NETSCC, HTA

20th January 2011

The clinical and cost-effectiveness of home-based health promotion for older people.

HTA 09/142

Draft Protocol

1 December 2010

1. Title of the project:

The clinical and cost-effectiveness of home-based health promotion for older people in the United Kingdom.

2. Name of TAR team and project 'lead'

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3. Plain English Summary

Older age is associated with numerous health risks. Physical health may decline and frailty increases, bringing with it additional risks such as falls. Social isolation may become more common due to reduced physical mobility and changing family structures and working patterns. Social isolation can lead to deterioration in emotional and psychological health. Older peoples' needs may become an increasingly important health issue as the number of older people increases. Changing family structures and greater mobility in the working population means that more older people will be living alone, and social isolation and loneliness may become increasingly widespread. By 2021 it has been estimated that more than one in every 15 people will be an older person experiencing a mental health problem.

In older age, reduction in physical function can lead to loss of independence, the need for hospital and long-term nursing-home care and premature death. The importance of physical, functional, psychological and social factors in realising a healthy old age is recognised by elderly people,[1] health care professionals[2] and policymakers.[3] Physical and psychological health promotion for the elderly may have many important benefits for individuals, families and society as a whole.

Enabling older people to remain in their own homes has been a relevant government objective for several decades. In recent years, emphasis has been placed on health promotion and other preventative measures to delay the onset of illness and dependency that lead to long-term care needs.[4] In the UK, annual assessments of

physical and cognitive health for individuals aged over 75 became a necessity in primary care in 1989. In 2005, a targeted approach to assessment and care was developed with community nurse-led case management of elderly people with medical conditions. Home visiting programmes for older people may positively affect health and functional status, promote independent functioning and reduce hospital and nursing home admissions.

Since 2000, nine systematic reviews[5-10;11-13] have been published. These reported conflicting results regarding the benefits of home visiting programmes; five found beneficial effects, three found no evidence of benefit and two were inconclusive. A subgroup analysis within one review suggested that effective home-visiting programmes include multidimensional assessment, many follow-up visits and targeted people at a lower risk of death.[7] These reviews did not include consider cost-effectiveness concerns and none were UK-specific.

This assessment will seek to address these gaps to identify the factors which contribute to the effectiveness of these interventions and to examine whether such programmes represent value for money.

4. Decision Problem

Research Question: What is the clinical and cost-effectiveness of nurse-led health promotion intervention delivered at home for older people at risk of admission to hospital, residential or nursing care in the UK?

Intervention: Structured home-based nurse led health promotion.

Patient population: Frail older people (>75 years) with long-term medical or social needs at risk of admission to hospital, residential or nursing care.

Setting: In the home or community.

Relevant comparators: Standard care including joint health and social assessment. Health promotion delivered in a different setting or not delivered by a nurse.

Design: An evidence synthesis in the form of a systematic review of studies undertaken in the UK, including older people with longer-term medical or social needs and at risk of admission to hospital, residential or nursing care. A decision analytic model will be developed to investigate the cost-effectiveness of nurse-led, home- or community-based health promotion.

Outcomes: The systematic review will summarise the evidence for home-based nurse-led interventions designed to promote health and prevent the deterioration of health. The review will look at the components of the review and seek to identify factors that contribute to the clinical effectiveness of particular programmes.

Key factors to be addressed: Do home-based nurse-led interventions work, and if so what do they prevent or promote? If these interventions work effectively, what features of the interventions are crucial to their effectiveness and do these represent good value for money for the NHS?

5. Report methods for synthesis of evidence of clinical effectiveness

A systematic review of the evidence for clinical effectiveness will be undertaken following the general principles recommended in the QUOROM statement. The review will assess the effectiveness of nurse-led, home-based health promotion interventions for frail older people. It will also seek to identify the effective components of the intervention.

Population: Frail older people (>75 years) with long-term medical or social needs at risk of admission to hospital, residential or nursing care.

Interventions: Structured home based nurse-led health promotion.

Comparators: Standard care including joint health and social assessment. Health promotion delivered in a different setting or not delivered by a nurse.

Outcomes: Admission to hospital, residential or nursing care, mortality, morbidity including depression, falls, accidents, deteriorating health status, patient satisfaction.

Search Strategy:
The search will be limited by date from 2001 to 2010. The Stuck *et al* (2002) review will be used as a source for identifying studies publishing earlier prior to 2002 (their search was conducted from January 1985 to November 2001). Bibliographies of previous systematic reviews, review articles and included studies will be handsearched to identify any other relevant studies.

