NZHTA REPORT
February 2004
Volume 7 Number 2

Mental Health Services for Older People

A critical appraisal of the literature

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This report should be referenced as follows:

Ahuriri-Driscoll, A., Rasmussen, P., and Day, P. Mental health services for older people. *NZHTA Report* 2004; **7(2)**.

ISBN 1-877235-54-7
ISSN 1174-5142

ACKNOWLEDGEMENTS

Staff of NZHTA conducted this critical appraisal review.

It was prepared by Ms Annabel Ahuriri-Driscoll (Assistant Research Fellow) and Mr Peter Day (Research Fellow) who conducted the critical appraisals and prepared the report. Mrs Trish Rasmussen (Assistant Research Fellow) provided the descriptive review section on the key components of published geriatric psychiatry service protocols and guidelines. Mr Peter Day and Dr Ray Kirk (Director) coordinated the project. Ms Margaret Paterson (Information Specialist) developed and undertook the search strategy and coordinated retrieval of documents and Mrs Susan Bidwell (Information Specialist Manager) proofread the document. Mrs Ally Reid (Administrative Secretary) provided document formatting.

The Canterbury Medical Library assisted with the retrieval of articles.

A draft of this report was peer reviewed by Dr Pam Melding, University of Auckland and Associate Professor Brian Draper, Academic Department for Old Age Psychiatry, Prince of Wales Hospital, Randwick Sydney Australia.

NZHTA is a Research Unit of the University of Otago funded under contract to the Ministry of Health.

This report was commissioned by Ms Pam Fletcher, Senior Analyst, Health of Older People, Sector Policy Directorate of New Zealand's Ministry of Health. We also thank Pam and members of the Technical Advisory Group (TAG) for commenting on various drafts and assisting us in developing the scope of the review and providing background material for the review.

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EXECUTIVE SUMMARY

Objective

To identify and appraise international evidence for the effectiveness of geriatric psychiatry services.

Data sources

The literature was searched using the following bibliographic databases: Medline, Embase, Current Contents, PsychInfo, Cinahl, Science Citation Index, and the Social Science Citation Index. Other electronic sources searched included: Cochrane Library, Database of Abstracts of Reviews of Effectiveness, and the Health Technology Assessment database. Several Internet websites were also searched to access Health Departments internationally, professional associations of psychiatry and emergency medicine, and mental health organisations. In New Zealand, databases were accessed from the National Bibliographic Database, Ministry of Health website and library, university and medical library catalogues and the NZHTA in-house collection. Relevant publications referenced in material obtained in the course of research on the topic were also identified.

Searches were limited to English language material, published through to May 2003 inclusive. A full list of the sources of information and search terms used is given in the methodology section and relevant appendices.

Articles identified by experts in the field and members of the Technical Advisory Group (TAG) were also included if they met the inclusion criteria.

Selection criteria

Studies were included if they had a study population of people aged 65 years and over with mental health conditions (both long-term and acquired in old age); evaluated or described specialist geriatric psychiatry services, and considered outcomes relevant to health and wellbeing of service recipients and their families.

Studies with inadequate description of methodology and/or results or significant error or methodological problems were excluded. Narrative reviews, expert opinion, letters to the editor, comments, editorials, conference proceedings, abstracts only, books and book chapters were excluded from critical appraisal but material on geriatric psychiatry service guidelines, protocols and important expert opinion was included in **Section 3** of the review.

A total of 777 articles were identified by the search strategy and 239 of these articles were retrieved as full text. A final group of 68 primary/secondary critically appraised articles and 31 descriptively outlined secondary research articles were identified and included in the review.

Data extraction and synthesis

Literature was searched, selected and appraised based on a modified schedule of the Cochrane Effective Practice and Organisation of Care Review Group (EPOC) of the Cochrane Collaboration and in-house checklists developed by NZHTA. Evidence was classified according to National Health and Medical Research Council definitions (2000).

Key results and conclusions

The following conclusions are based on the current evidence available from this report's critical appraisal of literature published on the effectiveness of geriatric psychiatry services.

The most positive outcomes of geriatric psychiatry services were noted in community settings, with moderate to large intervention effect sizes evident, particularly for multidisciplinary team assessment and treatment of depression and comprehensive case-management of dementia.

Geriatric psychiatry services for inpatient settings were generally effective, with multidisciplinary team approaches in specialist geriatric psychiatry units showing the greatest success in the patient outcomes evaluated. Behaviour management programmes within specialist units performed by multidisciplinary teams were also effective. Consultation liaison interventions in these settings showed more mixed results.

For patients as well as caregivers, comprehensive services (including training and education in addition to assessment and treatment) provided by a multidisciplinary team, tailored to individual need, appear to be most effective.

To patients and caregivers, effective geriatric psychiatry services are those that are:

- comprehensive in their scope, with an holistic or 'bio-psycho-socio-cultural' approach to assessment, treatment and management
- staffed by competent and knowledgeable health professionals
- supported by informed families and communities
- tailored, flexible and responsive to individual need (culturally appropriate, at home)
- provided by a multidisciplinary team

There are limitations in the available research base and the evaluation of geriatric psychiatry services. What is published, despite being the best currently available, is at times difficult material to draw strong conclusions about service effectiveness. Studies in primary care, rural settings and also with minority or ethnic groups are lacking. These limitations do not necessarily indicate lack of effectiveness, but rather highlight the lack of research in these areas especially research specific to the New Zealand context.

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LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

ACE	–	acute care of elders unit
ACAT	–	aged care assessment team
AD	–	Alzheimer's Disease
ADL	–	activities of daily living
ADRD	–	Alzheimer's Disease and related disorders
A&E	–	accident and emergency department
AGS	–	American Geriatrics Society
AIDS	–	Acquired Immuno-Deficiency Syndrome
AN	–	admiral nurse
BAAEM	–	British Association of Accident and Emergency Medicine
BGS	–	British Geriatrics Society
BGT	–	behavioural group therapy
BICU	–	behavioural intensive care unit
BPRS	–	Brief Psychiatric Rating Scale
BRENDA	–	biopsychosocial-report-empathic-needs-direct advice-assessment model
C&A	–	care and assessment
CARE	–	coordination and advocacy for rural elders
CARE	–	comprehensive assessment and referral evaluation
CG	–	caregiver
CGA	–	comprehensive geriatric assessment
CGAT	–	comprehensive geriatric assessment team
C/L	–	consultation/ liaison
CMHT	–	community mental health team
CNA	–	certified nurse aide
CPN	–	community psychiatric nurse
CT	–	computer tomography
DAT	–	dementia of the Alzheimer's type
DCS	–	depression clinical specialist
DGH	–	district general hospital
DSM	–	Diagnostic and Statistical Manual
ED	–	emergency department
EHP	–	elders health programme
ESD	–	early supported discharge
FFS	–	fee-for-service
GACS	–	geriatric ambulatory consultative service
GAF	–	Global Assessment of Functioning scale

GAS	–	goal attainment scaling
GAT	–	geriatric assessment team
GAU	–	geriatric assessment unit
GCRU	–	geriatric clinical research unit
GDS	–	Geriatric Depression Scale
GDT	–	Geriatric Dementia Treatment
GEM	–	geriatric evaluation and management
GEU	–	geriatric evaluation unit
GEMU	–	geriatric evaluation and management unit
GH	–	general hospital
GHFP	–	geriatric hip fracture programme
GHY	–	general hospital youth
GNA	–	geriatric nurse assessors
GNP	–	gerontologic nurse practitioner
GMC	–	general medical clinic care
GMPU	–	general medical/psychiatry unit
GMW	–	general medical ward
GORU	–	geriatric orthopaedic rehabilitation unit
GP	–	general practitioner
GQLQ	–	geriatric quality of life questionnaire
HAPSA	–	the home assessment program for successful aging
HAS	–	home assessment service
HHAS	–	hospital home assessment service
HHS	–	home hospitalisation service
HIV	–	Human Immuno-deficiency Virus
HMO	–	health management organisation
HRSD	–	Hamilton Rating Scale for Depression
ICD	–	International Classification of Diseases
IGCS	–	inpatient geriatrics consultation service
IDT	–	interdisciplinary team
MAPS	–	Memory and Aging Project Satellite
MARU	–	mixed assessment and rehabilitation unit
MCO	–	managed care organisation
MDS	–	minimum data set
MDSHC	–	minimum data set for home care tool
MDT	–	multidisciplinary team
MGAT	–	mobile geriatric assessment team
MPS	–	multipurpose service
MRT	–	mobile rehabilitation team

NHS	–	National Health Service (UK)
NSF	–	national service framework
OAH	–	old age home
OAS	–	outpatient assessment service
OT	–	occupational therapist
PAC	–	post-acute care programme
PACE	–	programme for all-inclusive care of the elderly
PATCH	–	psychogeriatric assessment and treatment in city housing programme
PLST	–	progressively lowered stress threshold model
PPS	–	prospective payment system
PST-PC	–	problem solving therapy in primary care
PTSD	–	post-traumatic stress disorder
QoL	–	quality of life
QUIS	–	Quality of Interactions Schedule
RACGP	–	Royal Australian College of General Practice
RANZCP	–	Royal Australian and New Zealand College of Psychiatry
RCN	–	Royal College of Nursing
RCT	–	randomised controlled trial
SAGE	–	senior adult growth and enrichment programme
SCU	–	special care unit
SDU	–	special dementia unit
TAG	–	technical advisory group
TAPS	–	team for the assessment of psychiatric services
TCU	–	transitional care unit
UK	–	United Kingdom
UPBEAT	–	unified psychogeriatric biopsychosocial evaluation and treatment programme
USA	–	United States of America
VA	–	veterans association
VaD	–	vascular dementia
VAMC	–	veterans association medical center
WHO	–	World Health Organisation
WPA	–	World Psychiatry Association

GLOSSARY

Complex morbidity - means a mix of acute and/or chronic conditions and/or functional impairments that affects more than one domain rather than a single organ system disease or isolated impairment.

Examples include:

- chronic or degenerative condition – e.g., neurodegenerative conditions such as Parkinsons, Multiple Sclerosis with depression, or COPD and delirium
- dementia
- non-specific presentation/conditions with different symptomatology in older age.

Service Type

Specialist mental health services for older people / geriatric psychiatry service - a time-limited service providing assessment, treatment, management rehabilitation and consultation advice/liaison for older people with functional or organic mental health conditions.

Community mental health services for older people / geriatric psychiatry services - assessment, treatment, care management and/or rehabilitation provided in a community setting (either the person's own home, workplace or residential care facility or as part of a community facility such as a day centre or a general practice).

Culturally appropriate services - services that are delivered in a holistic way that acknowledges and takes account of the client's cultural, social and spiritual needs as well as their health and disability needs.

Rehabilitation services - rehabilitation services have a primary focus on intervention to reduce functional impairments that limit the independence of older people. Rehabilitation services are focused on the disability dimension and the promotion of personal recovery. They are also characterised by an expectation of substantial improvement over the short to mid-term. Patients treated usually have a relatively stable pattern of clinical symptoms. Emphasis on treatment of the illness component is prevention of relapse.

Service location

The service may be provided in one or more of the following:

- community / domiciliary assessment and rehabilitation teams, including outreach to rural and remote areas
- in a dedicated mental health service for older people unit
- in an acute adult mental health ward
- as part of a geriatric assessment, treatment and rehabilitation unit
- clinics, including outreach to rural and remote areas
- mental health services for older people day hospital
- assessment and treatment beds in private hospitals.

Team defined

Specialist geriatric psychiatry team - specialist meaning dedicated team approaches to mental health for older people / geriatric psychiatry care or team care informed by specialist expertise.

A specialist geriatric psychiatry team is an interdisciplinary team of professionals with specific qualifications and/or expertise in mental health of older people, and in assessment, treatment, management and rehabilitation for older people. In New Zealand, members of the interdisciplinary team may include psychiatrists of older age, medical officers of special scale, nurses, psychologists, physiotherapists, occupational therapists, speech-language therapists, social workers, dietitians and/or pharmacists.

Interdisciplinary team -

A team of health professionals and support staff working collectively with group decision-making and group responsibility for developing optimal treatment and support management plans. This approach facilitates lateral communication between team members, freer exchange of ideas, with the aim of more effective problem solving (DeLisa et al. 1998).

Multidisciplinary team -

A team of health professionals and support staff who need to meet frequently to agree and co-ordinate interventions. The team is typically physician led, with most interaction being between the physician and individual team members and less lateral communication between team members (as in the interdisciplinary team) (DeLisa et al. 1998).

Case management - a process of needs identification and health care service coordination and delivery. Includes assessment, implementation and monitoring of health outcomes.

Geriatric symptom complexes - presentation of disease in older people where classical symptoms are masked. Patients may present with common symptom complexes including unexplained collapse, dizzy spells, falls, instability, incontinence, delirium and febrile illness with cause unknown.

Continuing care - long-term placement appropriate to needs – e.g., sheltered accommodation, residential home, nursing home and long stay care wards.

Disability - a restriction or lack of ability (resulting from an impairment) to perform an activity in the manner or within the range considered normal for a human being.

Evidence-based practice - clinical decision-making based on a systematic review of the scientific evidence of the risks, benefits and costs of alternative forms of diagnosis or treatment.

Functional mental disorders - include mood disorders and psychoses such as depression, anxiety, bipolar disorder, and schizophrenia.

Handicap - a disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfillment of a role that is normal (depending on age, sex, social and cultural factors) for that individual. Handicap describes the social and economic roles of impaired or disabled people that place them at a disadvantage compared to other people. These disadvantages are brought about through the interaction of the person with specific environments and cultures.

Impairment - any loss or abnormality of psychological or anatomical structure or function. Impairments are disturbances at the level of the organ which includes defects or loss of limb, organ or other body structure, as well as defects or loss of mental function.

Managed *care (including managed care organisations (MCOs), health management organisations HMOs)* - a system of private budget holding entities who manage the risk for individuals' health care.

With a global government budget, MCOs usually either fund and provide direct services or contract for provision of services.

Needs related model of service provision - referral to service based on individual patient needs – e.g., elderly with single pathology illness referred to general medicine, elderly patients with common symptom complexes (see above) or specified conditions referred to geriatric care.

Organic mental disorders - include dementia, delirium and personality change or delusional states induced by physical disorders.

Patient centred care - planning, treatment and management involves patient, family and carers, with advocacy for all three groups and goals related to patient outcomes.

Protocols - documented standard practice procedures.

Structure of report

The review on geriatric psychiatry services is divided into three sections:

- The first section contains a summary overview and general conclusions.
- The second section is a critical appraisal and write-up of original primary and secondary research work addressing the efficacy of specialist geriatric psychiatry services on the health and service utilisation for older people compared to services provided by staff or teams who do not have specialist expertise in caring for and treating older people with a mental health condition – e.g., a team with no specialist in geriatric psychiatry or nurse with geriatric psychiatry expertise. This section also provides detailed evidence tables, which present each appraised study's methods, results, limitations, and authors' conclusions.
- The third section provides a descriptive outline of the key recommendations from published specialist geriatric service protocols and guidelines and specified expert opinion.

SECTION 1

This section provides background and context for the review on the effectiveness of specialist geriatric psychiatry services for older people.

Background

Most older people are fit and healthy. A minority are frail and vulnerable and require high levels of care and disability support. A small number of older people have had a functional psychiatric condition for many years; others develop a functional or organic mental disorder in older age. In New Zealand, the majority of older people with organic mental disorders, particularly dementia, are treated by specialist geriatric services, but geriatric psychiatry services contribute to managing challenging behaviour in these client groups. Many older people with a mental disorder also have a co-morbid or co-existing physical illness or disability, indicating that mental health services for older people and geriatric medicine need to be closely aligned with ready cross consultation.

Specialist geriatric psychiatry services include assessment, treatment, rehabilitation and clinical advisory/liaison services provided by one or more members of a multidisciplinary team. In New Zealand, members of the interdisciplinary team may include psychiatrists of older age (geriatric psychiatrists), medical officers of special scale (MOSS), nurses, clinical psychologists, physiotherapists, occupational therapists, speech-language therapists, social workers, dietitians and pharmacists.

Geriatric psychiatry assessment, treatment and rehabilitation services for older people were traditionally associated with psychiatric hospitals, but with the closure of long-stay psychiatric hospitals there has been a major shift of focus to community-based services and, to a lesser extent, a closer functional relationship with geriatric services. Under the Regional Health Authorities, the Southern and Central regions moved geriatric psychiatry services closer to the geriatric services and both are now funded by the Ministry of Health's Disability Services Directorate (DSD). In the Northern and Midland regions, they remained under the ambit of the mental health services, and are funded through mental health (Melding 1999) and are called mental health services for older people.

While the majority of geriatric psychiatry services are provided by community geriatric psychiatry or mental health for older people teams, these may be supported by:

- inpatient beds, which may be in a dedicated geriatric psychiatry unit, acute mental health wards, or beds in a geriatric or generic assessment, treatment and rehabilitation (AT&R) unit
- outpatient services and day hospital
- beds in private hospitals (including treatment and extended care).

The main client groups are older people:

- with a functional mental disorder (including mood disorders, and psychoses such as depression, anxiety, bipolar disorders and schizophrenia), with or without physical comorbidities associated with ageing
- exhibiting challenging behaviour as a result of an organic mental disorder (such as dementia, delirium, and personality changes or delusional states induced by physical disorders).

During the history of the development of geriatric and geriatric psychiatry services, the main client group has been Päkeha aged 75 years and over. Smaller population size and higher mortality rates at earlier ages have meant that few Mäori or Pacific peoples have accessed either service. A combination of increasing longevity and earlier onset of conditions generally associated with ageing is resulting in

more Mäori and Pacific people needing specialist geriatric and geriatric psychiatry services. An example of this is the number of Mäori presenting with vascular dementia. Over time, the population aged 65 years and over is expected to become more ethnically diverse as increasing numbers of people from a variety of European and Asian backgrounds reach older age. There is also a small, but growing group of people with intellectual disability requiring these services.

There are pressures within the health and disability sectors (on staff recruitment and retention, quality, critical mass and finance) that the current fragmented assessment treatment and rehabilitation service configuration for older people are unable to meet. These pressures will increase as the number of older people increases over the next twenty years. There are various local initiatives underway to address these pressures and integrate services, but as yet, no concerted national approach.

OBJECTIVE

To identify and appraise international evidence for the effectiveness of geriatric psychiatry services.

REVIEW SCOPE

Studies were included for review if they reported on geriatric psychiatry services with a focus on evidence for the effectiveness of service design and delivery outcomes rather than clinical treatment protocols, although it is recognised that both have an impact on outcomes for older people. The key components of the service reviewed were assessment, treatment, rehabilitation and clinical advice/ liaison including links with other related services including primary and community health care, disability support services (both home-based and residential care) and hospital-based services.

The search was limited to full reports published in English through to March 2003. Full details of inclusion and exclusion criteria are provided in **Section 2** of the report.

SECTION 2

This section provides a critical appraisal of key primary and secondary literature.

Methodology

SELECTION CRITERIA

Study inclusion criteria

Publication type

Studies published up until May 2003 inclusive, in English, including primary (original) research (published as full original articles) and secondary research (systematic reviews and meta-analyses) appearing in the published literature.

Context

Studies which identify the key components of specialist health services for older people that have the most impact on the outcomes of interest. These include:

- service design features (range of services, location, access and exit criteria, relationship to other health and social support services, degree of integration/coordination with other health and disability support services for older people)
- staff competencies.

Studies that evaluate or describe specialist geriatric psychiatry services that provide at least one of the following:

- assessment
- treatment and/or management
- rehabilitation
- advice to and/or liaison with other health and social support service providers.

These may also provide:

- information to older people to enable them to make informed choices about treatment and care options
- advocacy for older people's health and social support needs
- discharge/transfer planning.

Study comparators: any of "conventional care", "usual care" defined as non-specialist geriatric psychiatry services, care by adult mental health services or by geriatric services without geriatric psychiatry input.

Study population

The study population was people aged 65 years and over with mental health conditions (both long-term and acquired in older age). This included functional mental disorders and challenging behaviour associated with organic mental disorders whom:

- require assessment, treatment or monitoring of their condition
- have unclear diagnosis, atypical presentation of illness or sudden unexplained decline in cognitive abilities.

Outcomes

Studies where the outcomes considered included one or more of the following:

- functional status
- health status
- psychosocial wellbeing
- client satisfaction
- cultural appropriateness
- impact on family/whänau carer(s)
- costs (relevant to studies conducted in Commonwealth countries with similarities in health systems)
- likelihood of remaining/returning home post intervention
- admission to residential care
- death
- for hospitalised clients: hospital length of stay.

Study design

Peer reviewed studies were considered for this section of the review if they used one of the following study designs:

- systematic review or meta-analysis
- randomised, quasi-randomised, or non-randomised controlled trials
- analytic studies (cohort and case-control designs)
- quasi-experimental studies (before/after design)
- descriptive studies and descriptive analytic studies (case series, cross-sectional, longitudinal designs).

Levels of evidence are based on the notion that experimental study designs minimise or eliminate bias more effectively than non-experimental designs. However, it is recognised that lower level evidence may be more useful in their descriptions of geriatric psychiatry service design and delivery and represent the best available evidence for this area of older persons health.

Note: Any identified unpublished or 'grey' literature specific to New Zealand was included where this met selection criteria and other higher-level evidence was unavailable.

Study exclusion criteria

Research papers were excluded if they were:

- studies focusing on long-term residential care without reference to ongoing treatment for a mental health condition
- studies with inadequate description of methodology and/or results, significant error or methodological problems
- systematic reviews and meta-analysis with inadequate search methodologies – i.e., use of a single search database
- narrative reviews, expert opinion, letters to the editor, comments, editorials, conference proceedings, abstract only, books and book chapters. Such material was not included in the critical appraisal section but key material was included in **Section 3** of the review looking at guidelines, protocols and specified expert opinion.

SEARCH STRATEGY

A systematic method of literature searching and selection was employed in the preparation of this review.

Searches were limited to English language material with no restriction by date. The searches were completed on 9 May 2003 by an information specialist.

Principal sources of information

The following databases were searched using the search strategies outlined in **Appendix 1a (for Section 2)** and **Appendix 1b (for Section 3)**. Complete search strategies are specified in **Appendix 2a (for Section 2)** and **Appendix 2b (for Section 3)**.

