/14), roles & responsibilities (4/14), & interdisciplinary working principles (2/14)

Conclusions

Following may represent optimal combination of intervention elements

<u>Older adults & families/caregivers</u>

1. Patient-centered care - focused on nutrition, mobility, self-care, skin integrity, cognition & continence or elimination
2. Early rehabilitation - focused on improving mobility & ADL performance
3. Frequent medical review - focused on screening & protocols for high risk medications, treatments, & planned procedures

Started within 24-48 hours of admission, using a mixed approach, & continued daily for duration of hospital stay

<u>Teams</u>

- KT strategies - focused on geriatric education & team work