The search strategy will comprise the following elements:

- Searching of electronic databases
- Handsearching of bibliographies of retrieved papers
- Contact with experts in the field

Databases to be searched include the following:

- MEDLINE
- MEDLINE in Process (last 12 months)
- EMBASE
- CINAHL
- The Cochrane Library including the Cochrane Systematic Reviews Database, Cochrane Controlled Trials Register, DARE, NHS EED and HTA databases
- Science Citation Index (via Web of Science)
- National Research Register
- www.clinicaltrials.gov

Inclusion Criteria:
Studies will be included if they were conducted in the UK. They will be included if they evaluated a nurse-led health promoting intervention delivered in a home or community setting. Studies will only be included if they adopted an RCT design.

Exclusion Criteria:
Non-randomised studies, non-English language papers and reports published as meeting abstracts only where insufficient methodological details are reported to allow

critical appraisal of study quality. Non-UK studies and interventions led by professionals other than nurses.

Data Extraction Strategy:
Data will be extracted by one reviewer (FC).

Quality Assessment Strategy:
Quality will be assessed using the Cochrane Risk of Bias tool. In particular, consideration of study quality will include the following factors:

Trial characteristics

1. Timing, duration and length of follow-up of the study
2. Method of randomisation
3. Method of allocation concealment
4. Blinding
5. Numbers of participants randomised, excluded and lost to follow-up.
6. Whether intent-to-treat analysis is performed.
7. Methods for handling missing data

Methods of analysis/synthesis:

Data will be tabulated and discussed in a narrative review. Where appropriate, meta-analysis will be employed to estimate a summary measure of effect on relevant outcomes based on intention to treat analyses. Meta-analysis will be undertaken using fixed and random effects models, using RevMan software. Heterogeneity will be explored through consideration of the study populations, methods and interventions, by visualisation of results and by the I^2 statistic.

Where available data is sufficient, subgroup analysis will be conducted to explore factors identified in earlier work as being significant in influencing intervention effectiveness including risk factors associated with the elderly person, the number of visits and the nature of the initial assessment. Sensitivity analysis will be used to explore the impact of study design on measures of effectiveness.

Methods for estimating quality of life:

Studies describing relevant health-related quality of life outcomes will be identified from published sources as deemed appropriate from the definition of the decision problem.

6. Report methods for synthesising evidence of cost-effectiveness

The cost-effectiveness of alternative NHS-based home nursing interventions will be assessed against standard care from the perspective of the NHS and Personal Social Services. Published trials and economic studies will be examined to identify existing comparative evidence concerning the cost-effectiveness of such interventions. If appropriate/required, a *de novo* health economic model will be developed. Relevant events, costs and outcomes for inclusion in the model, and the relationship between these, will be elicited from the literature and from the views of clinical experts through a formal and transparent problem structuring process using cognitive

mapping. Cost-effectiveness will most likely be assessed in terms of the incremental cost per quality adjusted life year (QALY) gained. Discounting will be undertaken using standard methods. The precise structure of the model will be determined upon consideration of relevant issues arising from the problem structuring process.

7. Expertise in this TAR team

TAR Centre:
The ScHARR Technology Assessment Group (ScHARR-TAG) undertakes reviews of the effectiveness and cost-effectiveness of healthcare interventions for the NHS R&D Health Technology Assessment Programme on behalf of a range of policymakers in a short timescale, including the National Institute for Health and Clinical Excellence. The group has extensive expertise in information retrieval, systematic reviewing and health economic modelling.

Contributions of team members:
Paul Tappenden, Senior Research Fellow
Paul will be the lead on this TAR project. Paul will manage the day-to-day progress of the assessment and will design and undertake the economic analysis.

Fiona Campbell, Research Fellow, ScHARR
Fiona will be the main reviewer on this project. Fiona will undertake the study selection, data extraction and do the meta-analyses.

Ruth Wong, Information Specialist, ScHARR
Ruth will undertake the systematic searches for the review.

Gill Rooney, Project Administrator, ScHARR
Gill will assist in the retrieval of papers and in preparing and formatting the report.

Expert advisors
Two expert advisors will be provide advice for the assessment: Margaret Osborne, who is a heart failure nurse specialist, and Gill Agar, who is a physiotherapist coordinating home based health promotion to prevent falls amongst the elderly. Both are health professionals currently involved in delivering home based health promotion to the elderly in their homes.