Bibliographic databases

- Cinahl
- Embase
- Index New Zealand
- Medline
- PsychInfo
- Current Contents
- Science Citation Index
- Social Science Citation Index

Review databases

- Best Evidence
- Cochrane Library
- Database of Abstracts of Reviews of Effectiveness
- Health Technology Assessment database
- NHS Economic Evaluation database

Search terms used in Section 2

Index terms from Medline (MeSH terms)

Geriatric psychiatry, psychogeriatric assessment, health services for the aged, exp dementia, anxiety, depression, delirium, delirium dementia amnestic cognitive disorders, exp substance related disorders, exp schizophrenia and disorders with psychotic features, paranoid disorders, cognition disorders, memory disorders, depressive disorder, controlled clinical trials, randomized controlled trials, program evaluation, comparative study, follow-up studies, meta-analysis, exp evaluation studies, aged, health services, mental health services, models-organizational, health services accessibility, health services administration, centralized hospital services, community health services, community mental health services, health services needs and demand, rural mental health services, psychiatry of old age, psychogeriatric services, BPSD.

Index terms from Embase

Gerontopsychiatry, *mental health service, elderly care, geriatric care, home for the aged, exp *health service, *community care, health care utilization, health care policy, health care delivery, institutional care, deinstitutionalization, institutionalization, *home care, exp *hospital care, exp *long term care, exp *primary health care, residential care, rural area, urban area, urban rural difference, *Depression, *anxiety, exp *Dementia, exp *Delirium, exp *Addiction, *Schizophrenia, *Paranoid Psychosis.

- the above index terms were used as keywords in databases where they were not available and in those databases without controlled vocabulary
- additional keywords (not standard index terms) were used: elder*, old$, aged, geritric*, (health adj3 (polic* or service* or program*)), metaanaly*, meta-analy*, (systematic$ adj3 (review$ or overview$))
- searches for the publication the types editorial and letter were used to filter the Medline, Embase and Cinahl database search results
- the Medline search produced a large data set of over 1,600 references, this set was filtered to retrieve meta-analyses, randomised controlled trials, systematic reviews, and reviews.

Search terms used in Section 3

Index terms from Medline (MeSH terms)

Health Services for the Aged, exp Societies, Medical, organizational policy, guidelines, practice guidelines, Health Planning Guidelines, Health Planning, Interprofessional Relations.

Index terms from Embase

Exp *elderly care, exp *health care delivery, *health care planning, *health care policy, medical society, exp *practice guideline, health service.

Additional index terms:

- the above index terms were used as keywords in databases where they were not available and in those databases without controlled vocabulary
- additional keyword searches (not standard index terms): (polic* or statement*), ((health adj2 service*) adj3 (elderly or aged or geriatric)), position statement*, (service* adj3 (elderly or aged or geriatric)).

STUDY SELECTION

Studies were selected for appraisal using a two-stage process. Initially, the titles and abstracts identified from the search strategy were scanned and excluded where appropriate. The full text articles were retrieved for the remaining studies and these were appraised if they fulfilled the study selection criteria outlined above.

There were 777 articles identified by the search strategy. From these, 239 full text articles were obtained from the search titles and abstracts. Of the full-text articles retrieved 140 articles did not fulfil the inclusion criteria and are presented in **Appendices 3a** or **3b** and 68 primary/secondary research articles were appraised and are included in the critical appraisal section; 31 secondary research articles were descriptively outlined and included in **Appendix 4a** or **4b**. Cited publications including those providing background material are presented in the **References**.

APPRAISAL OF STUDIES

Evidence tables

Evidence tables for primary studies present key information summaries employing column headings as described below:

- **Study citation, source and design** - including authors, year published, country of origin, study design, sample size, inclusion and exclusion criteria for the study and characteristics and level of evidence.
- **Study location** - acute ward, unit (geriatric psychiatry, geriatric or generic AT & R, GEM), outpatients, day hospital, outreach clinics (e.g., in drop-in centres, general practice centres, super clinics), client's own home.
- **Within each location** - type of staffing, size of operation (number of beds or clients seen), client group (who is included and excluded and why), aims of the service (e.g., to increase independence, delay institutionalisation or admission to residential care, prompt discharge from acute care).
- **Study interventions** - assessment, rehabilitation, training, education, treatment (pharmaceutical), counseling, length of stay and comparator.
- **Outcomes** - including statistically tested comparisons (statistical precision) of outcomes and reporting of relevant statistical data and authors' conclusions.
- **Comments and conclusions** - including the key study limitations such as internal validity issues arising from the study appraisal.

Systematic reviews and meta-analyses were described and critiqued in terms of their search strategy, inclusion/exclusion criteria, data synthesis and interpretation.

APPRAISAL AND LEVELS OF EVIDENCE

Articles were formally appraised using a modified schedule of the Cochrane Effective Practice and Organisation of Care Review Group (EPOC) of the Cochrane Collaboration and in-house checklists developed by NZHTA for the appraisal of descriptive studies. Summaries of appraisal results are presented in both text and tabular form, and conclusions drawn from the study design and any limitations noted.

The evidence presented in the selected research studies was classified using the dimensions of evidence defined by the National Health and Medical Research Council (NHMRC, 2000). The designations of the levels of evidence are shown in **Table 1, page 10**.

Table 1. Designations of levels of evidence*

Level of evidence	Study design
I	Evidence obtained from a systematic review of all relevant randomised controlled trials
II	Evidence obtained from at least one properly-designed randomised controlled trial
III-1	Evidence obtained from well-designed pseudorandomised controlled trials (alternate allocation or some other method)
III-2	Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case-control studies, or interrupted time series with a control group
III-3	Evidence obtained from comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group
IV	Evidence obtained from descriptive studies – e.g., case series, either post-test or pre-test/post-test designs

**Modified from NHMRC, 2000.*

LIMITATIONS OF THE REVIEW

This review has not used a structured approach to review the literature, but is an appraisal and description of key literature. It is therefore not as comprehensive as a full systematic review. However, as with a systematic review, this appraisal is limited by the quality of the studies included in the review and the review's methodology. The overall descriptions are general inferences of the effectiveness of the geriatric psychiatry service delivery models. Only what was available from the appraised papers is reported. The degree of information provided on the service delivery models varied considerably. More information may have been available but authors were not contacted to provide it.

The review is broad and examines literature from across a range of hospital and community settings, with significant heterogeneity in study assessment tools/measures and outcomes and also a wide range of interventions and patient populations. Meta-analytic work in this area is limited due to problems with study measurement/outcome heterogeneity.

A number of conceptual difficulties with undertaking a review in service delivery and organisation were identified as in other reviews (Parker et al. 1999). These included differing terminology and descriptions of the stages and models of care in the literature, difficulties with defining a comprehensive search strategy with non-condition specific searches, and differences in recovery. Most literature (through research study design) did not specifically identify what aspect(s) of a service delivery model were linked to efficacy and improved outcomes.

This review has been limited by the restriction to English language studies. Restriction by language may result in study bias, but the direction of this bias cannot be determined. In addition, the review has been limited to the published academic literature, and has not appraised unpublished work. Restriction to the published literature is likely to lead to bias since the unpublished literature tends to consist of studies not identifying a significant result.

The studies were initially selected by examining the abstracts identified in the searches. Therefore, it is possible that some studies were inappropriately excluded prior to examination of the full text article.

All studies included in this review were conducted outside New Zealand, and therefore, their generalisability to the New Zealand population and context may be limited. This significant limitation should be taken into account when applying the results of this review to developing the service delivery framework which is based entirely upon international literature.

This review was confined to an examination of the effectiveness of geriatric psychiatry services and did not consider their acceptability, or any ethical, economic or legal considerations associated with these services.

Although two researchers appraised the articles included in separate sections of this review, they did not cross validate the data extraction and appraisal process because of the very limited time frame allowed.

The review scope was developed with the assistance of Ministry of Health staff and members of the Technical Advisory Group (TAG). This group had the goal of providing information to inform the development of a geriatric psychiatry service delivery framework.

This review was conducted over a limited timeframe (April 2003 to July 2003 and November 2003 to December 2003).

For a detailed description of interventions and evaluation methods, and results used in the studies appraised, the reader is referred to the original papers cited.

Results

SUMMARY OF FINDINGS FROM LITERATURE APPRAISAL

Full details of the 68 papers appraised, including methods, key results, limitations and conclusions, are provided in following evidence tables, categorised according to service setting.

- **Table 2:** community-based geriatric psychiatry services.
- **Table 3:** services offered in primary care settings.
- **Tables 4a-4c:** services offered in outpatient settings.
- **Tables 5a-5b:** services offered in inpatient settings.
- **Table 6:** services offered in long-term residential settings.
- **Table 7:** services offered in rural settings.
- **Table 8:** services offered to minority/ethnic groups.
- **Table 9:** services offered across settings.

Studies are presented in order of quality (Level I to IV) and reverse chronological order of publication within each table.

Discussion on Table 2: Community-based geriatric psychiatry services

Fourteen studies utilised comparison (before/after and concurrent) or control groups, comparing programme interventions with routine or usual care, or non-treatment **(see Table 2, pages 25-40)**. Interventions studied in community settings included systematic, comprehensive in-home support by multi-disciplinary geriatric psychiatry outreach teams, shared care, home hospitalisation, and intensive case management. One study reviewed conducted a meta-analysis of community-based services for depressed older people. Three other descriptive studies without comparison groups (level IV) provided useful geriatric psychiatry service descriptions and audit based service delivery data but were limited in their ability to draw conclusions about the effectiveness of such services. Overall, the interventions studied were found to result in statistically significant improvements in participants' mental health condition and functioning, compared with 'usual' or 'routine care'.

Among the community-based interventions, seven focused on older individuals with dementia. Eloniemi-Sulkava et al. (2001) found that a comprehensive support intervention programme implemented by a dementia family care coordinator, resulted in a lower rate of institutionalisation initially, although this effect decreased with time. Severely demented subjects appeared to benefit most from this intervention, delaying hospitalisation for a longer period. A similar effect was found as a result of intensive case management with dementia sufferers in the UK (Challis et al. 2002), accompanied by significant improvements in social contacts, aspects of daily living, and decreased carer stress. Aimonino et al. (2001) found home hospitalisation of patients with advanced dementia also resulted in lower levels of caregiver stress, reduced use of antipsychotic drugs, and delayed admission to a nursing home compared with a similar sample cared for in a general medical ward. Looking at older people residing in integrated hostels, Rosewarne et al. (1997) reported improved quality of life in terms of social contact with relatives, lower reported levels of depressive symptoms and also significant delay of nursing home admission for participants in a specific dementia programme. Conversely, O'Connor et al. (1991) found that in those with moderate to severe dementia living alone were admitted to long-term care at significantly higher rates after early intervention, although the authors suggested that this may have been due to earlier identification of risk for

institutionalisation rather than an intervention effect as such. These outcomes were positive in terms of lessening the burden on caregivers and the better care through institutionalisation of dementing patients. The remaining paper described services for dementia patients, without comparison with usual care. Lefroy et al. (1997) concluded from considering client records that client situations were improved as a result of outreach diagnostic and treatment services and a special dementia unit respectively. A further urban/rural study (Bedford, 1996) contrasted the characteristics of multi-disciplinary geriatric psychiatry teams and patient outcomes. Though outcomes were similar, geographic inequality and unmet needs through lack of services were apparent.

Six studies considered interventions for depression in older people. The results of these studies were more substantial, based on four blinded RCT research designs, enabling better control of study bias and outcome assessment. In testing a 'shared care' intervention, Llewellyn-Jones et al. (1999) noted that the intervention non-nursing home participant group were more likely than the 'usual care' group to be rated as less depressed at follow-up. Waterreus et al. (1994) found that a community psychiatric nurse-led intervention resulted in a considerable decrease in depression scores in significantly more individuals than in a control group. Similarly, Banerjee et al. (1996) found that psychiatric treatment provided by a geriatric psychiatry team was substantially more effective than general practitioner care alone in treating depression in older participants. These findings are consistent with a meta-analysis conducted later by Cuijpers (1998), in which a large effect size (0.77) was found across studies of psychological treatments for community-based depressed older people. Considering follow-up data, these effects were shown to be stable for one to six months. Regression analysis found cognitive behavioural therapies to result in larger effect sizes. One other study showed improvements in depressed community dwelling older persons (Mutch et al. 2001) in terms of service initiatives (clinician education, standardised assessment tools, policy/processes and coordinator) leading to improved assessment and integration of care without a corresponding service expansion. One study (Cole et al. 1995) did not show clinical improvement comparing home with outpatient clinic assessment but the small sample size may have limited the ability to detect real differences in outcomes.

Although focused on community-dwelling older population samples with a range of mental health conditions, five other studies with multi-faceted and multi-disciplinary teams examined a range of patient outcomes. These included physical functioning, various psychometric measures for assessment of mental health state, service feasibility and utilisation, and diagnostic agreement. A study by Rabins et al. (2000) was a randomised trial of a geriatric psychiatry team assessment and treatment programme based in public housing sites (PATCH), that found psychiatric cases at intervention sites to have significantly lower depression and psychiatric/behavioural scale scores two years on from baseline. Two studies focused on referral-based in-home outreach programmes in the community with multi-disciplinary teams performing assessment and treatment (Seidal et al. 1992; Kohn, 2002). These services showed positive outcomes with clinical improvement in patients' mental health. One other study looked at a community GateKeeper (GK) model (Florio et al. 1998) where specially designated corporate employees associated with the community. For example, public housing personnel, identified persons at greater risk and who may not have come to the attention of mental health services for referral and follow-up by a inter-disciplinary team through case management. This did not result in higher service utilisation. Collighan (1993) showed high agreement between diagnostic assessments performed by multi-disciplinary teams and specialist psychiatric researchers. The descriptive design of these studies was a limiting factor in terms of minimising bias in outcomes and adequately determining the effectiveness of community-based multi-disciplinary teams.

Summary

Overall, in terms of community-based interventions for older people with depression and dementia, and also older populations with a range of other mental health conditions, moderate to large intervention effect sizes have been found in the improvement of clinical symptoms, social and adaptive functioning, and delay of institutionalisation in participants of the intervention group compared to those in 'usual care' groups. The successful interventions were generally characterised by comprehensive 'packaging' or 'bundling' of assessment and treatment services, provided by a hospital-based multidisciplinary outreach team.

Discussion on Table 3: Services offered in primary care settings

The two studies reviewed with interventions based in primary care settings compared these with control conditions (usual care) **(see Table 3, pages 41-42)**. Both RCTs were focused on older people with depression. Arthur et al. (2002) compared depression outcomes for general practice patients receiving a mental health assessment by a member of the Community Mental Health Team with usual care. The intervention group was found to be less likely to achieve an improved Geriatric Depression Scale score than the control group (when controlling for baseline differences), although there was significant contamination between study arms, with potential effect on study outcomes. Depression in older primary care patients was also examined by Unutzer et al. (2001), who found that a collaborative care intervention (pharmacotherapy and/or problem-solving therapy) coordinated by a depression clinical specialist had no significant impact.

Summary

From the two studies reviewed, it would appear that interventions based in primary care settings are not particularly effective in producing significant outcomes. Neither a mental health assessment by a CMHT member, nor a combined pharmacotherapy-problem-solving therapy approach coordinated by a specialist were found to reduce depressive symptoms in older primary care patients. These outcomes do not show these specific two geriatric psychiatry interventions delivered in a primary care setting to be particularly effective, but overall conclusions are limited by a lack of relevant material in these settings.

Discussion on Tables 4a-4c: Services offered in outpatient settings

Seven studies of outpatient-based services were reviewed **(see Tables 4a-4c, pages 43-47)**. These were Level III-2 and Level IV evidence, with two using comparison groups and one a before/after design. Despite the lack of focus on 'interventions', other studies were also reviewed primarily for their description of service design features in these settings.

Three of the included studies were conducted in memory clinic settings **(see Table 4a, pages 43-44)**. One comparative study examined referrals to a memory clinic and an old age psychiatry team. Luce et al. (2001) found that memory clinic patients were on average younger with lower levels of cognitive impairment and a wider range of diagnoses, indicating potential for greater benefit as a result of early intervention. This study did not, however, assess treatment outcomes to test this hypothesis. In a qualitative observational study of a memory clinic, patients, relatives and GPs reported satisfaction with diagnostic information and assessment services provided, although they expressed dissatisfaction with the provision of information about care support and behaviour management unit (van Hout et al. 2001). Another study by van der Cammen et al. (1987) found that there was some benefit for referrals to a dementia clinic in terms of identifying early signs of dementia and service utilisation. However, the study was limited in its design and the outcome measures used to measure the actual effectiveness of the clinic.

Three further studies described day hospitals/centres for geriatric psychiatry outpatients **(see Table 4b, pages 45-46)**. Diesfeldt (1992) did not find marked outcomes from time spent in a geriatric psychiatry day centre after five-year follow-up. Although 23 percent of day centre patients remained at home after five years, this was found to be more a result of other factors. Receiving 'indispensable instrumental assistance' from adult children and severity of cognitive impairment influenced the risk of institutionalisation in the first year after admission to day care. Boyle et al. (1997) found this mode of service effective in treating depression. However, this study was limited through bias resulting from a small convenience sample. The study by Plotkin et al. (1993) showed some clinical improvement in patients but was limited due to patient selection bias and data abstraction methods.

The remaining study presented findings from a descriptive study of a geriatric assessment unit within an outpatient clinic which were somewhat consistent with those of memory clinics **(see Table 4c, page 47)**. Gerritsen et al. (1995) reported the contribution of the outpatient service to early detection of disease, with the large proportion of patients referred at an early stage of illness. GPs also reported finding team assessment highly valuable in a practical sense, increasing their own geriatric psychiatry

competence, while informal carers reported a decrease in care recipient behavioural problems and improvements in self-efficacy.

Summary

Evidence for the effectiveness of interventions in outpatient settings for older people with mental illness is somewhat lacking. Although improvements were observed and noted in some of these studies, these were not necessarily solely attributed to the outpatient service, but rather other factors influencing disease progression and likelihood of institutionalisation. There was some indication that the value of outpatient services – e.g., memory clinics, is in providing opportunities for early detection and intervention, perhaps enabling increased clinical benefit in terms of preventing disease progression, but this was not tested in any of the reviewed studies.

Discussion on Tables 5a-5b: Services offered in inpatient settings (inpatient geriatric psychiatry and consultation liaison (CL) services)

Seventeen studies in inpatient settings were reviewed that fulfilled the inclusion criteria **(see Tables 5a and 5b, pages 48-58)**. There was one systematic review (Level 1) and three RCTs (Level II) but most of the studies (9) were prospective or retrospective studies without comparison/control groups, or descriptive studies or surveys (Level IV). There were a further three comparative and one before/after study (Level III). As not all the studies considered interventions compared with usual or routine care, there were difficulties making inferences about service effectiveness over and above usual care. In addition, various confounding factors affecting patient outcomes were not considered. Of the studies that did have comparison groups (9), the interventions included multi-disciplinary team inpatient approaches, consultation liaison, multi-factorial programme interventions, geriatric psychiatry liaison interventions, and a geriatric psychiatry biopsychosocial evaluation and treatment programme. The service interventions outcomes measured included likelihood of hospitalisation, length of hospital stay, general health, anxiety, depression, cognitive function, behaviour test scores, return home, cost-effectiveness, and use of psychotropic medication.

Consultation liaison

Six studies dealt with consultation liaison including one systematic review, three RCTs and two comparative studies **(Table 5a, pages 48-52)**. The systematic review in this section (Cole, 1991) included 15 trials and divided these into the service modes of geriatric hospital units, hospital geriatric consultation services and external services. Though limited in that the subjects of the included studies were a mix of general medical geriatric patients as well as geriatric psychiatric patients, results showed that external services and some geriatric hospital units showed the greatest effectiveness in terms of significantly positive outcomes.

For older patients admitted to a general medical ward, an RCT (Level II) evaluating a multidisciplinary geriatric psychiatry liaison intervention was found to contribute to improvements in physical functioning (ADLs, mobility), and also reductions in length of hospital stay and likelihood of nursing home admission (Slaets et al. 1997). However, a RCT of a similar intervention was tested with older veterans admitted to acute medical or surgical service in a Veterans Affairs Medical Centre (Kominski et al. 2001). With a more restricted study sample than Slaets et al., the findings were quite different. The biopsychosocial evaluation and treatment programme did not reduce the likelihood of hospitalisation post-discharge, nor were there any differences between intervention and usual care patients in terms of alcohol abuse, anxiety or depression scores at 12-month follow-up. Significant reductions in inpatient costs were offset by increased use of outpatient services.

Another RCT by Cole et al. (1991) on hospital geriatric psychiatric consultation services did not find this mode of service very effective on patient outcomes, concluding that better targeting of patients would provide the greatest benefit to outcomes. While the study by Anderson et al. (1991) using changes in referral patterns as a proxy measure of the impact of consultation service improvements, concluded that the educational effect of geriatric psychiatry liaison improved response to the needs of patients, although these conclusions are limited as many confounding issues related to referrals were not controlled for.

The study by Swanwick and Lee (1994) compared two different service models within two units: a 'liaison' model and a 'consultation' model. Outcomes were measured in terms of diagnoses, suggested interventions and referral rates. Although there were significant differences between the patients of the two units in terms of demographic characteristics, diagnoses and suggested interventions were not significantly different between the two models. Referral rate was not increased by greater degree of contact between the psychiatric and other specialties, however, data collected suggested that the liaison model improved diagnostic accuracy by referring doctors.

Inpatient general psychiatry units

Eleven studies were included in this section **(Table 5b, pages 53-58)**. All but three of these studies were retrospective/descriptive in design (Level IV). One study was a comparative study (level III-2), one a before/after design (level III-3) and the other a prospective descriptive study (III-3).

Six of the included studies looked at service interventions for general psychiatric admissions of geriatric patients to specialist geriatric psychiatry units. and the limitations inherent in these study designs should be considered. One study with a before/after design (De Leo et al. 1989) looked at the effect on geriatric patient outcomes after the establishment of a new psychiatric unit with a multi-disciplinary team and concluded that the service provided a managed effective response to the complex needs of patients. Similarly, two studies by Riordan and Mockler (1996) and Porello et al. (1995) with a multi-disciplinary assessment, treatment and management care programme showed through the use of various psychometric scales for outcome assessment, changes in patient symptoms and problem resolution. A study by Hughes and Medina-Walpole (2000), similar to that by Holm et al. (1999), was set in an inpatient geriatric behaviour unit with interventions directed at behavioural dysfunction. Hughes and Medina-Walpole observed dramatic improvements in behaviour though improvements in cognitive and functional conditions were much less. Two other studies (Moss et al. 1995; Conwell et al. 1989) looked at aspects of the effectiveness of interventions for patients admitted to general hospital acute psychiatric units and indicate improvements in psychometric scale ratings measuring patient outcomes and also improved diagnosis and assessment were shown.

