Effectiveness of a multi-component intervention to reduce delirium incidence in elderly care wards - Rachel Holt, John Young, David Heseltine. Age and Ageing 2013; 0:1–7

I Background

• Delirium is present in 10-15% of older patients on admission and develops in another 10-40% during hospitalization
• Delirium is associated with an increased risk of death, reduced longer term function, greater risk of admission to long-term care, longer length of hospital stay
• The aim of our study: to investigate the additional benefit of a complex delirium prevention intervention delivered as part of routine care in the context of a specialist elderly care hospital service.

II Hypothesis of the study

• Previous literature shows 'proof of concept' that delirium is decreased when dementia experts are on board. This study hopes to show effects on inpatient dementia through training sessions given to usual caregivers

III Methods review

• Quasi-experimental 'before' and 'after' study
• 3 specialist acute elderly care wards (80 beds) with the same admission and care policies participated
• Patients either admitted via ED or direct admits
• 'before group' (10/07 – 3/08) 'after group' (8/08 – 1/09)
• Intervention:
  o 3 PARTS:
    ▪ (1) Identification of local opinion leaders or 'champions' to lead the implementation of the intervention. (specialist nurse, geriatrician and nurse manager)
    ▪ (2) An initial educational intervention to raise awareness, knowledge and enthusiasm via a 30-min interactive lecture with a handout, a delirium quiz, a poster, reference material and case vignettes
    ▪ (3) A practice change intervention directed at delirium risk factors comprised of a delirium risk factor modification care plan placed at the end of the patient's bed and required signed actions three times each day, a delirium assessment protocol forward doctors and an escalation flowchart for suspected delirium for nurses.
• Exclusions:
  o Patients with prevalent delirium (excluded after baseline assessment)
  o Patients considered too unwell to be assessed (in opinion of clinical staff)
  o Unable to communicate (dysphasia, unable to speak English)
  o Patients for whom consent could not be obtained within 24 h of admission
• Baseline Assessment:
  o CAM, DRS-R-98, MMSE, Whisper test, Snellen chart, demographics, acute illness severity (Modified Early Warning Score), comorbidity (Charlson score)
• Process outcomes:
  o Ward staff attendance, knowledge tests about delirium, adherence to intervention (proportion of care plans signed as completed)
IV Results

- **Figure 1**: 436 participants: 249 in the ‘before’ group and 187 in the ‘after’ group
- Delirium risk factors:
  - disorientation, dehydration, visual impairment, hearing impairment, constipation, pain and immobility.
- Process outcomes:
  - Delirium education sessions were attended by 70% of staff
  - 82% (n = 27/33) of healthcare assistants and staff nurses who completed the test had increased knowledge about delirium
  - 27–57% adherence with protocol, although maybe underestimated
  - Protocol adherence was highest for reorientation and hydration, and lowest for mobility and constipation.

- **Table 1**: Baseline characteristics
- **Table 2**: Patient outcomes:
  - Primary outcome:
    - Proportion of incident delirium during first 7 days (13.3% -> 4.6%)
    - CAM & DRS-R-98 was performed by trained research assistants who were blinded to baseline assessments.
  - Secondary outcomes:
    - BENEFITS:
      - Duration of delirium episodes (0.29 -> 0.06 days)
      - Mean severity of delirium, DRS-R-98 score (16.86 -> 9.17)
    - NO CHANGE:
      - In hospital mortality, Length of stay, Function at discharge, New discharge to LTC, 6-month mortality, 6-month readmission or admission to LTC
    - WORSENEED:
      - 6 month rehospitalizations

V Authors conclusions

- Lower prevalent delirium of 13.3% suggests CGA care process that was already in place was having effects
- Lack of mortality benefits might be explained by the adverse health state of frailty & frailty should be considered as an important confounder in future delirium prevention studies
- ‘before’ and ‘after’ groups differed by sex and LTC status, dehydration, hearing impairment although this was not likely significant
- Strengths: large size, intervention by existing staff, minimized observer bias by assessing with trained staff
- Limitations: quasi-experimental
- Specialist elderly care wards should consider the introduction of multi-component delirium prevention interventions to augment existing CGA care

VI Reviewers Critique

- If the point is to show how educating usual staff has on dementia, a better study might be to implement change on a NON-CGA floor
- Methods section: What exactly was the intervention? If the point is to show ability to disseminate delirium prevention, they should be quite explicit what the intervention was.