8. Competing interests of authors
None

9. Timetable/milestones
The project is expected to run from 1 December 2010 to 3 May 2011.

Milestone	Deadline
Draft protocol	1 December 2010
Final protocol	15 December 2010
Start review	1 March 2011
Progress report	5 April 2011
Assessment report	3 May 2011

10. Appendices
Appendix 1– Medline search strategy

1. aged/
2. "aged, 80 and over"/
3. frail elderly/
4. aged.tw.
5. aging.tw.
6. geriatric.tw.
7. elder$.tw.
8. senior$.tw.
9. pensioner$.tw.
10. (over 65 or over sixty-five$ or over sixty five$).tw.
11. (old$ adj20 (adult$ or person or people)).tw.
12. or/1-11
13. Health Education/
14. health education.tw.
15. Health Promotion/
16. (health adj (promotion$ or campaign$ or prevention$ or protection)).tw.
17. wellness program$.tw.
18. primary prevention.tw.
19. or/13-18
20. (nurse led or nurse-led or home or community based or community-based).tw.
21. 19 and 20
22. ((home-based or home based or home) adj nursing).tw.
23. Home Care Services/
24. home care service$.tw.
25. Home Nursing/
26. Health Services for the Aged/
27. House Calls/
28. house call$.tw.
29. (home visit$ or house visit$).tw.
30. Geriatric Nursing/
31. geriatric health service$.tw.
32. Community Health Nursing/
33. (community adj (health or nursing)).tw.
34. Public Health Nursing/
35. public health nursing.tw.
36. Specialties, Nursing/
37. specialist nurse$.tw.
38. district nurs$.tw.
39. visiting nurse$.tw.
40. health visitor$.tw.
41. advanced practitioner$.tw.
42. Nurse Practitioners/
43. nurse practitioner$.tw.
44. Nurse Clinicians/
45. clinical nurse specialist$.tw.
46. or/22-42
47. 12 and (21 or 46)

Searches will be limited by year from 2001 to present. A highly sensitive filter will be applied to limit searches by publication (reviews, RCTs and economic studies).

Appendix 2 - Sample data extraction form

STUDY	Baseline characteristics	Description of Intervention	Outcomes	Study Design
Author: Date: Setting:	Total number: Mean Age: Indicator of Health Status: % Male: Ethnic group: Indicator of provision of social support: Indicator of provision of existing social and/or health care support	Provider details (training, work load) Nature of intervention (purpose, frequency, duration of intervention and duration of follow-up)	Mortality during intervention and follow-up: Hospital or nursing home admission: Indicator of deterioration in health status: Patient satisfaction:	Baseline comparability: RCT or Cluster RCT: Method of allocation concealment: Method of randomisation: Blinding of outcome assessors: Loss to follow-up: Participant withdrawals: Other potential bias:

References

(1) Age Concern. Adding quality to quantity; older people's views on quality of life and its enhancement. 2003. London, Age Concern.

(2) Phelan EA, Anderson LA, LaCroix AZ, Larson EB. Older adults' views of "successful aging"--how do they compare with researchers' definitions? *J Am Geriatr Soc* 2004; 52(2):211-216.

(3) WHO. Active ageing: a policy framework. 2002. Geneva, World Health Organisation.

(4) Sutherland S. With respect to old age: long term care - rights and responsibilities. A report by the Royal Commission on long term care. 1999. London, Stationery Office.

(5) van Haastregt JC, Diederiks JP, van RE, de Witte LP, Crebolder HF. Effects of preventive home visits to elderly people living in the community: systematic review. *BMJ* 2000; 320(7237):754-758.

(6) Elkan R, Kendrick D, Dewey M, Hewitt M, Robinson J, Blair M et al. Effectiveness of home based support for older people: systematic review and meta-analysis. *BMJ* 2001; 323(7315):719-725.

(7) Stuck AE, Egger M, Hammer A, Minder CE, Beck JC. Home visits to prevent nursing home admission and functional decline in elderly people: systematic review and meta-regression analysis. *JAMA* 2002; 287(8):1022-1028.

(8) Meinck M, Lubke N, Lauterberg J, Robra BP. [Preventive home visits to the elderly: systematic review of available evidence]. *Gesundheitswesen* 2004; 66(11):732-738.

(9) Markle-Reid M, Browne G, Weir R, Gafni A, Roberts J, Henderson SR. The effectiveness and efficiency of home-based nursing health promotion for older people: a review of the literature. *Med Care Res Rev* 2006; 63(5):531-569.

(10) Beswick AD, Rees K, Dieppe P, Ayis S, Gooberman-Hill R, Horwood J et al. Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis. *Lancet* 2008; 371(9614):725-735.

(11) Bouman A, van RE, Nelemans P, Kempen GI, Knipschild P. Effects of intensive home visiting programs for older people with poor health status: a systematic review. *BMC Health Serv Res* 2008; 8:74.

(12) Gustafsson S, Edberg AK, Johansson B, Dahlin-Ivanoff S. Multi-component health promotion and disease prevention for community-dwelling frail elderly persons: a systematic review. *European Journal of Ageing* 2009; 6(4):315-329.

(13) Daniels R, van Rossum E, de Witte L, Kempen G, van den Heuvel W. Interventions to prevent disability in frail community-dwelling elderly: a systematic review. *BMC Health Services Research* 2008; 8(1):278.