The other five studies addressed specific conditions. Two studies looked at programme interventions for geriatric inpatients with behavioural dysfunction for dementing illness/Alzhiemers disease. Both studies involved multidisciplinary team delivery of a comprehensive assessment and treatment service, combining pharmacological and non-pharmacological interventions with behavioural, environmental and psychological components. The study by Holm et al. (1999) noted improvements in global functioning and dramatic improvement in behaviour but only modest improvements in cognitive and functional conditions while the study by Zubenko et al. (1994) reported improvements in patients enabling them to return to their own homes after short-term hospitalisation.

The other three studies looked at geriatric patients suffering from depression. The largest study by Norquist et al. (1995) with 2,476 patients, compared the quality of care received in psychiatric units with that of general medical wards. The quality of care received was better in psychiatric units for the psychological aspects of depression, but general medical care was better in general medical wards. In another study (Zubenko et al. 1994), a multi-disciplinary inpatient approach to patients with major or complicated depression was shown to be effective in a psychiatric inpatient unit. Finally, one other study (Craig et al. 2000) was a qualitative case study which compared a split and combined psychiatric ward. Functionally impaired geriatric patients appeared to greatly benefit in a split ward when separated from cognitively impaired geriatric patients.

Summary

The findings from the reviewed studies of geriatric psychiatry services in inpatient settings are generally positive for specialist general psychiatry units, showing an overall effectiveness for these services. Multidisciplinary geriatric psychiatry team interventions in these settings have shown the greatest success in terms of the variety of patient outcomes measured. Behaviour management programmes, especially within specialist units delivered by a multidisciplinary team show most success in treating behavioural dysfunction and specific conditions such as depression and dementia. The study designs for the geriatric psychiatry unit inpatient literature were mostly prospective or retrospective studies with or without comparison/control groups or descriptive studies and surveys (Level IV) and the limitations of this type of material should be considered in when interpreting these results. Studies

dealing with consultation liaison in inpatient settings show much more mixed results and are based on better experimental study designs. Based on the literature reviewed, the evidence for the effectiveness of geriatric liaison interventions was not substantial.

Discussion on Table 6: Services offered in long-term residential settings

Fourteen eligible studies were found that focused on geriatric psychiatry services conducted in long-term residential settings **(see Table 6, pages 59-69)**. Seven of the studies included an intervention while the others described or compared models of service delivery. Interventions included a stimulation-retreat intervention, inter-disciplinary and multi-disciplinary teams, geriatric psychiatry case management and consultation, a specially developed guideline governed intervention for dementia patients, and emotion-oriented care. Eight studies utilised some type of comparison group, primarily Level II or Level III evidence (four RCTs and three comparative studies) and a quasi-experimental study (Level IV). One Level IV literature review was included for its summary of research in the area. Outcomes measured included quality of life, level of behavioural dysfunction, cognitive and ADL functioning, and time spent in inpatient facilities.

Eight of the included studies involved individuals with dementia. Of these, four studies with comparison groups (all RCTs, Level II) evaluated various specific interventions for residents suffering from dementia and generally showed positive results in terms of outcomes that were evaluated. The exception was the study by Lawton et al. (1998), which showed no effect. Brodaty et al. (2003a) tested two interventions against standard care; geriatric psychiatry case management and geriatric psychiatry consultation, and found no differences in outcomes between intervention and control groups. Irrespective of intervention, nursing home residents with dementia comorbid with depression and/or psychosis seemed to improve. A study by Rovner et al. (1996) concluded that a guideline based dementia care programme in a nursing home reduced the prevalence of behavioural disorders and drug and physical restraint usage compared to usual care. A study by Opie et al. (2002) with a multi-faceted team intervention for nursing home residents showed improvements in behaviour for both intervention and control groups but also a strong association of team consultancies with the effectiveness of the intervention group. Lawton et al. (1998) developed and tested a comprehensive intervention that consisted of staff training, interdisciplinary care planning, activity programming and family support centred around a stimulation-retreat model of care. At 12-month follow-up, the intervention was found to have no effect on the functional deterioration of the participants, nor negative behaviours and states, despite an increase in 'quality time' vested in patients by staff.

Four other studies looked at services for older persons in long-term residential care suffering from dementia using descriptive study designs (Level IV). These showed positive impacts on some patient outcome measures evaluated, however these were not uniform across all outcomes. In a quasi-experimental study by Skea and Lindsay (1996), though showing some changes associated with a new service initiative – e.g., staff-patient interactions, the characteristics of the comparison groups used were quite different, limiting the validity of the conclusions. A study by Bellelli et al. (1998) showed some overall improvements in cognitive and functional status of patients from Special Care Units (SCUs). With approaches to care similar to that of *cantou* (emphasis on independence and active participation with provision of communal non-medical care), two domuses, one for dementia patients, and one for long-stay mental hospital patients were evaluated (Dean et al. 1993). Twelve months after baseline assessment at other facilities prior to admission to the domuses, improvements in cognitive function, self-care skills and communication were found for patients in both units. A description of services offered in a special care dementia unit (SCU) and comparison with integrated care facilities called into question the value of such a specialist service (Chappell and Reid 2000). There was a greater effect on patient cognitive function, social skills and expressive language than any 'best practice' service provided. Chappell and Reid also found that many non-SCUs were implementing similar quality of care to SCUs.

Four studies investigated outcomes of geriatric psychiatry services provided to residents with a range of mental health related conditions in integrated long-term residential facilities. Overall, there was a positive response to these initiatives but as with other studies in long-term residential care settings, not all outcomes evaluated responded to these. Ballard et al. (2002) implemented a psychiatric liaison intervention delivered by a psychiatric nurse, with the primary aim of reducing neuroleptic drug use. Psychological interventions were utilised, and a psychiatric review conducted where necessary.

Consequently, neuroleptic drug use was reduced in the liaison homes, significantly fewer GP contacts were made, and intervention participants also experienced less decline in expressive language function than those receiving usual clinical services. Tourigny-Rivard et al. (1987) provided a qualitative assessment showing improved resident quality of life from improved staff professional development through consultative input. An inter-disciplinary Mental Health Consultation Team (MHCT) decreased demands for specialist consultative services and improved the efficiency of mental health services (Joseph et al. 1995). A specialist psychiatry clinic within an Israeli old age home yielded unimpressive results (Swartz et al. 1999). A significant proportion of participants had died, been admitted to higher level nursing care institutions, or failed to continue treatment and few patients (23%) at three-year follow-up had achieved maintenance or remission of their psychiatric conditions.

Looking at outcomes other than condition-related or clinical progress, Tang et al. (2001) trialled a telepsychiatry intervention with patients of a 'care and attention' home receiving psychiatric treatment. Staff and patients were asked to rate their satisfaction with the intervention. Although significant rates of non-response due to communication difficulties affected patient satisfaction levels, staff viewed teleconsultation favourably. The intervention was also found to be more cost-effective than on-site consultations.

Finally, Bartels et al. (2002) conducted a literature review of extrinsic mental health services provided in nursing homes. Despite a number of methodological flaws, the review reached some interesting conclusions, consistent with geriatric psychiatry research in other settings. The least effective service model was found to be a traditional consultation-liaison service in which a one-time, written consultation is provided by a lone clinician on an as-needed basis. The optimal services were found to be interdisciplinary and multidimensional, addressing neuropsychiatric, medical, psychosocial, environmental and staff issues. Among the most effective examined were those that combined consultation with training and educational interventions.

Summary

In the case of long-term residential settings, geriatric psychiatry interventions reviewed had mixed effects on patient outcomes. However, evaluation research in residential homes is problematic as comparison groups can either be unethical, simply not possible, compare groups in the same institution (contamination) or lack validity, although time series studies provide some research evidence. Geriatric psychiatry case management and consultation through interdisciplinary and multi-disciplinary approaches were found to have a positive effect on functioning for dementia patients, as did cantou and domus-based services. There was also a positive response to geriatric psychiatry services provided for long-term geriatric residents with a range of mental health related conditions. The implementation of a nurse-led psychiatric liaison intervention also saw improvements for participants, although in measures that do not perhaps represent major gains in wellbeing.

Discussion on Table 7: Services offered in rural settings

Four studies of geriatric psychiatry services provided in rural settings were located and reviewed **(see Table 7, pages 70-74)**. These were all Level III and Level IV evidence with one study testing an intervention after a period of follow-up. The other papers described aspects of rural service delivery in detail.

Kaufman et al. (2000) tested a psychosocial intervention based on a task-centred model in a home health care agency in rural Alabama. Utilising psychometric scales, at six months follow-up participants reported improvements in emotional wellbeing and a reduction of problems associated with the target complaints. Distress severity was also significantly decreased. Changes in health status and perceived social support were improved, although these results did not achieve statistical significance. Due to selection methods and lack of control group however, it is uncertain whether these modest improvements were due to the therapeutic intervention itself, or constitute some sort of Hawthorne effect, where the extra attention and support is sufficient to induce positive effects. An important factor to note is the lack of diagnosed mental illness present in the study sample, hence limiting generalisability and relevance to an older mentally ill population.

The three remaining studies are only descriptive in nature, not testing effectiveness of the services they discuss. In general terms, the Senior Adult Growth and Enrichment (SAGE) Programme and the Iowa and Virginia Outreach programmes were found to address successfully two important obstacles to rural mental health care; physical barriers as a result of lack of service availability, transportation and mobility, and stigma associated with accessing mental health care. These programmes included two or more disciplines working together in mental health teams, utilising innovative and flexible styles of service (day and outreach programmes, home visits, establishment of long and short-term therapeutic relationships), implemented in a comprehensive way (involving and developing community skills, providing training and education). The study by Buckwalter et al. (1991) evaluated an Elderly Outreach Programme (EOP) and concluded through the use of proxy measures that the service prevented an increase in the need for mental health care which would have occurred had the service been absent.

Summary

There was limited evidence pertaining to geriatric psychiatry intervention effectiveness in rural communities. While outreach programmes have been examined for their ability to engage those in need of mental health services, and evaluations have shown these to engage the mental health service needs of rural of older persons, effectiveness in terms of clinical outcomes is more difficult to ascertain due to the proxy outcomes used and also the lack of generalisability of these studies to the New Zealand setting. This is because in New Zealand sizable areas unless serviced by an outreach service would not have access to geriatric psychiatry services. In addition all of the included studies were set in the USA where rural areas are often defined as those with a density of less than 1,000 people per square mile.

Discussion on Table 8: Services offered to minority/ethnic groups

One paper set in the UK (Daker-White et al. 2002) was identified that met the review inclusion criteria, but had only limited relevance to minority or ethnic groups in New Zealand **(see Table 8, page 75)**. Daker-White et al. (2002) compiled a literature review of 67 articles focused on dementia care services with minority ethnic groups. Although there were some major methodological flaws apparent in included studies, the review itself is important for advancing knowledge about the study sample. The review recognised a lack of consensus about whether specialist services should be organised for minority ethnic groups, amidst the general lack of evidence of service provision model efficacy. It identified three key issues in the area: that people with dementia from minority ethnic groups utilise services at lower rates than other groups, that language ability has a major effect on cognitive assessment and subsequently dementia diagnosis, and that there is no evidence to support the view that cognitive functioning instruments are culturally biased.

Summary

Research investigating geriatric psychiatry interventions with minority ethnic groups is lacking. The reviewed study raises important issues for further consideration, but of itself does not provide evidence on the effectiveness of service models with minority ethnic groups.

Discussion on Table 9: Services across settings

Five studies were included that considered geriatric psychiatry service delivery across a number of settings. These were evidence Level III-2, III-3 and Level IV studies **(see Table 9, pages 76-80)**, comparing service features and outcomes (rather than interventions) in inpatient, community settings, general hospital and residential settings.

Lippert et al. (1990) studied three groups of patients: two in a general hospital (older adults with younger adults), and one in a home for the aged. Dementia was more frequently diagnosed in the home for the aged (HA) compared to the general hospital ward (GH), where delirium was predominant. Significantly more contacts for psychotherapy were made, with more contact with allied health professionals in the HA, whereas the GH group had more contact with medical staff. Psychiatric consultation was similar for both older and young adults in the GH, but significantly different for older

adults in the HA. The three groups were significantly different in terms of their diagnostic characteristics, perhaps accounting for most of the differences in service delivery.

Wills and Leff (1996) found in favour of community-based geriatric psychiatry services in examining behaviour and satisfaction ratings of patients and relatives in community and hospital settings. Hospital relatives were more likely to express dissatisfaction with services than community relatives, and community setting patients exhibited less disturbed behaviour and lower levels of dependency than those in the hospital setting. These two findings may be due to response bias and also significant differences between the two groups at admission (the hospital sample was generally more dependent than the community group). Nonetheless, data gathered from both settings for 27 patients indicated that these differences were a result of practice-based differences between the two settings.

In contrast, Hickie et al. (2000) found community-based adult mental health teams (CMHT) to be less effective than specialised geriatric psychiatry and inpatient services for individuals with depression. The CMHTs were least likely to provide comprehensive assessment to patients and to work in a coordinated fashion with other agencies, compared with the emphasis on comprehensive medical and psychiatric assessment linked with care from family practitioners evident in the geriatric psychiatry services. As a result perhaps, the long-term outcome for depression for older age patients treated by CMHTs in the study was rated as particularly poor, with 44 percent unchanged or only mildly improved at two year follow-up. Again however, differences in patient groups between the three settings may also have accounted for these findings.

A Clinical Pathways model was found to provide positive effects in the gero-psychiatric care of older patients in the study by Bultema et al. (1996). Measures of the improvement in quality of clinical pathway included the number of consultations, staff contact with relatives and agencies and timely admission examinations and length of stay, but the effectiveness of this model on patient health outcomes was not identified from this study.

Draper (2000) conducted a systematic review of 116 papers on geriatric psychiatry service delivery. Meta-analysis was not conducted, and lower quality evidence was included. Draper noted that the majority of studies reviewed cited positive acute treatment outcomes, particularly for depression, although there was not sufficient evidence to determine which modes of care were associated with these. Overall, he concluded that old age psychiatry services were effective in a broad sense, based on evidence from controlled trials and audits.

Summary

The evidence on geriatric psychiatry services in various settings is somewhat mixed, largely due to the 'comparison' groups of patients, the range of outcomes used in these studies and the heterogeneity of studies included here. Because of the diversity of services across settings, this literature provides more a descriptive difference in services rather than evidence for the effectiveness of one service over another. This would explain why it also appears in some respects to contradict findings from previously reviewed studies involving the comparison of an intervention in one setting with a control or usual care condition. There is evidence of positive treatment outcomes for older adults with mental disorders, but this may be due to the effects of the different comparison groups and the included studies reviewed here.

Conclusion

Six key points emerge from the critical appraisal of eligible literature:

- the most positive outcomes of geriatric psychiatry services were noted in community settings, with moderate to large intervention effect sizes evident, particularly for multidisciplinary team assessment and treatment of depression and comprehensive case-management of dementia
- geriatric psychiatry services for inpatient settings were generally effective, with multidisciplinary team approaches in specialist geriatric psychiatry units showing the greatest success in the patient outcomes evaluated, as also were behaviour management programmes within specialist units performed by multidisciplinary teams. Consultation liaison interventions in these settings showed more mixed results

- for patients as well as caregivers, comprehensive services (including training and education in addition to assessment and treatment) provided by a multidisciplinary team, tailored to individual need, appear to be most effective
- outpatient settings show some benefit to patients in day hospitals/centres and indicate that some disease specific clinics – e.g., memory clinics provide opportunities for early detection and intervention
- limited material was identified for primary care, rural-based geriatric psychiatry services, and those services directed at minority ethnic groups making it difficult to draw strong conclusions about their effectiveness
- the literature base, though having methodological limitations does contain a proportion of studies with experimental designs. However, some areas contain mostly observational or descriptive studies, some with comparison groups, but inadequate measurement of service effectiveness.

PRIMARY AND SECONDARY RESEARCH: STUDY DESIGNS AND QUALITY

The search identified 68 eligible primary and secondary research studies for inclusion in evidence tables. Below is an overview of study designs and aspects of quality represented by these studies.

Study design

Studies included in the review ranged from systematic reviews (Level I, II, III-2 and III-3 evidence hierarchy) through to descriptive studies (Level IV evidence hierarchy). There was one systematic review of Level I quality, and a number of reviews (Level III) including non-randomised studies, or studies without control groups. Over all the settings, there were 15 randomised controlled trials included, and the majority of these used blinding in the evaluation of outcomes. Over half of the included studies were descriptive, retrospective/prospective or pre/post test study designs (level IV) and lacked any form of comparison group.

Study setting

The largest number of studies included were those of geriatric psychiatry services provided in community settings (18). There was also a significant focus in the literature on services for hospital inpatient settings (16), and long-term residential settings (14), with the smallest number of studies found in rural settings (3), primary care settings (3) and with minority or ethnic groups (1). A number of studies compared services across settings (5). The most common countries in which a study was set or secondary research conducted were USA (23/68 studies), United Kingdom (17/68 studies), Australia (10/68 studies), Canada (6 studies) and the Netherlands (5 studies).

Samples

Participants were most often recruited for studies from their enrolment in particular geriatric psychiatry services. Few studies recruited directly from community settings. Participants were often recruited on the basis of prior mental health conditions and/or diagnoses of, for example, dementia or depression. Probably due to age and gender-differential life expectancy, study samples were comprised mainly of females and samples aged from 55 years and over, most commonly being aged 65 years and over. Some studies used small convenience samples. Inclusion and exclusion criteria were most often determined by age, severity or type of mental health condition, place of residence, and admission to a geriatric psychiatry service but were not always specified. The recruitment population screened before inclusion in a particular study was often considerably larger but due to exclusions and unwillingness to participate only a small proportion of potentially eligible patients were finally enrolled in the study. The notion of recruiting patients neither too healthy nor too sick for study patient samples and how well this was achieved had a significant influence on the efficacy of geriatric psychiatry service interventions measured through the outcomes of interest.

Interventions

Interventions considered were those implemented by specialist geriatric psychiatry team services. Many articles in the literature did not focus on or test interventions specifically, but some were included nonetheless for their discussion of key issues. Interventions were often structured programmes involving education, case management, multidisciplinary team assessment, treatment and rehabilitation, shared care, carer education, health education, physical, psychological and social interventions, outreach, and behavioural management, implemented in a number of settings. These were often compared with 'usual care' or 'standard hospital treatment', although a significant number of studies did not use control/ comparison groups. Many interventions were not implemented and tested in a well controlled environment, or were tested as part of a package of services. This meant it was impossible to determine which specific aspect of the service had been instrumental in achieving successful outcomes.

Outcomes

Three main types of outcomes were assessed in the included studies that measured the efficacy of geriatric psychiatry services. These were rate of institutionalisation, condition-based (including clinical) outcomes, and level of functioning. Institutionalisation was considered in terms of delays in rest-home admission, length of inpatient/ hospital stay, retention rate (remaining in a home environment), or number of 'undesirable moves' to more dependent forms of care. Condition-based outcomes included clinical measures of disease severity (for example, depression or anxiety scale scores) using psychometric scales. Level of functioning was assessed, including ability for self-care (ADLs), presence and utilisation of social support or networks, and use of pharmaceutical drugs. The latter two were often aggregated to produce a 'quality of life' measure. Rate of institutionalisation was measured statistically, and condition-based outcomes and level of functioning were usually assessed using clinically-validated tools.

The sources of this data included hospital inpatient records, primary practitioner records, and assessment tools and questionnaires including psychological, functionality, quality of life, service usage and health status scales, both self and investigator administered.

Many of the assessment tools used were referenced from the literature and the validity and reliability of some was also specified in the study methods section. Different variations of similar assessment scales were commonly used – e.g., the activities of daily living index (ADL) or instrumental activities of daily living index (IADL). The diversity of outcome measures used is a problem in meta-analytic research in this area as it is not often possible to combine studies in a quantitative way, other than for the most common of outcome measures. Qualitative research and evaluation is equally problematic because of the variation in outcome measures.

A number of the studies assessed effectiveness using proxy measures such as compliance with treatment. The descriptive studies were also more likely to use qualitative and/or observational measures to determine client satisfaction and success in the service environment.

Baseline measures were taken in most studies, with follow-up assessment repeating measures to determine intervention or service effectiveness. Length of follow-up ranged from discharge to five years, and in some studies was repeated a number of times. Some studies did not follow-up client outcomes longitudinally, but were cross-sectional or retrospective studies of these outcomes.

Limitations with the research base

The evidence considered in this review exhibited methodological limitations and these limitations were similar across all settings. These limitations are summarised below:

- There were difficulties identifying true and important clinical differences in primary studies in health outcomes between geriatric psychiatry service interventions and control/comparison arms. This was in part due to small sample sizes and contamination between groups as at times patients

from both groups received similar assessments and treatments from the same physicians, and also in part the use of inappropriate comparison groups. Different levels of care were reported for control/comparison groups ranging from "usual" care to "enhanced" usual care making differences between the two patient groups subtle in some cases. A large number of studies with descriptive designs contained no comparison group making it impossible to determine effectiveness over and above usual care.

- Methodological limitations of primary studies included patient selection bias from age-related patient selection (rather than targeted), single or homogenous site study settings, variable samples with multiple conditions, unbalanced patient sample gender proportions with ratio of F:M about 2:1 in elderly populations, differing diagnostic criteria or a lack of information on the criteria used for patients with dementia, depression etc. Commonly, large numbers of patients had to be screened before enough study participants could be recruited. There were differences in the timing of interventions across studies – e.g., at admission versus discharge care treatment etc. There were varied assessment approaches and processes and specialist teams ranging from a basic core to expanded multi-disciplinary team. There were variable patient lengths of hospital stay and follow-up intervals and a large range of assessment tools/outcome measures. Different assessment tools measured the same outcome and a wide range of outcomes made study comparability difficult. Although these were often referenced, an indication of the validity and reliability of few assessment tools was specified. Often it was not clear whether or not results from RCTs were based on an intention to treat analysis and losses to follow-up were considerable in a number of studies.

- Other limitations included a lack of literature in New Zealand settings which is largely due to a lack of research funding in geriatric psychiatry. A limitation in the generalisability of the results of the review to the New Zealand context and population is therefore a real issue. Also, there was little relevant data in studies on cost effectiveness and the cost of care. There was a lack of studies on interventions for and the needs of older persons based on ethnicity, race, SES and education level. No primary studies were identified which addressed these issues for Maori and other groups in the New Zealand context.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing)

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Eloniemi-Sulkava et al. (2001) RCT with two year follow-up Kuopio, Finland Grade: Level II	Participants 100 dementia patients, age 65 years and older, living at home with the primary support of informal caregivers, randomly allocated to intervention (n = 53, mean age 79 years, 51% male) and control groups (n = 47, mean age 80 years, 43% male). Inclusion criteria Age 65 years or older and entitled to payments from the Social Insurance Institution for community care because of a dementing disease; living at home with an informal caregiver in one of five municipalities in Finland; without other severe diseases (severe stroke, cancer) that might lead to future institutionalisation. Exclusion criteria Patients and caregivers unable to participate in annual training courses.	Service and study description Intervention: intervention patients and their caregivers were provided with a two year intervention programme of systematic, comprehensive support by a dementia family care coordinator (a registered nurse with a public health background). Included: ▪ advocacy for patients and their caregivers ▪ comprehensive support ▪ continuous and systematic counseling ▪ annual training courses for patients and caregivers ▪ follow-up calls ▪ in-home visits ▪ assistance with arrangements for social and healthcare services, and ▪ twenty-four hour per day availability by mobile telephone. Control/comparison: the control group received the usual services provided for geriatric patients in community care by the municipal social and healthcare system or the private sector.	▪ during the first months, the rate of institutionalisation was significantly lower in the intervention group than in the control group, but the benefit of the intervention decreased with time ▪ severely demented subjects benefited the most from the intervention.	▪ regional assessment team (responsible for assessing need for institutionalisation) blind to allocation, and generally unaware that a patient was participating in the study ▪ there were no drop-outs from the study during the two year follow-up ▪ eligible patients may not have been included in the study due to improper diagnosis or not being informed of their entitlement to Social Insurance Institution payments ▪ small and homogeneous study population limits generalisability of the results beyond older Finnish people with dementia living at home with an informal caregiver as primary support.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Rabins et al. (2000) Prospective randomised trial with two year follow-up Baltimore, Maryland, USA Grade: Level II	Participants 298 residents in six urban public housing sites for elderly persons in Baltimore Intervention group: mean age 75, 85% female. Comparison group Mean age 76, 70% female. Inclusion criteria Resident at one of six public housing sites, aged 60 years and older, agreement to participate. Exclusion criteria None mentioned.	Service description Public housing: government-subsidised housing/accommodation providing affordable housing for low-income individuals. The Psychogeriatric Assessment and Treatment in City Housing (PATCH) team: consists of two psychiatric nurses and two part-time psychiatrists under the direction of a senior geriatric psychiatrist. Intervention combines principles of Assertive Community Treatment and Gatekeeper models. Study description PATCH intervention ▪ a structured education programme provided to enable building staff to recognise and refer residents needing mental health care (case-finders) ▪ nurse remains in contact with study sites to receive referrals and provide services to residents ▪ residents referred offered evaluation. Evaluation/assessment conducted initially by nurse alone and then in-home with nurse and psychiatrist. Treatment plan developed and offered ▪ interventions included counseling, patient education, liaison with other health workers, supervision and provision of medication, referral for care of physical health problems, and assistance with issues relating to social networks, environment, economic status and transportation.	Public housing sites randomised to PATCH intervention or 'usual services' ▪ at 26 months follow-up, psychiatric cases at the intervention sites had significantly lower scores relating to depressive symptoms and also to psychiatric/behavioural symptoms than those at the non-treatment comparison sites ▪ there was no significant difference between the groups in terms of undesirable moves (eviction or re-location to a nursing home/ board-and-care home).	▪ baseline epidemiological surveys conducted prior to implementation of the PATCH intervention ▪ pair-matching and randomisation of housing sites conducted ▪ blind case identification at Stage 2 ▪ methodology comprehensively detailed ▪ intervention and comparison sites very similar in terms of baseline characteristics ▪ two stage epidemiological case finding method has not been widely used in intervention trials, has been criticised as artificially increasing sample size and power ▪ however, it is a practical and cost-effective method ▪ there is no standardised treatment as the independent variable.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Llewellyn-Jones et al. (1999) RCT with single blinded 9.5 month follow-up Sydney, Australia Grade: Level II	109 residents (intervention group), 83% female, mean age 85 years. 111 residents (control group), 86% female, mean age 84 years. Inclusion criteria English speaking non-nursing home residents aged 65 or over and cognitively able to provide accurate information. Exclusion criteria Severe physical illness, or current treatment from a mental health professional for depression or a serious mental illness.	Service description Residential facility: including self care units, hostels and nursing homes for elderly people. Also refer to study by Llewellyn-Jones et al. (2001), pp 478-84 for in-depth information on multi-faceted shared-care intervention. Study description Routine care: the control group was monitored first while the entire population received routine care. (Baseline assessments were conducted, with follow-up at 9.5 months). Shared care intervention: a population-based, multifaceted intervention for late life depression was implemented, involving removing barriers to care (primarily by multidisciplinary collaboration), providing carer education, and utilising health education and health promotion with residents. In addition to baseline assessments (taken prior to the intervention), the intervention group was monitored post intervention implementation.	Non-nursing home residents were randomised to shared care intervention for depression versus routine care ▪ shared care was statistically more effective than routine care, after controlling for possible confounders, with an average improvement of 1.87 points on the geriatric depression scale in the intervention compared with the control group ▪ significantly more movement to "'less depressed" geriatric depression scale levels at outcome was found in the intervention group and evidence that the intervention helped prevent mild depression from becoming worse.	▪ both groups were similar at baseline ▪ unusual RCT design (serial nature, universal implementation of intervention) ▪ reliable and valid measure of depression used, blinded assessments, a large sample, and controlling for an extensive list of possible confounders ▪ possible secular confounding since the groups are studied over a different period of time ▪ limited generalisability due to only one residential facility studied ▪ exclusion of cognitively impaired people limits generalisability to those with depression and/or significant dementia.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Cole et al. (1995) RCT Montreal, Canada Grade: Level II	Participants 32 patient referrals by GP's for evaluation of depression. 15 were assigned to home assessment, mean age 75 years, 20% male. 17 were assigned to clinic assessment, mean age 72 years, 29% male. Inclusion criteria Referrals with depression sub-scale rating of 16+ (SCL 90) symptom checklist. Exclusion criteria None specified.	Service and study description Outpatient clinic setting as part of a primary acute hospital in Montreal, Canada. Patients were GP referrals for evaluation/assessment of depression by psychiatrists. Refer to page 20 in paper. These evaluations were performed at baseline and up to 3 months later using various psychometric measures and scales.	▪ no significant differences between home and clinic assessment groups in terms of clinical information such as diagnosis, treatment, compliance, hospital admissions ▪ significant improvement in terms of the social resources, evaluation of change and mental status scales but no differences between the two groups. Conclusion Home assessment did not improve outcomes for depressed older persons compared with outpatient clinic assessment.	▪ small sample size may limit ability to detect real differences in outcomes between the two groups ▪ non-blinded.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Banerjee et al. (1996) RCT single blinded, with six month follow-up Lewisham, UK Grade: Level II	33 patients (geriatric psychiatry team intervention), 85% female, mean age 80 years. 36 patients (control group), 81% female, mean age 81 years. Inclusion criteria All those aged 65 or older, receiving home care but not currently under psychiatric care, diagnosed as depressed. Exclusion criteria No grounds for exclusion were noted.	Service description Geriatric psychiatry team intervention: a multi-disciplinary team (community psychiatric nurses, occupational therapists, senior and junior medical staff, a social worker, and a psychologist) working together in the assessment, treatment and management of elderly individuals with mental illness. Study description Geriatric psychiatry team intervention: the team formulated a management plan for each subject, including any combination of physical, psychological, and social interventions. Subjects were visited in their own homes and their progress regularly reviewed by the team. Control group: received general practitioner care as usual.	Patients randomised to Geriatric psychiatry team intervention versus control group (usual GP care) ▪ psychiatric treatment was substantially more effective than general practitioner care alone in treating depression in participants, resulting in statistically significant effect sizes ▪ increasing depression severity and first episode of depression were the main predictors of worse outcome at six months.	▪ both groups similar at baseline ▪ methodological strengths; adequate randomisation method, single blinding, stringent clinical criteria and diagnosis ▪ naturalistic controlled trial of the treatment of depression in elderly people ▪ generalisability potentially affected by non-response bias, and specific features of sample (receiving home care) ▪ prescription of antidepressants may have contributed to the treatment effect (at follow-up, fewer patients in the control group (16%) than in the intervention group (69%) were treated with antidepressants).

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Waterreus et al. (1994) RCT with three month follow-up London, UK Grade: Level II	96 participants in total (47 CPN intervention group, 49 control group). Mean age 76 years, 85% female. Inclusion criteria A score of six or more on the depression scale (CARE), agreement to participate. Exclusion criteria None specified.	Service description CARE (Comprehensive Assessment and Referral Evaluation): a semi-structured interview designed especially for use with the elderly. Assesses depression, dementia and disability. Multi-disciplinary hospital-based geriatric psychiatry team: provides assessment, treatment and rehabilitation services to mentally ill elderly people. Consists of staff from an array of disciplines: psychiatric nurses, occupational therapists, senior and junior medical staff, social workers, psychiatrists, and psychologists. Community psychiatric nurse: a trained psychiatric nurse providing care and support to psychiatric patients living in the community. Study description CPN intervention group: the role of the CPN was multifaceted, involving the implementation of a wide range of interventions: ▪ psychological (personal supportive therapy, behaviour therapy and relaxation techniques, family and marital work, bereavement counseling) ▪ physical (pharmacotherapy, medical services) ▪ social (community support group referral, resolving living condition issues) ▪ educational (short teaching sessions) ▪ patients received a mean of 10 visits and approximately seven hours face to face contact with the CPN during the three months. Control/non-intervention group: these individuals continued to receive 'usual care', ranging from specific psychiatric care including antidepressant medication through to GP care, and referral to community organisations.	Participants randomly allocated to either CPN intervention group or 'usual care' (control) ▪ significantly more individuals in the CPN group changed from case to non-case, i.e., their depression scores decreased and the patient improved ▪ in addition, the CPN group had significantly lower mean short-CARE scores (i.e., they reported fewer depressive symptoms) at three month follow-up compared to the control group.	▪ methodology only briefly discussed (outlined more fully in previous papers) ▪ baseline cognitive data collected for all participants ▪ validity of assessment tools unknown ▪ study unable to reach definitive conclusions about efficacy of particular interventions.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Challis et al. (2002) Quasi-experimental comparative study with follow-up at six and 12 months. Manchester, UK Grade: Level III-2	Participants Older people with dementia and their carers. 45 cases in the intervention group (mean age 80 years, 70% female). 50 cases in the comparison group (mean age 80 years, 70% female). Inclusion criteria Diagnosis of dementia, significant needs unmet by existing services, perceived risk of institutionalisation. Exclusion criteria None specified.	Service description Intensive case management: provided by case managers within a community mental health team for older people, with a specific target population of older people with dementia. Case managers combine the planning and co-ordination roles with a supportive role for a small number of service users who have complex and frequently changing needs. Study description Intensive case management: participants were assessed at uptake, and followed up at six and 12 months for quality of care and quality of life measures.	Individuals in the intensive case management group were compared with a matched group of individuals receiving standard community team service: ▪ at the end of two years, 51% of the case management group remained at home compared with only 33% of those in the comparison group ▪ for the experimental group significant improvements in the social contacts of older people were noted, along with a decrease in the stress of their carers and a reduction in their input to the care of the client ▪ there were significant improvements on ratings of overall need reduction, aspects of daily living and level of risk for recipients of intensive care management ▪ the data suggest that intensive case management could make a cost-effective intervention in the lives of older people and their carers.	▪ the comparison and intervention groups were matched by a number of key characteristics. No key differences were apparent ▪ standardised, validated measures were used for assessment ▪ assessors were not blinded to the treatment condition of participants ▪ the comparison group service is more extensive for those with cognitive impairment than would be so on average throughout the UK.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Aimonino et al. (2001) Comparative study Turin, Italy Grade: Level III-2	Participants 82 patients with advanced dementia: 41 managed at home by a home hospitalisation service (HHS)(mean age 83, 68% female) and 41 in a general medical ward (mean age 85, 66% female). Inclusion criteria Not specified. Exclusion criteria Not specified.	Service and study description Home hospitalisation service (HHS): allows diagnostic and therapeutic interventions usually performed in hospital, to be carried out in the home. The HHS team included geriatricians, nurses, physiotherapists and social workers.	▪ no significant differences between the two groups were observed at admission for disease characteristics, and the level of caregiver stress ▪ the caregiver's stress, however, was significantly lower at discharge in the caregivers of HHS patients ▪ at discharge, the use of antipsychotic drugs was significantly lower in the HHS patients ▪ only one patient of the HHS group was transferred to a nursing home, compared with 17 from the general medical ward group.	▪ methodology not well detailed ▪ randomisation not used ▪ selection criteria not well detailed ▪ service activities and components not well described ▪ baseline measures indicate the HHS and GMW groups fairly similar across demographic and disease severity characteristics.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Rosewarne et al. (1997) Longitudinal, quasi-experimental with two year follow-up. Cheltenham, Australia Grade: Level III-2	Participants In situ resident groups from integrated (non-dementia specific) hostels. 183 residents in programme group (mean age 82 years). 162 residents in comparison group (mean age 83 years). Inclusion criteria None specified. Exclusion criteria None specified.	Service description Hostels for the elderly: provide long-term accommodation and support services for on average, 50 residents with mild to moderate levels of personal care dependencies. These facilities do not have 24 hour nursing supervision and care. Study description Comparison hostels: non-grant hostels provided general activities broadly applicable to all residents. A collection of recreational activities, with no linkage between the activities and care plans. Programme hostels: provide dementia programmes/activities organised specifically for people with dementia using dementia grant funding. Activities include discussion groups, morning and afternoon tea preparation and personal activities such as selecting clothing, dressing and room organisation, therapy-focused activities such as validation and reminiscence. Activities selected on basis of assessed patient need.	Residents randomly selected from programme and comparison groups and assessed three times over the course of the study: ▪ residents in hostel dementia programmes remained significantly longer than those in the comparison group before exit to a nursing home ▪ quality of life for residents in dementia programmes was enhanced through higher levels of social contact with relatives and lower reported levels of depressive symptoms.	▪ baseline assessments conducted for all participants ▪ validated psychometric assessment tools used ▪ control for selection effects through the use of a number of hostel and resident status factors to match programme and comparison hostels and groups ▪ external validity/generalisability high due to use of combined hostel groups ▪ high drop-out rate (46%) resulting from placement in alternative care resulted in systematic bias in follow-up, as well as reducing power to detect true differences between interventions.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
O'Connor et al. (1991) Two stage controlled trial Cambridge, UK Grade: Level III-2	Stage 1: 2616 participants aged 75 and over Stage 2: 86 subjects in intervention group (median age 84 years, 71% women) 73 subjects in control group (median age 84 years, 59% women). Inclusion criteria Stage 1: Cambridge general practice patients aged 75 and over. Stage 2: Those diagnosed with dementia at Stage 1 living at home or in sheltered accommodation. Exclusion criteria None specified.	Service description Resource team: provides early intervention assessment and support services to mentally infirm elderly people and their families. Multidisciplinary discussion of referrals at weekly meetings. Early intervention: tailored to needs of specific cases including personal contact, practical advice, family counseling, liaison with general practitioners and other agencies, relatives' support groups, social groups, a volunteer service, night sitters, and respite admissions. Study description ▪ Stage 1: General practice patients visited by trained lay interviewers, who administered the mini-mental state examination. Those with a score of 23 points or less out of 30 further assessed by psychiatrists ▪ Stage 2: Those diagnosed with dementia living at home or in sheltered accommodation divided into two groups based on place of residence. Those in the area served by the resource team placed in the action/ intervention group, the others became controls ▪ diagnostic interview repeated one and two years later to check on progress and confirm diagnoses ▪ those in the action/intervention group referred to the resource team for assessment and assistance, including physical aids, home help, day care, respite admissions, and geriatric psychiatry assessments ▪ controls received usual medical and social services ▪ main outcome measure: permanent admission to long-term care within two years after diagnosis.	▪ early intervention did not affect admission rates in subjects living with supporters ▪ by contrast, 64% of subjects with moderate to severe dementia living alone were admitted in the action group in the study's second year compared with only 8% of controls.	▪ baseline cognitive data collected for all participants ▪ valid diagnostic and assessment tools used ▪ numbers in experimental and control areas roughly balanced, but within each group, subjects' circumstances varied considerably ▪ stratification by dementia severity and response rates of 81% in the diagnostic stage, and 68% in stage 2 for the action group.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Cuijpers (1998) Meta-analysis Grade: Level III-3	Fourteen studies were found in which psychological treatment was offered to depressed elderly in the community (these encompassed 799 participants). Inclusion criteria Studies that reported about the effects of a psychological intervention aimed specifically at older adults (55 years and older). An active recruitment method had to be used and at least pre-test and post-test data had to be presented. Exclusion criteria Studies of other interventions (e.g., exercise and music therapy) directed at treatment of depression.	Service description Outreach programmes: involve active recruitment of individuals (via advertising, announcements and active requests for referrals) to receive community-based treatment. Interventions included in the studied outreach programmes: ▪ attention control ▪ behaviour therapy ▪ cognitive behavioural therapy ▪ non-specific group therapy ▪ problem-solving therapy ▪ psychodynamic therapy ▪ reminiscence ▪ social contact ▪ supportive therapy. Study description ▪ studies were traced through several computerised literature databases, using key words 'depression' and 'elderly' ▪ the resulting papers were studied, evaluated on methodological criteria and included or excluded on this basis ▪ a meta-analytic method was used to estimate the effects of the outreach programmes from the 14 studies.	Effect sizes ▪ the mean effect size across the studies was 0.77, a large effect ▪ in those studies that presented follow-up data, effects were shown to remain stable for one to six months. Variables related to outcome ▪ participating in a cognitive-behavioural intervention was found to result in a statistically significant effect size, indicating that the effects of CB interventions are larger. Drop-out rate ▪ the mean drop-out rate of the interventions was 0.23. Four significant predictors of drop-out were found: participating in a group programme, participating in a CB intervention, the percentage of female participants, and the number of sessions.	▪ study participants were research volunteers and may differ from depressed persons who participate in a regular outreach programme ▪ most of the selected studies had small sample sizes and placebo or 'no treatment' control groups were not often used ▪ the effects of interventions in which depressed elderly are actively recruited from the community are large ▪ drop-out rate should be part of every meta-analysis, as it is an important indicator of outcome.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Bedford (1996) Comparative study Cambridge, UK Grade: Level III-2	Participants Subjects: 136 referrals of new cases referred to community specialist geriatric psychiatry teams. Categorised in two groups, dementia sufferers n=65, mean age 82, 18% male and other conditions, n=71, mean age 79, 32% male. Inclusion criteria Referrals to specialist teams. Exclusion criteria None specified.	Service and study description Four (2 urban, 2 rural) community-based geriatric psychiatry teams with multi-disciplinary assessment, therapy, monitoring, ongoing support and at times case management). Routine service teams, based in large long-stay inpatient facilities. Refer to page 1052 in study paper. Outcomes data collected by keyworker assessment at baseline and 6 months follow-up interviews.	▪ referral rates double urban areas c.f. rural ▪ dementia group significantly more dependent and in receipt of more informal and formal care – e.g., team support and monitoring ▪ greater numbers of the functionally ill group alive and living out of institutions c.f. dementia group ▪ outcomes for carers poor in both groups. Unmet needs common in dementia group, especially availability of formal care. Conclusion Some outcomes contribute to local services policy development – e.g., geographical inequality and unmet needs.	▪ incomplete data problems, and data scope limited for services evaluation outcome measures – e.g., dementia severity.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Florio et al. (1998) Comparative study Spkane, Washington, USA Grade: Level III-2	88 referrals from GateKeepers (GK) or other sources to mental health services for case management, with 40 referrals by GKs, mean age 78 years and 28% male, 48 referrals by other sources, mean age 80 years and 35% male. Inclusion criteria None specified. Exclusion criteria None specified.	Service and study description Gate Keeper model (GK), where high-risk adults who don't often come to attention of mental health services are referred to community aging and mental health services by trained employees of corporations. GKs are linked to inter-disciplinary in-home clinical case-management program which responds to referrals. Initial referrals enrolled in clinical case-management. Refer pages 74-75 in paper. Study aim to compare outcomes and service utilisation patterns of individuals referred by both sources over 1 year follow-up.	▪ individuals referred by GK c.f. other more likely to have cognitive problems, more likely to have case-management, live alone, and socially isolated and not have physical health problems at baseline. At one year differences were not evident and less GK referrals residing in placements outside of home than other referrals. Conclusion GK model does not result in high service utilisation despite still being enrolled in case-management at 1 year.	▪ single community implementation of GK model and had been implemented for number of years may effect generalisability of results to other communities ▪ study did not assess case materials only data forms filled in by case-managers.
Mutch et al. (2001) Comparative study Sydney, Australia Grade: Level III-3	Participants 44 patients, mean age 65 years, 9% male presenting to district mental health services over an 8 month period (1999) after introduction of service initiatives. Comparison group of 99 patients, mean age 69 years, 31% male presenting during 1995 prior to service changes. Inclusion criteria Primary diagnosis of depression. Exclusion criteria Not specified.	Service and study description District mental health service with inpatient unit, specialist geriatric psychiatry services and 2 adult community mental health services. Before and after service initiative comparison. Service initiatives included: Clinician education about evidence-based treatments for depression. The provision of standardised assessment and treatment tools. Changes in policy/processes to require clinical teams to complete assessment forms and introduce patients to educational and self-evaluation formats. The appointment of a project officer to support clinicians in skill development and changing clinical practice. Pages 450-451 in paper.	▪ there were significant improvements in (numbers of) medical, neurocognitive and behavioural assessments, lab investigations (neuro-imaging) and communication with GPs for all services ▪ greatest change in adult community-based treatment services. Conclusion Coordinated management and education initiatives resulted in improvements in basic medical and psychiatric assessment and more integrated care without service expansion.	▪ outcomes based on numbers of investigations using tools and numbers of communications with GP's before and after implementation of strategy. Proxy for quality measures.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
kohn et al. (2002) Descriptive study New York, USA Grade: Level IV	Participants Overall, 233 referrals to program over 2.5 years of whom 93 accepted with mean age 80 years, 24% male. One-third affective disorders, 18% dementia with depression and one-third with dementia, other. Inclusion criteria Referral. Exclusion criteria Not requiring service, no evidence of disorder.	Service and study description Mental health outreach programme for home-bound elderly (HEP). Based from medical center in large psychiatric hospital and part of mental health service. Multi-disciplinary mobile team with initial home visit by social worker, if eligible then full medical evaluation, plan, follow-up, support services. Refer page 470 in study.	▪ the Global Assessment of Functioning (GAF) score was significantly higher at discharge or close of study than at baseline ▪ degree of being home-bound not significantly different. Conclusion Community-dwelling individuals maintained and lessened disability with intense case management increase in home hours.	▪ no comparison/control group and limited outcomes evaluated.
Lefroy et al. (1997) Service review Perth, Australia Grade: Level IV	Participants 171 residents admitted for permanent care at a special dementia unit (SDU) hostel during an eleven- year period (52% aged 80 years or more, 82% female). Inclusion criteria Admission for permanent care at the SDU from 1985 to 1996. Exclusion criteria Not specified.	Service and study description Special Dementia Unit (SDU) hostel: a stand-alone hostel with facilities for 36 residents, with day care centre attached and adjacent cottage for intermittent care. Nursing care not provided, but a project for training staff in dementia care is part of the complex.	▪ 113 (66%) residents had been transferred to nursing homes when care could no longer be continued in the SDU ▪ the retention time in the hostel for 50% of residents was 2.3 years ▪ on average almost equal time is spent in the SDU and the nursing home between admission to the hostel and death ▪ the SDU appears to be a useful addition to facilities available for residential care.	▪ descriptive survey only, with minimal ability to draw conclusions about service effectiveness ▪ admission criteria to the facility, with preference/priority given to those from a home environment, may limit generalisability.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Collighan (1993) Descriptive study London, UK Grade: Level IV	Participants Subjects: 100 (30% male, mean age 78 years) new cases referred to community specialist geriatric psychiatry teams. Inclusion criteria Referrals to teams from medical/non-medical agencies. Exclusion criteria None mentioned.	Service and study description Two community-based geriatric psychiatry teams with multi-disciplinary approach (assessment, treatment, rehab) and similar operating policies in central London health district performing domiciliary assessment. Refer to page 821 in paper. Outcomes derived from the degree of concordance between the teams diagnosis and consensus diagnosis by research psychiatrists.	▪ the level of agreement between teams and researchers was 90-99% for each specific psyhiatric disorder studied ▪ there was no significant difference between medical and non-medical personnel compared with researcher diagnoses ▪ longer team experience associated with greater diagnostic accuracy. Conclusion Multi-disciplinary approach to assessment of referrals to community teams was not associated with misdiagnosis of psychiatric disorders.	▪ the full range of services performed by teams not validated. Only medical assessment, others such as functional, social, behavioural, financial, physical disability not ▪ different assessments performed by researchers c.f. teams. Experience of assessors not controlled for in comparisons.

Table 2. Evidence tables of models of geriatric psychiatry services in community settings (including patients' homes, hostels and public housing) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Seidal et al. (1992) Before/after study Adelaide, Australia Grade: Level IV	Participants 100 consecutive patient referrals, mean age 79 years, 37% male. Inclusion criteria Referrals via pyschogeriatric unit's duty worker. Exclusion criteria Non-psychiaric conditions, crisis interventions.	Service and study description A pyschiatric hospital–based geriatric psychiatry outreach team (6 FTE) with referrals including initial assessment at patient residence and development and management plan. Refer to page 348 in study.	▪ patients with dementia and psychotic disorders but not with major depression showed significant clinical improvement. Conclusion A small team is effective and supplements the overall care of geriatric psychiatry patients at home in the community.	▪ no comparison or control group.

Table 3. Evidence tables of models of geriatric psychiatry services in primary care settings (including general practice)

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Arthur et al. (2002) RCT with 18 month follow-up Leicestershire, Nottingham, UK Grade: Level II	Participants Ninety-three patients from a general practice in Leicestershire, aged 75 years and over, with a Geriatric Depression Scale (GDS15) score of 5 or more. Intervention group (n = 47, median age 82 years, 70% female). Control group (n = 46, median age 79 years, 83% female). Inclusion criteria Agreement to have health check, with a GDS15 score greater than or equal to 5, agreement to participate. Exclusion criteria None specified.	Service and study description Intervention: consisted of a mental health assessment by a member of the Community Mental Health Team (CMHT) for patients who had agreed to the follow-up visit. The CMHT saw patients within three weeks of the referral, when a full mental health history was carried out, current medication needs reviewed and likely impact of further CMHT interventions assessed. Patients were assessed at a subsequent health check again, a year to 18 months later. Patient's GP informed and approval sought for assessment and recommendations for further management by CMHT. Control condition: control group patients were managed as they would have been prior to the start of the study. If there was indication that the patient was depressed, this was discussed with them, and a doctor's appointment encouraged. Access to the CMHT was still available for control group patients, but occurred independently from the trial.	Participants were randomly allocated to either intervention or usual care (control): ▪ 80% follow-up health checks were completed successfully ▪ at follow-up, less than one-third of patients had a lower or 'improved' GDS15 score compared with baseline ▪ when controlling for baseline differences the intervention group were less likely to achieve an improved GDS15 compared with any other outcome than the control group, although this was not statistically significant ▪ the study found no evidence that a routine follow-up assessment by a CMHT member improved outcomes for depressed older people.	▪ adequate randomisation methods, assessor blinded to allocation ▪ contamination bias between study arms: Only 72% of those in the intervention group actually received the intervention. The remainder refused the intervention. 17% of the control group were referred to the CMHT during the study ▪ the fundholding practice restricted authorisation for further CMHT management to the patient's GP following the CMHT assessment, reducing the numbers of participants receiving follow-up assessment ▪ intervention group patients were older, higher % male and less likely to have difficulty or requiring help in performing ADLs. They were also more likely to have a higher GDS15 score than controls ▪ all baseline differences controlled for in the final analysis ▪ missing scale items coded as if patients had given a 'depressed' response, although unlikely to have affected the results of the trial.

Table 3. Evidence tables of models of geriatric psychiatry services in primary care settings (including general practice) *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Unutzer et al. (2001) RCT with follow-up at three, six, 12, 18 and 24 months. USA Grade: Level II	Participants 1,287 older adults with depression or dysthymia recruited from seven national study sites (mean age 71 across sites, average percentage of females 65%). Inclusion criteria Patients of participating providers, English speaking, age 60 and older, with transportation and telephone, diagnosis of current major depression or dysthymia. Exclusion criteria Current problem drinking, bipolar disorder or schizophrenia, ongoing treatment by a psychiatrist, risk for suicide, severe cognitive impairment.	Service and study description Collaborative care: multi-faceted treatment for depression by a number of clinicians in a primary care setting. Assessment, follow-up care and case management led by a depression clinical specialist (DCS), coordinated with the regular primary care provider, and consultation involving a primary care expert and a team psychiatrist. Stepped care A 3-step treatment algorithm aimed to best fit patient needs over time (patients who require more intensive intervention move on to Steps 2 and 3): ▪ Step 1: antidepressant medication (a selective serotonin reuptake inhibitor) or a course of PST-PC. ▪ Step 2: change to an alternative antidepressant, or a switch from medication to Problem Solving Therapy in Primary Care (PST-PC), or vice versa. ▪ Step 3: a combination of treatments (more than one antidepressant, or an antidepressant plus PST-PC). Control/care as usual: formulation of a research diagnosis and encouragement to follow-up with primary care providers. Patients observed under naturalistic conditions. No restriction on type of primary care and specialty mental health treatments utilised by patients and providers.	After completion of the baseline interview, participants randomly assigned to intervention or to care as usual: ▪ there were no significant differences in depression outcomes in intervention and control patients.	▪ standardised entry criteria, and valid and reliable standardised, blinded assessments used ▪ stratification used to minimise bias from differences in recruitment methods ▪ study sample appears generally representative of older Americans ▪ participating sites and patients diverse ▪ 'real world' primary care setting of the study maximises study generalisability ▪ weak intervention outcomes for participants.

Table 4a. Evidence tables of geriatric psychiatry services offered in outpatient settings – Memory Clinics

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Luce et al. (2001) Comparative study with one year follow-up Newcastle upon Tyne, UK Grade: Level III-2	Participants 100 consecutive patients referred to the Memory Clinic (56% female, mean age 69 years) and the Old Age Psychiatry team (65% female, mean age 81 years). Inclusion criteria Referred to either of the two services. Exclusion criteria None specified.	Service description Memory clinic: based in a General Hospital within an old age psychiatry service with hospital-based multidisciplinary team providing community-oriented services to a population of almost 60,000 elderly. Provides specialist service for assessment and early diagnosis of cognitive impairment, monitoring of disease progression, trials of licensed anti-dementia drugs, and specialist clinical experience and training for medical, nursing and other staff and students. Study description Memory clinic: patients seen for an initial assessment lasting approximately two hours, including detailed medical and personal history, psychometric assessment and physical examination, CT scans. Diagnoses made, and follow-up conducted at 1 year. Old Age Psychiatry service: referrals made by GP and initial assessment carried out at patient's home by an experienced doctor. Full history, informant history, mental state examination completed. Physical examination, routine blood screen and CT scan.	The following observations were made: ▪ memory clinic patients were significantly younger, had lower levels of cognitive impairment and a wider range of diagnoses, compared with patients in a traditional Old Age Psychiatry service ▪ patients were seen at the Memory Clinic at least two years earlier in the course of the disease. There are potential benefits of early diagnosis for the quality of life of patients and carers, in terms of access to treatments, services and support networks, obtaining information and preparing for the future ▪ both the Cambridge Cognitive Examination and Mini-Mental State Examination were effective at distinguishing between dementing and non-dementing patients in the memory clinic sample ▪ angled CT-derived minimum medial-temporal lobe widths were poor indicators of dementia in memory clinic patients.	▪ study limited to description of patient characteristics and comparison of psychometric and neurological tools' effectiveness. Treatment and patient outcomes not discussed ▪ no randomisation or allocation of patients to services, rather a naturalistic/observational study ▪ assessment tools although previously validated, confirmed for effectiveness in detecting dementia.

Table 4a. Evidence tables of models of geriatric psychiatry services offered in outpatient settings – Memory Clinics *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
van der Cammen et al. (1987) Descriptive study London, UK Grade: Level IV	Participants Experimental pilot program of first 50 patients attending memory clinic. Mean age 75 years and 36% male. Inclusion criteria Referral to the memory clinic of those complaining of memory problems by GP, family/friends or patient self-referral. Exclusion criteria None specified.	Service and study description Memory clinic with aims of early detection of dementia and identification of causes of memory impairment in older persons. Team approach with nurse, physician and psychologist. Initial screen of mental abilities with cerebral function test, identification of causes of memory loss, history and mental health examination and dementia detection tests. Refer to pages 359-61 in article. Study to assess ability of Memory Clinic to identify previously undiagnosed older persons with early dementia and also shortcomings in service utilisation.	▪ a definite diagnosis was made in 2/3 of patients. Of these, half (25) were dementing (Alzheimer type) ▪ only ¼ of these identified patients had previous contact with mental health services ▪ of referrals over 50% were by GPs and another third were self referrals. Conclusion Dementia clinic beneficial in identifying those with early signs of dementia, and deficits in mental health services for earlier diagnosis.	▪ further validation required for diagnostic categories used in this study ▪ no comparison group of patients with which to compare memory clinic pilot patients.
van Hout et al. (2001) Qualitative observational study Nijmegen, The Netherlands Grade: Level IV	Participants Users (all consecutively referred patients who completed a first assessment and successfully recalled the clinic visits (n = 31, mean age 73 years, 57% females), their referrer (101 opinions from 60 different GPs) and accompanying relatives (81)) of an outpatient memory clinic. Inclusion criteria User of the memory clinic. Exclusion criteria Lack of appropriate recall of the memory clinic visit rated the interview as unreliable.	Service and study description Memory clinic: aims to provide a diagnostic, advice and treatment service for its users. A multidisciplinary team comprising a neurologist, a geriatrician and a psychologist conduct assessments according to a standardised examination. ▪ an assessment takes approximately 4.5 hours and three patient visits ▪ relatives, when available meet with paramedical staff to give an informant history ▪ assessment results are discussed in a weekly team meeting and a diagnosis made in consensus and on clinical grounds according to diagnostic criteria (DSM-IV) ▪ the team communicates the assessment results, the diagnosis, recommendations on disease management, care planning and answers questions ▪ after the last appointment most patients are referred to their GP for continuing supervision and management.	▪ both patients and relatives thought that the results of the diagnostic assessment were communicated appropriately ▪ patients and relatives were less satisfied with the diagnostic information received. In contrast, GPs were rather satisfied with the diagnostic information ▪ patients, and to a lesser extent, their relatives, were positive about the attitude of the clinicians ▪ all users positively valued the usefulness of the assessment ▪ for information to relatives about care support and handling behaviour, both relatives and GPs were dissatisfied ▪ half of the relatives who experienced stress in caregiving reported that this was not discussed. GPs often missed advice on how to manage caregiver issues ▪ the users' age and sex were not related to their opinions.	▪ because of the rather large number of patients that were unable to recall the assessment, the results of the patients' opinions have to be interpreted with caution ▪ although the working model of the memory clinic was representative compared with other memory clinics, differences exist, which may question the generalisability to other memory clinics ▪ study assesses the clinic only on the basis of user satisfaction, rather than an objective assessment of clinical outcome or service effectiveness.

Table 4b. Evidence tables of models of geriatric psychiatry services offered in outpatient settings – Day Hospitals

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Boyle (1997) Before/after study Georgia (5 counties), USA Grade: Level IV	Participants Volunteer convenience sample of 32 patients of whom only 23 completed pre/post-test program. Mean age 75 years and 22% male. 56% Dementia (Alzheimer type) patients. Inclusion criteria Volunteer patients attending day care center, 60+ years, diagnosis of a mental illness, resident in area of study. Exclusion criteria None specified.	Service and study description Geriatric day hospital running a biopsychosocial programme (Geriatric Day Treatment (GDT) programme) for mentally ill older persons. Refer to pages 51-2 in article. Effectiveness of programme was assessed using the Geriatric Depression Scale (GDS) and the Global Assessment of Functioning Scale (GAF).	▪ there was a significant difference between pre/post-test GDS scores and the GDT programme accounted for 42% of the variance in client depression scores. Results support programme decreasing levels of depression ▪ there was a significant difference between pre/post-test GAF indicators indicating better social functioning but this was not considered to be clinically significant due to small variance in GAF scores. Conclusion The GDT programme is effective in treating depression.	▪ likely sample selection bias because of small convenience sample ▪ general range of mental health conditions in participants not specific to depression patients.
Plotkin et al. (1993) Retrospective chart review Los Angeles USA Grade: Level IV	Participants The charts of 100 geriatric day patients enrolled for treatment between January 1985 and September 1989. Mean age 73 years and 27% male. Inclusion criteria Patients over 60 years, ambulatory, no significant cognitive impairment or medical problems. Exclusion criteria None specified.	Service and study description Geriatric day hospital treatment programme including psychiatric evaluation, case management, group therapy and psychotherapy and pharmacotherapy as required. Refer to page 267 in article. Medical records obtained and data abstracted using standardised form. Statistical analysis including multiple regression used to identify variables associated with patient outcomes.	▪ female patient's suffering from a depressive disorder were the most common ▪ during the first 3-months of a treatment period over half the patients were shown to experience clinical improvement ▪ variables which favoured a better outcome included longer duration of treatment, social support, functional status and diagnosis. Conclusion Geriatric day treatment provides effective care for some patients.	▪ likely selection bias as patient selection methods not well described ▪ data abstraction form not validated.

Table 4b. Evidence tables of models of geriatric psychiatry services offered in outpatient settings – Day Hospitals *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Diesfeldt (1992) Longitudinal study with five year follow-up Laren, The Netherlands Grade: Level IV	Participants All 224 consecutive new patients admitted from 1 November 1982 to 1 January 1986 to the day care department of a skilled-care geriatric psychiatry nursing home (mean age 78.5 years, 59% females). Inclusion criteria Day care admission during the specified time period. Exclusion criteria None specified.	Service description Geriatric psychiatry day centre: located in and associated with a skilled nursing facility. Offers 25 places per day, five days a week, serving a population of above 40 000 people over 65 years of age. Day care staff include several recreation therapists, a full-time registered nurse and domestic and administrative staff. A community psychiatric nurse, nursing home physician, psychologist and paramedical staff are consultants to the day care centre. Multidisciplinary team assessment is carried out for each patient, with progress monitored at regular weekly meetings.	▪ after the first year since admission to day care, less than half of the patients were still residing in the community. This number decreased by half each year, for women and men alike ▪ long-term (after 5 years) 23.2% had not been institutionalised ▪ living at home, receiving indispensable instrumental assistance from adult children, and severity of cognitive impairments clearly influenced the risk of institutionalisation in the first year after admission to day care.	▪ lack of comparison/ control group, due to ethical concerns of not offering a beneficial service such as day care to all study participants ▪ analysis of baseline and follow-up characteristics employed to determine statistical significance of differences between patients admitted to a nursing home one year after day care admission, and those remaining in the community ▪ bivariate and multivariate analysis conducted on data collected increases the likelihood of detection of true effects due to day care ▪ prospective, longitudinal follow-up (5 years) ensures cause-effect relationships correctly understood.

Table 4c. Evidence tables of models of geriatric psychiatry services offered in outpatient settings – General

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Gerritsen et al. (1995) Descriptive study Groningen, The Netherlands Grade: Level IV	Participants 96 patients enrolled in the study (mean age 76 years, 52% female); 89 informal carers (mean age 61 years, 74% female); 70 GPs. Inclusion criteria Not specified. Exclusion criteria Not specified.	Service and study description Geriatric assessment unit: an outpatient clinic within a geriatric psychiatry nursing home. Focused on patients with dementia, with an assessment procedure that takes half a day to complete. Staffed by a geriatrician, and psychologist and a medical doctor. Assessment intervention includes: ▪ auto and hetero-history-taking (including an interview with the informal carer) ▪ physical examination, ECG ▪ laboratory tests ▪ psychiatric examination ▪ psychological tests.	Data collected from the unit, and informal carers and GPs interviewed pre and three months post-assessment: ▪ the geriatric assessment unit contributed diagnosed new mental and physical disorders in some cases. Recommendations were made for monitoring, follow-up was provided in some cases, drug prescriptions were changed and other professionals were consulted ▪ the GPs valued the intervention of the assessment unit highly. They considered advice provided to be practical, they felt their geriatric psychiatry competence had increased as a result ▪ informal carers reported a decrease in behavioural problems, particularly deviant behaviour. Their competence improved slightly, particularly in terms of self-efficacy ▪ some contribution was made to early detection of disease, with a large proportion of patients referred at an early stage of illness.	▪ no control group due to practical and ethical considerations ▪ validated and reliable instruments administered by skilled and experienced interviewers to minimise research effects (learning, giving socially desirable answers) ▪ results controlled by analysing subgroups. All general analyses were repeated for groups of patients, and similar effects found in all groups.

Table 5a. Evidence tables of geriatric psychiatry services in inpatient settings – Consultation Liaison

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Cole (1991) Systematic review Montreal, Canada Grade: Level I	Participants 17 trials, with 6 non-randomised and 11 randomised. Sources: Medline 1980-1990 and Health planning and administration 1975-1990, citation searching. Key words "health services for the aged" and "controlled trials". Inclusion criteria Original study, English language, controlled trial (randomised & non-randomised). Exclusion criteria Studies looking at home services and care settings, administration structures.	Service description The purpose of the study was to evaluate the efficacy of geriatric medical services, the type of patients who most benefit from these, identify the components of services producing positive outcomes, application to geriatric psychiatry services. Refer to pages 1231-37 in article. Study description Trials were assessed for quality based on (1) randomisation and initial comparability between the treatment and control groups and (2) complete follow-up of trial participants. As a result 15 trials were finally included meeting both criteria, divided into categories: ▪ Geriatric hospital units - 4 trials ▪ Hospital geriatric consultation services - 6 trials ▪ External services – 5 trials	▪ variability in trial outcomes due to range of mental health conditions (multiple illness, cognitive decline, disability), different trial designs, patient selection methods, interventions, outcomes measures, sample size ▪ geriatric hospital units, two trials reported clinically significant results, two did not ▪ hospital consultation services, only one trial reported clinically significant results ▪ external services, four studies reported clinically significant results and one did not. Conclusion External services and some hospital units showed reductions in patient length of stay, mortality, improved ADL and discharge to the community. Consultation services showed a lack of effectiveness probably due to patient selection (either too well or too ill). Results have applicability to geriatric psychiatry services.	▪ includes range of geriatric patients with medical conditions and some geriatric psychiatric conditions. Inferences made from this study are applied to geriatric psychiatry services but these are limited ▪ analysis limited from information reported by trials ▪ limited search databases ▪ no publication bias assessment but this is likely given the limited search strategy.

Table 5a. Evidence tables of geriatric psychiatry services in inpatient settings – Consultation Liaison *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Cole et al. (1991) Randomised trial (blinded) with 2, 4, 8 week follow-up. Montreal, Canada Grade: Level II	Participants 80 hospital patients referred by multi-disciplinary team requiring psychiatric consultation. Mean age 83 years, 29% male for intervention group and mean age 82 years and 29% male in control group. Inclusion criteria Patients 65+, not admitted to ICU and no psychiatric consultation in month prior. Exclusion criteria None specified.	Service description University primary acute hospital. Refer to pages 1183-4 in article. Study description Intervention group received geriatric psychiatric consultation and follow-up at least once per week by multi-disciplinary geriatric team. Control group received usual medical care with no psychiatric consultation.	▪ there were small but positive effects on psychiatric symptoms and functional status in both groups (greater trends in treatment group) but no significant difference between groups on all scores ▪ more controls than treatment group patients discharged at 4/8 weeks but twice as many treatment group patients discharged home. Conclusion Geriatric psychiatric consultation not highly effective but better targeting required to those who would benefit most, improvements in compliance and referrals by physicians.	▪ sample frame issues – e.g., make-up and prior assessment. Small sample size, short follow-up and baseline group differences all contribute to reducing true treatment effect.

Table 5a. Evidence tables of geriatric psychiatry services in inpatient settings – Consultation Liaison *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Kominski et al. (2001) Randomised trial with six and 12 month follow-up. USA Grade: Level II	Participants 1,687 veterans in 9 Veteran Affairs sites. (814 intervention group: 97% males, mean age 69 years; 873 control group: 96% males, mean age 69 years). Inclusion criteria 60 years or older, admitted to acute medical or surgical services, mild- severe depression, anxiety, or alcohol abuse, agreement to participate. Exclusion criteria Inpatient or outpatient psychiatric appointment in preceding or subsequent six months, diagnosis of PTSD, spinal cord injury/ rehabilitation, outside catchment area, no current address, admission from nursing home, psychosis, dementia or other cognitive impairment, chemotherapy, hospice, previously assigned to UPBEAT or usual care.	Service description Veteran Affairs medical centre: provide medical and surgical services for veterans, both on an inpatient and outpatient basis. Study description UPBEAT Intervention: Unified Psychogeriatric Biopsychosocial Evaluation and Treatment programme designed to provide interdisciplinary mental health assessment, treatment (direct interventions using educational, psychosocial, psychotherapeutic and psychopharmacologic approaches) and care coordination to elderly veterans with comorbid depression, anxiety and/ or alcohol abuse. Provided by a multidisciplinary clinical team trained in geriatric psychiatry (nurses, psychiatrists, psychologists, social workers, geriatricians, nutritionists, pharmacists and other geriatric specialists). Usual care/control: including care that would usually be sought for depression, anxiety and/or alcohol abuse by veterans.	Eligible veterans were randomly assigned to UPBEAT or usual care: ▪ use of outpatient services by UPBEAT patients increased more than by usual care patients ▪ increased outpatient costs were offset by statistically significant per-patient reductions in inpatient costs ▪ UPBEAT did not reduce the likelihood of hospitalisation in the post period ▪ no significant differences were found between UPBEAT and usual care patients in alcohol abuse, anxiety or depression scores at 12-month follow-up.	▪ those who declined participation (51%) were more likely to be African American, unemployed and older, therefore results not generalisable to the entire veteran population ▪ baseline scores for anxiety, depression and alcohol abuse and demographic characteristics were relatively similar for UPBEAT and usual care participants ▪ validated, reliable psychometric measures were used for gauging anxiety, depression and alcohol abuse symptoms ▪ including patients with fewer symptoms and shorter acute episodes reduced differences in outcome between the UPBEAT and usual care groups ▪ unable to detect important sub-group differences by enrolling patients with any of three different conditions ▪ potential confounding from hospitalisation effects, pharmaceutical use, and utilisation of services outside VA medical centres.

Table 5a. Evidence tables of geriatric psychiatry services in inpatient settings – Consultation Liaison *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Slaets et al. (1997) Prospective randomised trial with 12 months follow-up. The Hague, the Netherlands. Grade: Level II	Participants 237 elderly patients admitted to the internal medicine department at Leyenberg Hospital (intervention group mean age 83 years, 67% female; control group mean age 83 years, 75% females). Inclusion criteria Aged 75 years or older and referred to the department of general medicine. Exclusion criteria Admissions for day care.	Service description Department of General Medicine: within a teaching hospital with 600 beds. The General Medicine Dept consists of four similar units, each with 40 beds. The study was conducted on two units located on different floors in the hospital. Study description Geriatric psychiatry Liaison Intervention: multidisciplinary joint treatment by a geriatric team (geriatrician/geriatric psychiatrist, specialised geriatric liaison nurse, physiotherapist) in addition to usual care. Main purpose of intervention to obtain optimal levels in basic ADL functions and mobility. The staff-to-patient ratio increased by three nurses in the intervention unit. Main components: ▪ assessment on admission ▪ generation and implementation of treatment plans, and ▪ planning and management of discharge. Usual care: services provided by physicians and nurses in another general medical unit in the same hospital but on a different floor.	Patients were randomised to either the usual care or intervention unit: ▪ substantially more patients assigned to the intervention group improved in their physical functioning (activities of daily living, mobility and help), and fewer became worse ▪ the intervention had a favourable effect on length of hospital stay. The mean length of stay was 5 days shorter for the intervention group after controlling for baseline characteristics ▪ the probability of being placed in a nursing home within 12 months of discharge from the hospital after usual care was 2.5 times greater than in case of Geriatric psychiatry liaison intervention.	▪ assessment instruments used have good diagnostic accuracy and have been shown to be valid and reliable ▪ most demographic characteristics and the health status of those in intervention and control groups similar ▪ broad inclusion criteria enhances generalisability to elderly patients on medical wards ▪ treatment assignments not hidden from patients or raters, potentially introducing bias into the results ▪ selection bias was reduced by the alternating assignment procedure ▪ controls for confounding in statistical analysis ▪ Information bias reduced by using separate and trained raters for both treatment conditions ▪ contamination of usual care with elements of intervention limited by using units on different floors with separate medical and nursing staff.

Table 5a. Evidence tables of geriatric psychiatry services in inpatient settings – Consultation Liaison *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Anderson et al. (1991) Comparative study Liverpool, UK Grade: Level III-2	Participants 811 hospital (geriatric ward) referrals and 1232 GP (domiciliary) referrals to hospital geriatric psychiatry service, mean age 78 years in each group, over 8 year period. Inclusion criteria Referrals for psychiatric consultation. Exclusion None specified.	Service and study description Referrals to Royal Liverpool teaching hospital geriatric psychiatry service for consultation. Referrals from geriatric wards to geriatric psychiatry service for consultation assigned diagnostic category by clinical diagnosis compared with retrospective review (assigned diagnostic category) of referrals by GPs for domiciliary consultation (by same consultants doing hospital referrals) to assess if changes in pattern of diagnostic groups that reflects altered attitude (education effect) towards mental disorders by general hospital departments.	▪ in hospital referral category significant change over period in all diagnostic categories except dementia, but not in GP referral group ▪ changes within groups over time but no difference between the two groups of referrals. Significant increases in hospital originated assessments of depression and reduction in acute admissions ▪ the GP referral group case-mix was stable over time despite big increase in number. Conclusion Educational effect of geriatric psychiatry liaison improving appropriate response to mentally ill.	▪ many confounding issues related to pattern of referrals not controlled for therefore difficult to establish association between training programme/education and changing referral patterns.
Swanwick et al. (1994) Comparative study Dublin, Ireland Grade: Level III-2	Participants 39 referrals from a liaison model service (mean age 72 years); 110 referrals from a consultation model service (mean age 77 years). Inclusion criteria All referrals to liaison and consultation models of service during a six month period. Exclusion criteria Not specified.	Service and study description Two different service models within a group of associated general hospitals were evaluated: ▪ *'Liaison model'*: within a unit with 394-bed capacity. In the absence of psychiatry and geriatric departments, both services were provided by visiting clinicians. The referring doctor completed a standard consultation form, accompanied by a referral letter. The assessing psychiatrist made an effort to discuss each case with the referring doctor and was actively involved with meeting family members and with ongoing patient management. ▪ *'Consultation model'*: within a hospital with 702-bed capacity, and separate psychiatric and geriatric departments and inpatient units. With no specialist consultant liaison psychiatrist, the service was provided on a consultation basis. Conditions (insufficient time and lack of proximity) made informal liaison less likely. Suggestions for management were more frequently made rather than active involvement, unless the patient was transferred to the inpatient psychiatric unit.	▪ diagnoses and suggested interventions or follow-up were not significantly different between the two models ▪ increased contact between the psychiatric and other specialties in the liaison model did not result in a markedly increased referral rate ▪ the data do suggest that a liaison model is associated with greater diagnostic accuracy by referring doctors than when a consultation style model is used.	▪ there were significant differences between the patients of the two services. Consultation service patients were significantly older, with a higher proportion of severely demented patients ▪ data relating to the actual number of admissions 65 years or older in each model were not available.

Table 5b. Evidence tables of geriatric psychiatry services in inpatient settings – Specialist Geriatric Psychiatry Units

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Norquist et al. (1995) Comparative study 5 states, USA Grade: Level III-2	Retrospective medical chart review of 2,746 patients with depression hospitalised in 297 acute care general medical hospitals in 5 states. 1,295 patients in specialist psychiatric units, 12% over 80 years, 25% male. 1,451 patients in general medical wards, 20% over 80 years and 24% male. Inclusion criteria Patient's with discharge diagnosis of depression (uni-polar, unspecified depression). Exclusion criteria No evident depression in patient.	Service and study description Study evaluates differences between the quality of care of elderly depressed patients in specialist psychiatric units in general medical hospitals and patients in general medical wards. Refer to pages 696-697 in article. Quality of care assessed by clinical review of medical records. Secondary sources used to evaluate post-discharge outcomes. Measures developed such as medical record extraction form to extract information from records on admission status, quality of care and outcomes of care.	▪ psychiatric units had greater proportions of appropriate admissions, performed better assessment and patients had a greater likelihood of receiving psychological services and greater general medical compliance than general wards ▪ follow-up data of clinical status at discharge was of better quality for patients on psychiatric units. Conclusion Data show that the quality of care of the psychological aspects of depression is better in psychiatric units while aspects of general medical care are better in general medical wards.	▪ retrospective medical record retrieval and data extraction ▪ pre-test of data extraction form to validate and check reliability ▪ issues surrounding medical record completion due to patient length of stay and health care payments.
Zubenko at al. (1992) Prospective descriptive study Pittsburgh, USA Grade: Level III-3	Participants 120 consecutive admissions of patients with Alzheimer's disease (many with behavioural abnormalities) to university hospital inpatient unit, mean age 80 years and 45% male. Mean length of stay 1 month. Inclusion criteria Patients having 1 of 4 DSM IIIR behavioural sub-types for primary degenerative dementia (of the Alzheimer type) either with delusion, with delirium, with depression or uncomplicated. Exclusion None specified.	Service and study description Patients admitted to acute psychiatric unit in major teaching hospital for treatment of Alzheimer's disease. Each patient received in-depth examination and was treated with medication, psychotherapy and behavioural techniques. Each patient assigned to one of the DSM IIIR sub-types by research staff. Refer to pages 1485-6 in article for greater detail.	▪ each diagnostic sub-type responded in typical way to treatment as reflected in changes in psychometric assessment scores used to assess cognitive impairment, psychiatric symptom severity, level of functioning ▪ over 50% of patients admitted from their home and over 66% of depressed patients were able to return home following discharge. Conclusion Short-term psychiatric hospitals are effective and efficient for helping to return patients to their own homes, for safely implementing treatments and reducing institutionalisation.	▪ no comparison group, therefore limited inference of results to mean greater efficient and effective acute psychiatric care service.

Table 5b. Evidence tables of geriatric psychiatry services in inpatient settings – Specialist Geriatric Psychiatry Units *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
De Leo et al. (1989) Before/after study Padna, Italy Grade: Level III-3	Participants 607 patients, mean age 72 years and 34% male with 362 evaluated before psychiatric unit established and 245 after over 6 years 1981-1987. Inclusion criteria Patients with psychiatric illness selected by non-specialist staff for specialist consultation. Exclusion None specified.	Service and study description Before and after study looking at impact of establishment of psychiatric unit in 1986 as part of a 500-bed geriatric hospital. Multi-disciplinary team service of geriatric psychiatry consultation. Refer to pages 135-6 in article. Before and after study looking at impact of new unit for consultations of complex psychiatric illness associated with physical illness.	▪ the service underwent changes with modifications in treatment, reductions in mean length of stay and prescribing of psychotropic drugs and increased adherence to therapies ▪ main reason or consultation was affective disorder, then anxiety disorder. Conclusion The service provided a rapid and adequate response to the complex needs of admitted patients.	▪ incomplete and inconsistent data meant there were difficulties comparing the two periods and this should be borne in mind when interpreting results.
Conwell et al. (1989) Retrospective chart review New Haven, Connecticut, USA Grade: Level IV	Participants 168 patients, mean age 70 years old and 27% male. Inclusion criteria Elderly patient 60+ years of age admitted to general hospital inpatient psychiatry unit over a 5-year period. Exclusion None specified.	Service and study description General inpatient psychiatry unit. Refer to pages 35-6 in article. Patient medical records retrospectively reviewed and cross-validated by researchers.	▪ favourable outcome responses were found in 75% of patients ▪ the profile of patients was mostly affective disorders with dementia the second most prevalent diagnosis, with 95% of patients with moderate to severe symptomatology ▪ length of stay correlated with severity of illness and diagnosis of dementia with shorter stay. Conclusion Findings suggest that acute psychiatric illness in elderly can be treated in acute setting.	▪ retrospective clinical observations may be biased towards finding improvement only ▪ no comparison group so limited inferences only can be made from study ▪ data extraction method from medical records not validated though results were cross-validated.
Craig et al. (2000) Qualitative case study Blackpool, UK Grade: Level IV	Participants A total of 8 patients, 4 clients in each of 2 mixed sex, patients over 65 years of age inpatient psychiatric wards. Inclusion criteria None specified. Exclusion None specified.	Service and study description Comparison of 2 psychiatric wards. One ward split to divide cognitively and functionally impaired compared with a combined ward containing both groups of patients. Qualitative assessment of patient and staff satisfaction over 192 hours of observation by one observer observing 4 patients in each ward over 24 hours. Refer to pages 724-26 in article.	▪ the split ward differed qualitatively from the combined ward with lower levels of stress on patients and visitors and therapeutic milieu. Conclusion Functional patients appear to benefit from the split ward system. The mixing of cognitively impaired (CI) with non-CI can effect the well being of non-CI patients.	▪ only 2 wards with 8 patients studied results not easily generalisable ▪ only 1 observer used, possible bias and no ascertainment of agreement by using 2 observers to ensure reliable qualitative evaluation.

Table 5b. Evidence tables of geriatric psychiatry services in inpatient settings – Specialist Geriatric Psychiatry Units *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Holm et al. (1999) Descriptive survey Minnesota, USA Grade: Level IV	Participants 250 patients admitted to the inpatient geriatric behaviour unit between January 1994 and December 1995 (mean age 81 years, 55% female). Inclusion (admission criteria) Diagnosis of a dementing illness, unsuccessful prior attempts at nursing home and/or outpatient behaviour management, behavioural problems. Exclusion criteria None specified.	Service and study description Inpatient unit: includes 16 beds. Staffing ratio is one nurse to every three patients. Programme model: offers comprehensive assessment and treatment of behavioural dysfunction in geriatric patients, delivered by a multidisciplinary care team (geriatrician, psychologist, nurse manager, unit nurses, occupational therapist, recreational therapist, social worker, dietitian, pharmacist, chaplain, and consultant psychiatrist and neurologist). An individualised treatment plan is created for each patient that involves pharmacological and non-pharmacological interventions together with behavioural, environmental and psychological components.	Patients observed and evaluated based on their response to the inpatient programme: ▪ improvements in global functioning were noted during the course of inpatient treatment as determined by performance on behaviour, cognitive and functional tests ▪ dramatic improvements in behaviour were seen in most patients, but improvements in cognitive and functional conditions were more modest.	▪ no control/comparison group ▪ data collection did not include severity and type of dementia, which may be related to treatment outcomes ▪ no follow-up post-discharge, thus unable to determine if gains resulting from the inpatient programme were maintained in the outpatient setting and whether there were additional benefits ▪ potential investigator bias resulting from admission and discharge assessments both conducted by the treatment team ▪ mainly descriptive/ observational in nature.

Table 5b. Evidence tables of geriatric psychiatry services in inpatient settings – Specialist Geriatric Psychiatry Units *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Hughes and Medina-Walpole (2000) Descriptive study New York, USA Grade: Level IV	Participants All residents admitted to the Transitional Care Unit were observed for a six month period under the Behaviour Management Programme. Inclusion criteria Not specified. Exclusion None.	Service and study description Transitional Care Unit (TCU): a 50-bed unit in a Veterans Affairs Medical Centre (VAMC), designed as an alternate level of care unit to provide postacute rehabilitation services to veterans as well as concentrated efforts for discharge planning to the appropriate level of care. Behaviour Management Programme: a clinical programme to improve the overall management of behavioural disturbances. Included educational efforts, team meetings, scheduled nursing behaviour rounds, recommendations for non-pharmacological and psychopharmacological interventions, improved communication and a consistent approach to documentation. Comprised the Behaviour Team (geropsychiatric clinical nurse specialist, attending physician, geriatric nurse practitioners, speech pathologist, recreation therapist, attending psychiatrist, psychiatric clinical nurse specialist, psychiatric resident physicians, and the geriatric TCU pharmacist) and the interdisciplinary staff of the TCU.	▪ a substantial decrease was noted in the percentage of residents exhibiting any behavioural episodes during the six month study period ▪ prescribing practice changed in the study period, with a decrease in the use of anxiolytic medications and an increase in the use of newer antipsychotic medications ▪ the total percentage of psychotropic medication prescribed did not change substantially ▪ most successful non-pharmacologic interventions included redirection of the resident to more appropriate behaviour, use of validation of feelings, and removal to an area of less environmental stimulation ▪ education and camaraderie was promoted among staff, and a productive liaison created between the TCU and the Psychiatry Service.	▪ the programme was not designed for formal data collection and analysis, thus limiting the strength of conclusions in regard to the success and efficacy of the programme ▪ demographic characteristics of patients not discussed, limiting ability to generalise results to other populations ▪ raw data not presented, leading to uncertainties about sample size and sufficient statistical power to detect significant effect sizes ▪ the continuous flow of new admissions and discharges on the TCU may have affected the consistent implementation of the programme.
Moss et al. (1995) Descriptive study Melbourne, Australia Grade: Level IV	Participants 110 consecutive patients admitted to an acute geriatric psychiatry unit over 5 month period (mean age 74 years, 41% male). Inclusion (admission criteria) Psychiatric illness requiring inpatient admission. Exclusion criteria None specified.	Service and study description Patients admitted (voluntarily or involuntarily) with psychiatric illness to unit assessed by interview using a geriatric mental health schedule and assigned DSM IIIR diagnosis. Organic disorders 42%, affective, 32% schizophrenia 25%. Unit contains 35 beds. Refer to page 850 in article for detailed description. Admitted patients approached/interviewed and assessed. Medical records consulted. Admission diagnosis made. Later, data on discharge obtained and treating physician rated patient in respect to admission reason.	▪ mean length of stay 29 days and analysis showed no relation between this and age, sex, cognitive function ▪ 78% of patients with cognitive function were able to return to original level of accommodation prior to admission ▪ 86% of patients improved on an outcome scale rating.	▪ no control/comparison group so it is difficult to assess the efficacy of the unit on the outcomes evaluated.

Table 5b. Evidence tables of geriatric psychiatry services in inpatient settings – Specialist Geriatric Psychiatry Units *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Porello et al. (1995) Retrospective chart review Massachusetts, USA Grade: Level IV	290 records of frail geriatric patients with comorbid psychiatric and medical illnesses and functional disabilities admitted in 1991 were reviewed (average age 76 years, 71% female). Inclusion criteria Patients meeting criteria for acute psychiatric hospitalisation. Exclusion criteria Not specified.	Service description Geriatric medical/psychiatry unit (GMPU): a 20-bed, locked, diagnosis-related group-exempt unit within a 54 bed accredited, community general hospital. Goals are to relieve emotional distress, diminish disturbed behaviour, improve function and maximise independence. ▪ comprehensive geriatric assessment focused on four aspects of care: diagnosis and treatment of psychiatric problems, recognition and management of the psychiatric complications of medical problems or their treatments, assessment and treatment of caregiver burden, and functional/evaluation and rehabilitation. Staff include: ▪ nursing staff with extensive medical and surgical experience, plus a variable amount of psychiatric training or experience. Provide on average 6.3 hours of nursing care to each patient daily ▪ two geriatric psychiatrists, each leading a multidisciplinary treatment team. Responsible for diagnosis and evaluation, psychopharmacotherapy and individual psychotherapy ▪ six general internists provide concurrent medical care, with one permanent liaison internist ▪ a psychologist and mental health counselors provide individual, group and activities therapies, and assist the nursing staff with milieu management ▪ a social worker is employed to focus exclusively as an aftercare coordinator on discharge planning and nursing home placements ▪ the multidisciplinary treatment team (consisting of primary nurses, social workers, occupational therapists, physical therapists and mental health counselors) meets twice weekly to develop and review treatment plans.	▪ primary reasons for referral to the unit included aggressive behaviour, depression and psychosis ▪ the population served by the GMPU included those with moderate severity dementia ▪ length of stay ranged from one to 65 days, with a mean of 15 days. On average, patients who lived at home stayed five days longer than patients coming from nursing homes ▪ patients admitted to the GMPU generally had at least one, and often several, established medical diagnoses (mean number of medical illnesses = 3.7) ▪ patients received a wide range of psychiatric and medical services ▪ admission of acutely disturbed nursing home residents to a GMPU appears to be a cost-effective use of hospital services.	▪ no mention of missing data, and little explanation of charts unavailable from the medical records department, raising concerns about selection bias and sample representativeness ▪ no accounting for potential differences between psychiatrists' diagnoses ▪ treatment 'outcomes' limited to length of stay and placement of patients post-discharge ▪ effectiveness not determined.

Table 5b. Evidence tables of geriatric psychiatry services in inpatient settings – Specialist Geriatric Psychiatry Units *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Riordan & Mockler (1996) Retrospective audit study London, UK Grade: Level IV	60 patients (mainly with depression, dementia, schizophrenia) admitted to a geriatric psychiatry assessment inpatient unit over 12 months. Mean age 77 years and 50% male. Inclusion criteria General admissions to geriatric psychiatry unit for psychiatric care. Exclusion criteria Not specified.	Service and study description Geriatric psychiatry assessment unit in large psychiatric Hospital. Multi-disciplinary care programme approach. Admissions received multi-disciplinary team interventions, with inventory of health problems and development of care plan. Refer to page 110 in article. Clinical audit (pilot study) of a geriatric psychiatry unit where patients had pre/post study measures of mental state, behavioural state, symptomatology. Semi-structured interview (patient, carer, service provider rating) at follow-up 2 months post-discharge.	▪ results show positive symptom change and problem resolution ▪ of 4 psychometric scales, 2 (general health –all diagnoses & geriatric depression scale) showed significant difference (improvement) between admission and discharge. Mental and cognitive state did not ▪ service provider effectiveness rated themselves higher than ratings given by patients and carers ▪ the identification of carer needs and greater client involvement in care planning.	▪ no comparison group.
Zubenko at al. (1994) Prospective descriptive study Pittsburgh, USA Grade: Level IV	Participants 205 consecutive admissions to university hospital inpatient unit, mean age 71 years and 31% male. Inclusion criteria Patients meeting DSM IIIR criteria for major depression with single or recurrent episode, with or without psychotic features. Exclusion None specified.	Service and study description Each admitted patient received detailed physical, psychiatric and mental health status quantitative assessment of psychiatric symptoms and cognitive performance at admission and discharge. Optimal management with multi-disciplinary treatment of patients treated with combination of somatic and psychotherapeutic interventions. Average duration of hospital stay 1 month. Refer to page 988 in article.	▪ good response from patients with 50% reduction in average score in Hamilton Depression Rating Scale in 3-5 weeks ▪ nearly 50% of patients experienced resolution to their depressive symptoms by discharge ▪ substantial medical and psychiatric co-morbidity identified. Conclusion Psychiatric hospital with multi-disciplinary inpatient approach to treatment of major and complicated depression effective and efficient mode of service.	▪ the effectiveness of individual treatments – e.g., ECT and antidepressants was not able to be determined in this study due to the short duration.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Brodaty et al. (2003) RCT with three month follow-up Sydney, Australia Grade: Level II	Participants 86 subjects with dementia from 11 nursing homes (mean age 83 years, 72% female). Inclusion criteria Agreement to participate, residence in nursing home for at least 1 month, significant cognitive impairment/dementia complicated by depression or psychosis. Exclusion criteria Residents unable to consent due to aphasia, lack of English-language skills, or severity of dementia; absence of depressive or psychotic symptoms.	Service and study description Geriatric psychiatry case management Involved carefully defined psychological and social treatments, and pharmacotherapy where indicated. Treatments supervised by two geriatric psychiatrists and administered by a multidisciplinary team (including a senior geriatric psychiatry registrar, an aged care psychologist, and a registered nurse). ▪ psychosocial interventions for depression (4-8 hours over 12 weeks) included provision of individual supportive therapy by the case manager and encouragement to participate more in pleasurable activities ▪ interventions for psychosis included nurse education on management and treatment of sensory impairments ▪ in both groups, residents were encouraged to participate more in general activities, families were prompted to take part in the programme, and behavioural management programmes were developed to address specific behavioural disturbances. Geriatric psychiatry consultation Management plans devised at the team meeting (pre-randomisation) provided in writing to the nursing home staff and to the resident's GP. Project team available for further consultation on request from nursing staff and/or GP during the treatment phase (current practice in nursing homes with access to geriatric psychiatry services). Standard care/control group continued to receive 'usual' treatment. Revised treatment plans sent to nursing staff and GPs after post-treatment phase assessment. Immediate feedback provided if psychopathology was a danger to the resident.	Subjects were randomly allocated to one of the three interventions: geriatric psychiatry case management, geriatric psychiatry consultation, or standard care. ▪ nursing home residents with dementia complicated by depression and/or psychosis improved regardless of intervention ▪ specialist mental health care provided directly or through consultative advice had no appreciable benefit over that evident in a control group.	▪ nursing homes stratified according to number of beds, and selected on basis of geographical proximity ▪ sample size sufficient to detect medium effect sizes only ▪ comparison of demographic characteristics of those who completed the study and those who did not, and also between subject groups revealed no significant differences ▪ potential 'leakage' of treatment techniques from resident to resident ▪ potential Hawthorne effect as a result of the assessment procedure ▪ selection of subjects according to preset, complex multiple entry criteria is not a naturalistic design, perhaps limiting generalisability to 'real-world' nursing home settings.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Lawton et al. (1998) RCT with 12 month follow-up Philadelphia, USA Grade: Level II	Participants 49 experimental and 48 control special care unit residents. 2 special care units with moderately-severely impaired individuals, housed in identical units physically designed for the care of the cognitively impaired. Inclusion criteria Receipt of care for 12 months and assessment on three occasions. Exclusion criteria Not specified.	Service description Special care nursing home units for elders with dementing illness: physically separate units with controlled access, with a physical environment designed for people with dementia. Specified criteria for admission and discharge, a designated unit director, and AD-specific programming. Study description Stimulation-retreat intervention: based on informed judgement of for whom and when additional stimulation is appropriate and when reduced stimulation, or retreat, is appropriate. The intervention comprised of four components: ▪ staff training: twice-monthly administrative planning sessions, a four hour human relations skill training programme for supervisor-level nurses, and seven hours of training on the stimulation-retreat approach for direct-care service staff ▪ interdisciplinary care planning: existing care planning team augmented by two full-time certified nurse aides (CNA), as well as a clinical psychologist and rabbi. Rotational leadership, with regular care planning and review conferences ▪ activity programming: a part-time activity therapist introduced to oversee team-prescribed activities for implementation by CNAs. Type of one-to-one contact determined by consensus at care planning sessions.	Randomisation of experimental and control groups was performed on a unit basis: ▪ the intervention clearly exerted no effect on the downhill course of the dementing illness, in terms of functioning and impairment ▪ there was no measurable effect of the programme on negative behaviours and states, but some significant effects on some positive behaviours and some affect states ▪ the stimulation-retreat programme provided a documented increase in 'quality time' for patients ▪ family support: fortified by project social worker's contact with family members before and after quarterly care planning conferences. Family members randomly selected and contacted monthly about their relative's status, and invited to bimonthly discussion groups and social gatherings.	▪ demographic characteristics for both patient groups not discussed or compared, raising possibility of selection bias ▪ methodology well outlined ▪ adequate randomisation procedure, with rationale for unit randomisation discussed ▪ assessment instruments used validated in other studies ▪ results largely insignificant, despite adequate sample size.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Opie et al. (2002) RCT, 1 month follow-up Various, Australia Grade: Level II	Participants 99 residents from 45 nursing homes were rondomised to 'early' intervention (n=48, mean age 84 years and 27% male) and 'late' (control) intervention groups (n=51, mean age 84 years and 27% male). Inclusion (admission criteria) Diagnosis of dementia, lived at home for at least 1 month and staying for at least 2 more, observed daily disruptive behaviour, rated by Cohen-Mansfield Agitation Inventory (CMAI). Exclusion criteria None specified.	Service and study description A new service with a team of 4 members providing detailed assessment and individually framed care plans with psychosocial, nursing, medical, psychotropic, pain management interventions to nursing home residents with dementia and behavioural problems. Refer to pages 7-9 in article. Resident's randomly assigned to "early" (intervention) or "late" (control) groups and observed for 4 weeks. Various psychometric scales on agitation, behaviour, mental status, depression. Pre and post intervention changes noted.	▪ improvements in outcome measures (of disruptive behaviours) for both groups ▪ significant decrease in challenging behaviours associated with consultancies ▪ staff assessments of the service were favourable. Conclusion Individualised, multi-disciplinary interventions were the most effective in reducing the frequency of disruptive behaviour and were favourably adopted by staff.	▪ complex study design ▪ Hawthorne effect where some positive changes can be attributed to staff positive expectations of new strategies.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Rovner et al. (1996) RCT, 6 month follow-up Baltimare, USA Grade: Level II	Participants 118 residents met selection criteria, 89 were randomised to intervention (n=42, mean age 82 years and 14% male) and control groups (n=39, mean age 81 years and 33% male). Inclusion (admission criteria) Patients with evidence of behavioural disorder, Psychogeriatric Depression Rating Scale (PG-DRS), primary degenerative dementia and multi-infarct dementia DSM III-R criteria. Exclusion criteria None specified.	Service and study description Activities Guidelines for psychotropic medication and Educational rounds (AGE) dementia care programme in a 250-bed community nursing home. Refer to pages 8-9 in article. Intervention group received AGE dementia care programme while the control group received usual nursing home care.	▪ at 6 months follow-up, AGE programme patients displayed significantly less behavioural disturbances and received significantly less physical restraint. Programme patients were more likely to participate in activities compared to controls. Conclusion The AGE programme reduced the prevalence of behavioural disorders and antipsychotic drugs and physical restraint.	▪ difficulties in rating behavioural dysfunction free of measurement bias.
Ballard et al. (2002) Comparative single-blind study with nine month follow-up Newcastle-upon-Tyne, UK Grade: Level III-2	Intervention group Patients of six care facilities (two nursing homes and four residential homes), within a single geographical catchment area (mean age 83 years, 77% female). Comparison group Patients of three facilities (one nursing home, two residential homes) from a second catchment area (mean age 82 years, 73% female). Inclusion criteria Completion of follow-up evaluation. Exclusion criteria Not specified.	Service and study description Psychiatric liaison intervention: delivered by a full time psychiatric nurse with a diploma in cognitive therapy. Supervision provided by a consultant old age psychiatrist and a clinical psychologist. The psychiatric nurse undertook weekly visits to each of the six facilities. Staff from the care facilities able to refer directly to the service, with review conducted within 24 hours. Specific care plans developed for residents discontinued from neuroleptic agents. Psychological interventions used in the first instance, followed by a psychiatric review if inappropriate or unsuccessful in individual cases. Each resident received a psychiatric evaluation over the course of the project, including a medication review.	▪ there was a significant overall reduction (although not discontinuation) in neuroleptic drug use in the liaison homes, but not in the control homes ▪ residents in the active liaison homes had significantly fewer GP contacts and a three-fold lower number of days in psychiatric inpatient facilities, although the latter difference was not statistically significant ▪ there was no significant improvement in resident wellbeing amongst people living in the facilities receiving the liaison service, compared to those residing in the facilities receiving the usual clinical service ▪ there was a significant reduction in the degree of expressive language function decline in the people living in the liaison facilities.	▪ comparison facilities were selected based upon a comparable proportion of residents with dementia and a similar level of disability ▪ single-blind design used, whereby raters remained blind to the treatment assignment ▪ characteristics of patients similar in the liaison and control facilities ▪ results consistent with findings from other studies.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Dean et al. (1993) Prospective evaluation/ comparative study with 12 month follow-up London, UK Grade: Level III-3	Participants 24 residents of two domuses (Domus A, n = 12, mean age 76 years, 66% female; Domus B, n = 12, mean age 74 years, 66% female). Inclusion criteria Subjects of the evaluation were individuals identified in advance by the district psychiatric services as the future residents of the two domuses. Exclusion criteria People admitted to the domuses during the study period following the deaths of original residents excluded.	Service and study description Domus units: residential units for geriatric psychiatry patients based on the domus philosophy, emphasising: ▪ importance of staff needs in addition to residents' needs, ▪ the correction of avoidable consequences of dementia and accommodation of unavoidable consequences, and ▪ the importance of psychological and emotional needs as well as physical aspects of care. Overall, the emphasis of the domus is on maintaining residents' independence and residual capacities as far as possible through active participation in domus life. Domus A: a purpose-built facility for 12 residents, all of whom are older persons with dementia requiring intensive nursing care. Residents have their own bedroom, and have shared use of toilets, bathrooms, living-rooms, a dining room, kitchen and garden. 18 full-time paid staff are employed in the unit, with four staff members working during the day and a minimum of two staff on duty at night. There is always a registered mental nurse on duty. Domestic services are provided by five members of staff. Domus B: also for 12 residents, occupied by 'graduate older people', long-stay mental hospital patients aged over 65 years admitted to continuous psychiatric care before age 65, primarily with diagnoses of chronic schizophrenia. The unit is not new-built, but a conversion of a redundant children's home. Each resident has their own bedroom with adjoining bathroom and toilet, and they share the single living room, dining room, kitchen and two gardens. There are 16 full-time and one part-time members of staff, with four staff usually on duty during the day and a minimum of two at night. Five staff members are also responsible for providing domestic services.	Residents, staff and the process of care were assessed at baseline in long-stay mental hospital wards, and at three months, six months and 12 months after the move to a domus. ▪ at 12 months, both domuses were providing more policy choice, resident control, provision for privacy and availability of social and recreational activities than a baseline geriatric psychiatry ward ▪ residents' cognitive function improved steadily over the follow-up period in both domuses, significantly so in Domus A ▪ there was also some improvement in residents' self-care skills at follow-up in both domuses ▪ residents' communication skills were rated as significantly improved by staff in Domus A at all follow-up assessments, and by staff in Domus B at six months ▪ compared to baseline, substantially higher levels of activities and interpersonal interactions were observed at follow-up in both domuses ▪ there was no evidence that staff suffered from low job satisfaction or psychological impairment at either domus.	▪ prospective design enables observation of service impact upon patient outcomes ▪ patients acting as their own controls, while minimising issues of comparability between different services, may be problematic in the case of those with dementia; but group that should have progressive deterioration naturally showed best outcomes ▪ validated diagnostic/ assessment tools used ▪ some important aspects of the units' operation were not evaluated as part of the study ▪ small sample size limits the ability of the study to detect small effect sizes.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Bartels et al. (2002) Literature review of descriptive and research reports Grade: Level IV	Thirty-three articles were found that described or reported on extrinsic mental health services in nursing homes. Inclusion criteria English language descriptive and research reports published through May 2000; articles in peer-reviewed journals. Exclusion criteria Reports on mental health services provided by full-time nursing staff; non-nursing home settings.	Service description Extrinsic mental health services: those provided on-site by specialists who are not full-time staff of the nursing home. Study description ▪ search of Medline and psychological literature databases using relevant keywords ▪ manual search of references from relevant literature.	▪ uncontrolled observational studies suggested that mental health services may result in improved clinical outcomes and less use of acute services ▪ few well-designed controlled intervention studies that use a sufficient test of effectiveness have been conducted ▪ the least effective service model appeared to be a traditional consultation-liaison service in which a lone clinician provided a one-time, written consultation on an as-needed basis ▪ reports recommend the routine presence of qualified mental health clinicians in the nursing home, allowing ongoing consultation and follow-up during episodes of acute illness ▪ optimal services are interdisciplinary and multidimensional, addressing neuropsychiatric, medical, psychosocial, environmental and staff issues ▪ among the most effective interventions are those that blend consultation with training and educational interventions.	▪ review based on research of relatively low quality ▪ meta-analysis not conducted. Analysis descriptive only.
Bellelli et al. (1998) Prospective descriptive study Brescia, Italy Grade: Level IV	Participants 55 consecutively admitted patients (mean age 81 years, 22% male) to 8 special care units (SCU). Recruited over 12 months. Inclusion (admission criteria) Dementia patients with Alzheimer's disease and with behavioural disturbance. Diagnosis of dementia on MMSE scale and examination, severe behavioural disturbance (NPI score). Exclusion criteria None specified.	Service and study description Patients admitted to special care units (8) with specially designed care programme, environment, trained staff. Multi-dimensional assessment with cognitive, functional, somatic health status, use of psychotropic drugs, physical restraints assessed at baseline and follow-up. Refer to page 457 in article. Mutli-centre study of dementia patients in SCUs, evaluated at 2, 3, 6 months	▪ reduction in behavioural disturbance (NPI) of patients in the SCUs, decrease in use of psychotropic drugs and physical restraint all significant at 6 months follow-up. Conclusion There were overall improvements in some of the outcomes evaluated but not cognitive and functional status.	▪ the NPI is a well validated assessment tool.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Chappell and Reid (2000) Descriptive study with 12 month follow-up British Columbia, Canada Grade: Level IV	Participants 510 residents with dementia, aged 65 and older, in intermediate care facilities (51 special care units, 101 integrated units; mean age at T1 82 years, 67% female). Inclusion criteria Primary or secondary diagnosis of either Alzheimer's Disease or vascular dementia (moderate- severe), with confirmatory evidence in medical charts, unlikely to die or move from the unit in the next 12 months following admission, able to communicate in English, and at least 65 years of age; agreement from family member/guardian to participate. Exclusion criteria Lack of specific diagnosis of dementia in the medical chart.	Service and study description Special Care Units (SCUs): common features include modified physical environments, physically separated units with controlled on-off access, limited admissions to residents with diagnoses of dementia, extra staffing, designated unit leadership and specialised staff training and programming. Mean number of beds in the SCU sample was 30, with mean percentage of residents with dementia 96%. Integrated care facilities: Not described in detail. Mean number of beds in the non-SCU sample was 53, with mean percentage of residents with dementia 58%.	▪ study drop-outs were on average younger and had greater functional dependency Affect at T1 predicts all outcomes examined except physical functioning. Better affect among residents directly impacts their cognitive function, agitation, social skills and expressive language. Residents in smaller facilities and public facilities deteriorate less over time in affect ▪ staff education, use of restraints, whether the unit was an SCU, percentage of residents with dementia, and age of resident were all unrelated to any of the outcomes in the multivariate analysis ▪ many non-SCUs are implementing a similar quality of care to that found within SCUs ▪ confirms US research that neither SCUs nor dimensions of care believed to reflect best practices are related to resident outcomes.	▪ units selected on stratification and representativeness judged by an expert steering committee ▪ post-facto analysis revealed no significant difference between units included in the study and those excluded ▪ outcomes assessed using validated tools/ instruments ▪ data refer only to newly admitted residents with dementia with medical chart confirmation, thus limiting generalisability ▪ although units were chosen randomly, residents were/could not be randomly assigned to SCUs and non-SCUs. The sample therefore was a convenience sample of necessity.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Joseph et al. (1995) Qualitative case study with before/after design Portland, USA Grade: Level IV	Participants, 50 requests for consultations pre-MHCT establishment and 112 requests for consultations afterwards, no information on age or sex of participants. A proportion of these seen by MHCT. Several individual cases described to illustrate service benefits. Inclusion (admission criteria) Veterans Association nursing home resident over before/after evaluation period. Exclusion criteria None specified.	Service and study description Interdisciplinary Mental Health Consultation Team (MHCT) in a specialised unit (MHCU), a 120-bed facility. Interdisciplinary group made up of mental health professionals and primary care providers. Aim to provide triage for mental health consultations, enhance communication between specialists and primary care providers, provide education in terms of enabling the implementation of treatment recommendations and patient management. Refer to pages 836-7 in article. A 9-month period prior to the implementation of the MHCT was assessed compared to an 18-month period of MHCT service.	▪ the MHCT decreased the demands for formal psychiatric/psychological consultations. Conclusion Development of MHCT means less demand for specialist consultations and increasing use of existing mental health service staff, thereby improving the efficiency.	▪ VA setting, results limited in term of applicability to NZ residential care settings ▪ lack of demographic, inclusion/exclusion criteria information about residents and objective outcome measures by which to evaluate efficacy of service.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Skea & Lindsay (1996) Quasi-experimental study Leicester, UK Grade: Level III-2	Participants Residential unit (1) 19 residents, mean age 79 years and 21% male; residential unit (2) 31 residents, mean age 78 years and 77% male. Inclusion criteria Primary diagnosis of dementia. Exclusion criteria None noted.	Service description Two models of long-term residential care for older persons suffering dementia. Refer to pages 234-5 in article. (1) A 24-bed community hospital with traditional hospital care (2) A charity-run residential facility with policy emphasis on enhancing resident's independence and choices. Study description Prospective comparative study where observational data using an assessment tool (Quality of Interactions Schedule (QUIS)) collected at base line, 6 months and 12 months on residents transferred to charity run residence (unit (2)). Also performed on the long-stay ward (unit (1) at 12 and 24 months. Results for unit (1) and unit (2) compared with a long-stay mental health ward assessment.	▪ at 12-months there was an increase in the quality (not quantity) of staff-resident interactions in unit (1) c.f. a long-stay mental health ward but both showed increase at 24 months ▪ there was a much greater increase in both the quality and quantity of interactions in unit (2) at 6 and 12 months cf. long-stay mental health ward ▪ changes associated with unit (2) but not with unit (1) were drop in observed depression, no decline in ADL, improvement in communication skills but there was a significant increase in mortality in unit (2).	▪ limitations with comparison groups as resident characteristics quite different, therefore unmatched. For example, different sex-ratios, care approaches, unit (1) residents were worse in terms of cognitive and physical disablement, higher mortality in unit (2) due to patient mix being drawn from a variety of long-stay wards.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Swartz et al. (1999) Descriptive study with three year follow-up Tel Aviv, Israel Grade: Level IV	Participants 48 residents treated at the clinic during the first year of operation (retired members of the Israeli Workers Union, mean age 79 years, 77% female). Inclusion criteria Treatment at the psychiatric clinic during 1993-1994. Exclusion criteria Not specified.	Service description Old age home (OAH): with 370 residents, operated by the Israeli Workers Union for retired members. Residents elect to self-refer to the OAH when they experience a reduction in social resources. Located within an urban community of 180,000, composed of six-storey buildings offering single or double-roomed apartments, with services offered such as a central dining room, movie theatre, recreational activities and a synagogue. GP available five days a week in a small clinic, with a specialist in psychiatry available for consultations and follow-up once a week. Treatment based on combined pharmacotherapy and supportive psychotherapy.	▪ 16 (33%) patients had died, and 5 (10%) had left the OAH for institutions offering higher levels of nursing care, or back to the community ▪ 30 (62%) had not used the clinic's services beyond the first year of diagnosis and treatment ▪ in the depression diagnostic group, 50% (8/16) had since died, mainly relating to cardiovascular morbidity. Seven survivors had achieved partial-complete remission ▪ in the dementia diagnostic group, 44% (4/9) had died, one was transferred to a higher level nursing care institution, and 4/9 patients had deteriorated cognitively but remained in the OAH.	▪ small sample size, with diagnostic categories containing too few patients to enable conclusions regarding treatment outcome ▪ there is no comparison group ▪ residents of the OAH may not represent the elderly population as they elected to reside there ▪ patients' records reviewed by investigators not involved in diagnosis and treatment ▪ two psychiatrists used to interview available subjects, with validated diagnostic tools and high inter-rater reliability ▪ interventions were not designed for research, but rather reflected common geriatric psychiatry practices in Israel.

Table 6. Evidence tables of geriatric psychiatry services in long-term residential settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Tang et al. (2001) Descriptive study Hong Kong Grade: Level IV	Participants 45 patients receiving psychiatric care in a 'care and attention home' (71% females, mean age 84 years). Inclusion criteria All recipients of psychiatric assessments in the period August 1998 to June 1999. Exclusion criteria None noted.	Service description Care and attention home (C & A): Provides residential care, meals, personal care and limited nursing care for older persons with poor health or physical/mild mental disabilities with deficiency in activities of daily living but mentally suitable for communal living. Staffed by nurses and social workers, with support from registered medical practitioners. Study description Telepsychiatry intervention: geriatric psychiatry team provided monthly assessments of patients via teleconferencing, between the regional hospital and a C & A home located 3 km away. Included assessment of new cases, follow-up assessments, and urgent evaluations.	▪ significant non-response rate from patients (45% for one question), although 42% of all patients said they liked teleconsultation ▪ staff at the C & A home viewed teleconsultation favourably in terms of saving time, comparison to traditional on-site visits, and providing greater healthcare support to clients. However, staff did not find the teleconferencing equipment easy to use ▪ the cost of teleconferencing per consultation was HK$91.81, compared to HK$105.78 for on-site consultations, making it more cost-effective ▪ the authors concluded that telepsychiatry is feasible in a care and attention home setting and that it has the potential to provide virtually all existing services.	▪ inclusion of patients unable to communicate or give responses to the evaluation questions (due to deafness, cognitive impairment, aphasia or language barriers) ▪ sample size too small to allow firm conclusions to be drawn ▪ lack of control or comparison group ▪ generalisability limited to the C & A home setting ▪ cost-effectiveness includes set-up and maintenance costs.
Tourigny-Rivard et al. (1987) Qualitative case study Ottawa, Canda Grade: Level IV	Participants 21 residents seen over 18 month period, mean age 74 years and 42% male. All but 2 patients on psychotropic medication and all had received some form of care from house physicians. Inclusion criteria Referral reasons of "aggressive/uncooperative/agitated behaviour" and depressed appearance. Exclusion criteria None specified.	Service and study description Monthly gero-psychiatric consultation (patient/staff educational) in a 50-bed nursing home. Refer to pages 363-4 in article. Feedback was provided by staff on observations made about the effects of the teaching consultation service and also outcomes were reviewed for each patient.	▪ nursing home patients benefited through the greater staff awareness of patient emotional problems, the increased frequency of therapeutic programmes provided by staff. Conclusion Improved patient quality of life and staff professional development resulted from the clinical and teaching input of geriatric psychiatrists.	▪ qualitative staff evaluation of consultative/teaching service used as a proxy for determining service effectiveness and patient outcomes.

Table 7. Evidence tables of geriatric psychiatry services in rural settings

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Kaufman et al. (2000) Uncontrolled test of a psychosocial intervention with six month follow-up Alabama, USA Grade: Level III-3	Participants 78 patients of a not-for-profit home health care agency serving a rural, multi-county catchment area (average age 77 years, 81% female, 99% white). Inclusion criteria 60 years or older, cognitively intact (with score of eight or better on the Mental Status Questionnaire). Exclusion criteria None mentioned.	Service and study descriptions Home health care agency: provides medical and nursing care at home to homebound, chronically ill individuals. Psychosocial intervention Based on a task-centred model, consisting of 8-10 sessions during which participants identified and worked to achieve a limited number of behaviourally specific and measurable goals related to emotional well-being, personal relationships and physical environment. Delivered by mental health clinicians.	▪ patients who completed the brief, task-centred psychotherapeutic intervention reported improvements in their emotional well-being and indicated significant reduction of the problems associated with the target complaints that were the focus of the intervention activities ▪ Global Severity index scores (measuring distress severity) were found to be significantly decreased, although the degree of change was small ▪ changes on self-reported health status were improved but not significant ▪ perceived social support was improved post-treatment and at follow-up, but was not statistically significant. Satisfaction with social contact remained unchanged post-treatment, but had decreased at follow-up ▪ at six month follow-up, patients reported fewer problems with their target complaint than pre-treatment.	▪ comparison conducted of those who completed treatment with those who dropped out ▪ assessments conducted by staff members other than those providing treatment ▪ instruments used to measure intervention outcomes widely used and validated ▪ lack of control group reduces ability to control for confounding ▪ intervention conducted in real-life home settings of the study participants ▪ selection method of participants (handpicked within the same home health care agency) limits generalisability ▪ apparent treatment effect may be due to extra attention and supportive interaction provided to participants rather than the specific therapeutic intervention used.

Table 7. Evidence tables of geriatric psychiatry services in rural settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Abraham et al. (1993) Descriptive, comparative study Virginia, USA Grade: Level IV	Two mental health outreach programmes to rural elderly, in Iowa and Virginia. Inclusion criteria Not applicable. Exclusion criteria Not applicable.	Service and study description Iowa Outreach programme: ▪ target population of rural elderly aged 55 and older, racially and culturally homogenous, noninstitutionalised ▪ main clinical disciplines are nursing, psychiatry and social work, with service coordination provided by nurses ▪ referrals from psychosocial screening in community settings, interagency case management, mental health outreach specialists, and hospital discharge planners ▪ centralised operational model, with comprehensive home assessment, in-home services and case management services ▪ care planning based around regular clinical staff meetings with focus on assessment, additional diagnostic work, diagnosis, discussion of therapeutic issues and modalities ▪ focus on short-term involvement with clients. Virginia Outreach programme: ▪ target population of rural elderly aged 60 and older, racially and culturally heterogenous, non-institutionalised ▪ nursing, psychiatry, geriatrics, social work and lay volunteers comprise the clinical disciplines involved, with nurses providing coordination ▪ referral sources health and social service departments, community groups and members, hospital discharge planners, individuals ▪ decentralised operational model, with geriatric psychiatry nursing home assessment, in-home services and case management services ▪ clinical staff meetings provide forum for specific case discussion, focus on assessment, identification of additional diagnostic work, diagnosis, discussion of therapeutic issues and treatment modalities, and care planning ▪ establishment of longer duration care relationships.	▪ demographic and diagnostic client data suggest that the outreach programmes are effective in servicing known rural patient populations who otherwise might not receive needed services ▪ outreach programmes are argued to be effective models of delivery services to geographically and/or socially isolated elderly populations.	▪ study is descriptive in nature, without analysis of the observations made and outlined ▪ patient outcomes resulting from receipt of care are not explored ▪ efficacy and effectiveness of services is not quantified.

Table 7. Evidence tables of geriatric psychiatry services in rural settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Atkinson and Stuck (1991) Service description North Carolina, USA Grade: Level IV	Inclusion criteria Eligible clients were those persons aged 60 and older with mental disorders (median age 71). Exclusion criteria Not specified.	Service and study description Senior Adult Growth and Enrichment (SAGE) Programme: was a community support demonstration project funded to provide outreach and day treatment for older people with mental illness (enrolment of 16 people per day). Staffed by a programme director and a rural outreach social worker, and support provided by a psychiatric consultant. Evolved to a differentiated model of day treatment that tracked clients according to their disabilities and potentials. The day treatment programme, staffed by two social workers and a part time instructor, operated 5 hours a day and was designed to be flexible and responsive to individual needs. Two main groups were established: ▪ *transitional group* for individuals referred upon discharge from psychiatric hospitals for depression and anxiety. Therapy based on a cognitive-behavioural model, identifying and changing cognitive distortions as well as encouraging new, more rewarding behaviours. Activities designed to encourage adoption of new behaviour ▪ *community support group* composed of people with severe and persistent mental illnesses. Focus on rehabilitation and improving quality of life. Case management provided to assist caregivers and clients in accessing services. Remotivation therapy combined with reminiscing to facilitate members' contributions. The most successful aspect was the structured focus on volunteer participation.	▪ outreach addresses two important obstacles: physical barriers (lack of transportation or declining mobility) and the stigma attached to mental illness and mental health care ▪ the flexible group programming at SAGE Hall permitted enhanced individualisation and expanded the service capacity of the day treatment programme ▪ experience at SAGE Hall demonstrates that older people will use mental health day treatment services ▪ a system of tracking clients according to functional level proved to be successful.	▪ patient outcomes resulting from receipt of care are not explored ▪ efficacy and effectiveness of services is not quantified.

Table 7. Evidence tables of geriatric psychiatry services in rural settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Atkinson and Stuck (1991) Service description North Carolina, USA Grade: Level IV *(Continued)*		The outreach component, located in a rural county in the catchment area, was staffed by a social worker with specialised training in aging. ▪ consultation, education and clinical services provided to older people and their families ▪ community 'gatekeepers' encouraged, with distribution of information brochures detailing how to identify older adults at risk and how to access SAGE services ▪ psychosocial education groups held throughout the county and examined topics such as normal aging, understanding depression, and medications. A support group was established for caregivers, where knowledge and skills were enhanced ▪ home visits permitted more complete, accurate assessment of functioning and environment. Information, referral and case management also provided, in addition to supportive counseling where required for family members ▪ case management provided to older rest home residents with psychiatric diagnoses, and weekly groups conducted to increase socialisation and enhance mental functioning. Group treatment offered also.		

Table 7. Evidence tables of geriatric psychiatry services in rural settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Buckwalter et al. (1991) Comparative study Iowa, USA Grade: Level III-2	Participants Outcomes evaluated using different samples. Experimental centres (n=383, 29% male) and two matched control centres (unknown). 30 clients followed-up prior to initiation of treatment and afterwards. Inclusion criteria Non-institutionalised older persons, 55+ years old, within prescribed geographic area, nursing home residents with potential to return to community placement. Exclusion criteria None specified.	Service and study description Elderly outreach programme (EOP) with an integrated approach encompassing a variety of health, mental health and human service agencies. Refer to pages 409-10 in article. Purpose of service to identify community living older persons in need of mental health and social services. Referral to multi-disciplinary outreach team with comprehensive in-home assessment and implementation of/co-ordination of treatment plans including referrals to medical/social services. Referrals from on-site community psychosocial screening, case management, Gate Keepers, mental Health outreach specialists, institutional settings.	▪ EOP "at risk" clients characteristics were older, widowed, female and living alone ▪ after implementation of EOP over a 2 year period there was no significant difference in the need for care in the experimental centres but significant increase in need for care at control centres ▪ the effectiveness of services shown from changes in screening measures with significant improvement in depression and psychological symptoms. Conclusion An EOP provides an effective preventive outreach programme.	▪ inadequate sensitivity of measures used, small sample sizes and questionable appropriateness of proxy measures used to ascertain mental health care needs.

Table 8. Evidence tables for geriatric psychiatry services provided to minority/ethnic groups

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Daker-White et al. (2002) Literature review Bristol, UK Grade: Level III-3	67 articles were obtained for review. Inclusion criteria English language, focus on dementia care or dementia care services with minority ethnic groups. Exclusion criteria Papers with a clinical, diagnostic or treatment focus, non-English language papers, patient or carer materials, conference proceedings, letters and correspondence.	Service description Dementia care/dementia care services: provide care specifically for those with dementia (including models within search terms below). Study description Search terms: Dementia: Alzheimer's Disease, Huntingdon's disease, chorea, Lewy body, Picks disease, frontotemporal lobe, presenile, early onset, younger onset, AIDS/HIV related, vascular, cognitive impairment. Minority ethnic groups: minority ethnic groups, ethnic minorities, ethnicity, black people, race, racial, Asian. Services: mental health service, health service, memory clinic, hospitals, psychiatrist, community mental health services, community mental health team, community care, social services, social care homes, nursing homes, residential facilities, residential care.	▪ people with dementia and their carers from ethnic minorities do not use services in the same numbers as others ▪ the most important issue for minority ethnic groups in dementia care literature is the effect that language ability has on cognitive assessment and ultimately, dementia diagnosis ▪ available evidence does not support the view that that instruments used to assess cognitive function are culturally biased ▪ there was a lack of consensus about whether specialist services should be organised for minority ethnic groups, reflecting lack of evidence of the efficacy of different models of service provision.	▪ descriptive/thematic analysis only, lacks analysis of empirical evidence, effect size ▪ methodological flaws in some selected studies ▪ exclusion of non-English language papers misses relevant studies.

Table 9. Evidence tables for geriatric psychiatry services across settings

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Lippert et al. (1990) Comparative study with six month follow-up Toronto, Canada Grade: Level III-2	Participants Three groups of 30 patients: patients age 60 and over in a general hospital (GH, median age 69 years, 50% female), patients under age 60 in a general hospital (GHY, median age 39 years, 53% female), and patients in a home for the aged (HA, median age 85 years, 73% female). Inclusion criteria Recipient of psychiatric consultation in home for the aged or general hospital. Exclusion criteria None specified.	Service and study description General hospital: with 700 acute-care beds, university affiliated. Consultation/ liaison (C/L) team full-time, consisting of a staff psychiatrist and a senior psychiatric resident. Home for the aged: a 360-bed nursing home that is part of a centre for geriatric care, also affiliated with a university. Full-time C/L team available, including a staff psychiatrist and a senior psychiatric resident.	▪ urgent referrals were made much more frequently in GH than in HA, and more consultations for management alone were suggested in HA than GH ▪ dementia as a primary diagnosis was much more frequent in HA, whereas delirium was predominant in GH ▪ GH and HA did not differ with respect to types of interventions, apart from significantly more contacts for psychotherapy in HA ▪ allied health professionals were seen more commonly in HA, and medical staff contacted much more frequently in GH ▪ the characteristics of psychiatric consultation were similar for the elderly and the young in a general hospital. In contrast, the diagnostic profiles of the patients and many consultation characteristics differed significantly for the elderly in an HA as compared to the elderly in a GH ▪ elderly in long-term care represent a unique population for whom specialised services are required.	▪ group of young GH patients included to provide a comparison with psychiatric consultation in older GH patients ▪ assessment of inter-rater reliability not performed, which may limit the conclusions of the study ▪ minimisation of potential confounding attempted with study design (longitudinal, collection of baseline characteristics) ▪ differences between the three groups in terms of age and primary diagnoses, potentially affecting outcomes. Patients referred in the home were older, more likely to be female, and were referred after months or years in the home compared with those in the hospital setting ▪ significant differences between length of institutionalisation for GH, GHY and HA patients ▪ both the GH and the HA are academic institutions, in which fee-for-service (FFS) remuneration is not an issue. Limits generalisability to other FFS-based services.

Table 9. Evidence tables for geriatric psychiatry services across settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Wills and Leff (1996) Comparative observational study North Thames, London, UK Grade: Level III-2	Participants 92 hospital patients recruited from six geriatric psychiatry (EMI) wards and 82 community patients; 61 relatives of hospital patients and 49 relatives of community patients. Inclusion criteria Not specified. Exclusion criteria Not specified.	Service and study description Team for the Assessment of Psychiatric Services (TAPS): formed to evaluate the closure of two hospitals. Geriatric psychiatry wards: the number of staff in the hospital was 79, with staff: patient ratios on average 1: 6. Supervisor/staff ratio 1: 3. National Health Services (NHS) Trust facilities: A. a former maternity hospital converted into two units/ wards for 20 residents each, surrounded by 5 geriatric wards. Staff wear nursing uniforms and the ethos is of geriatric wards, with regular ward rounds by a consultant psychiatrist. On-site physio and occupational therapy provided, and some organised activities off the unit B. a former family mansion in an affluent residential area. 3-storey building converted to provide the top floor for staff and 2 lower floors for 24 residents. Facility also offers respite care. Regular ward rounds by the consultant psychiatrist. NHS Trust facilities observed to have 1: 4 staff/patient ratio, with 1: 3 supervisor/ staff ratio. Social Service Facilities: A. a converted three-storey house in a residential road, for seven residents. Ratio of staff to residents very high, with staff from Social Services, engaged in nursing tasks B. a single-storey purpose-built unit for 24 residents. Managed by Social Services with both Social Services and former NHS staff. Both settings have lost contact with professional OT services. Medical care provided by GPs, with one district nurse for 24 elderly, frail residents in the latter setting. Consultant psychiatrist on call if needed. Staff ratios 1: 2 and 1: 5 respectively, supervisor/ staff ratio 1: 4.	▪ hospital relatives were significantly more likely to express dissatisfaction with a number of service features than community relatives ▪ the community patient group showed less disturbed behaviour and lower levels of dependency than those in the hospital setting. Findings from the group of 27 patients for whom data from both settings is available suggest that this is a reflection of differences between hospital and community-based care practices ▪ the average percentage observation time for social contact was significantly greater in the community settings ▪ in all areas in which a significant difference between the hospital and community settings were observed, these differences favoured the community setting.	▪ there was significant overlap between the hospital and community groups, with 27 patients in both settings in the study period ▪ possibility of response bias, the most dissatisfied relatives may have declined to take part ▪ different characteristics of the hospital and community clients another potential source of bias: the community sample was less dependent than the hospital sample ▪ methodology not particularly clearly outlined, with omission of inclusion and exclusion criteria ▪ little mention of baseline patient characteristics.

Table 9. Evidence tables for geriatric psychiatry services across settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Draper (2000) Systematic review New South Wales, Australia Grade: Level III-3	116 papers reviewed that meet the inclusion criteria. Inclusion criteria English language papers on service delivery evaluation in 'old age psychiatry', 'geriatric psychiatrys' and 'geriatric psychiatry'. Exclusion criteria Studies of long-term institutional care were excluded.	Service and study description Adult psychiatry wards: characterised by a mix of older and younger patients, staffed by psychiatric nurses and psychiatrists. (Level IV quality evidence) Acute geriatric psychiatry inpatient units: specialise in mental health care for elderly with acute mental health problems. (Level III quality evidence) Medical wards: geriatric medical services, in which assessment and treatment planning is conducted by geriatricians. (Level III) Consultation/liaison old age psychiatry services: including general CL services taking responsibility for the elderly, CL service provision by old age psychiatry services, and collaboration between CL and old age psychiatry. (No evidence) Old age psychiatry day hospitals: part of larger hospitals, to provide short-term rehabilitation services for community-based elderly with mental health problems. (Level IV) Community old age psychiatry services: including multidisciplinary community geriatric psychiatry teams conducting home assessments, and CPN case management. (Level II) Outreach services to nursing homes: including geriatric psychiatry nursing and geriatric psychiatry consultations. (Level III-2)	▪ the majority of studies indicate that old age psychiatry services have positive acute treatment outcomes, particularly with depression ▪ there is insufficient evidence to determine which processes of care are associated with better outcomes ▪ pluralistic evaluations indicate that carers often have unmet needs and are not as positive about outcomes ▪ there have been no controlled comparisons of service delivery provided by other services ▪ in conclusion, controlled trials and audits indicate that old age psychiatry services are effective.	▪ types of service provision not described in detail ▪ lower quality evidence included ▪ meta-analysis of effect sizes and statistical information not conducted. Analysis qualitative and descriptive in nature ▪ provides a broad overview of literature spanning geriatric psychiatry services.

Table 9. Evidence tables for geriatric psychiatry services across settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Hickie et al. (2000) Retrospective clinical audit with two year follow-up. Sydney, Australia Grade: Level III-3	99 public mental health service patients with major depressive illness: geriatric psychiatry services group (n = 44, mean age 76 years, 80% female); mental health service community care group (n = 34, mean age 57 years, 62% female); inpatient services group (n = 21, mean age 73 years, 57% female). Inclusion criteria Patients aged 50 years and over presented to public mental health services of St George district for treatment of a major depressive episode during 1995. Exclusion criteria Depression secondary to another medical or psychiatric disorder, or substance abuse.	Service description Geriatric psychiatry services: a specialised outpatient and community service which treats persons aged over 65 years at the onset of neuropsychiatric disorders. Mental health service community care: Community-based adult mental health teams provide services to persons who develop psychiatric disorders prior to age 65 and may continue to see those who grow old. Inpatient services: 18-bed psychiatric unit attached to a general hospital. Principal admission service for the district for general adult psychiatry patients including those 65 years and older. Study description ▪ medical records and clinical notes reviewed for medical diagnoses and additional details ▪ clinical outcome was assessed initially by the treating physician between 20 and 38 months following initial presentation ▪ measures of outcome included: final global outcome of depression, patient illness course since 1995, cognitive impairment, current living circumstances, medical morbidity, ongoing medical and psychiatric care.	▪ standard community-based adult mental health teams were least likely to provide comprehensive assessment to patients, and were less likely to communicate with other key agencies ▪ by contrast, the specialised geriatric psychiatry service placed more emphasis on comprehensive medical and psychiatric assessment and provision of continuity of care with family practitioners ▪ the long-term outcome for depression for patients aged 50 years of age treated by the community-based adult mental health teams was particularly poor, with 44% unchanged or only mildly improved at follow-up ▪ this may reflect the inherent characteristics of the patient group however, with earlier age of onset and presence of more chronic illnesses at presentation.	▪ baseline characteristics variable between groups, affecting comparison ▪ services had different target groups, and practices, affecting outcome comparison ▪ the study did not assess the quality of treatments provided to patients within the services ▪ outcome variables not blindly or independently assessed.

Table 9. Evidence tables for geriatric psychiatry services across settings *(continued)*

Study citation, source and design	Study sample, inclusion and exclusion criteria	Service design features	Interventions and Outcomes	Comments
Bultema et al. (1996) Before/after study Chicago, USA Grade: Level IV	Participants Several different samples of patients used to evaluate different outcomes. 24 patients (12 treated before CP model implemented and 12 after) for quality of care outcomes. 153 patients in pre-pathway group, ICD-9 CM 296.20-296.39 discharged between September 1992 and August 1993 and 58 patients during pathway implementation for length of stay outcomes. Inclusion criteria Geriatric patients with depression. Exclusion criteria None specified.	Service and study description A clinical pathway model pilot tested and evaluated in a 750-bed gero-psychiatric unit. The clinical pathway was a standard range of interventions for geriatric patients with depression carried out by each discipline for each day of a patients' targetted 14-day stay. This included consultations, protocols for labs and psychological assessments, other diagnostic procedures, a timetable of recommendations for psychopharmacologic and other treatments, discharge planning events. Refer to pages 32-8 in article.	▪ significant quality improvements identified in clinical pathway group with greater number of medical consultations, numbers of examinations in the first 24 hours post-admission, staff contact with relatives and outside agencies c.f. pre-pathway group ▪ significantly lower length of stay over 6-month period than pre-pathway group. Conclusion Positive effects of Clinical pathway model in gero-psychiatric care of older patients.	▪ service evaluation, proxy measures of service quality. Patient health outcomes unknown ▪ characteristics of comparison groups unknown, differences in these could account for study results rather than any effect of the service model.

SECTION 3

The following is a descriptive overview of the key components of published evidence-based specialist geriatric psychiatry service guidelines and protocols and limited specified expert opinion literature. No attempt has been made to appraise the quality of the publications or the evidence base. Reviewed articles are in alphabetical reverse date order.

SYNOPSIS

This section is a descriptive summary of actual and proposed psychiatric services, position or consensus statements and service frameworks for older people. The literature relating to service provision examples tends to be supported by underlying principles, common sense practice and anecdotal evidence, rather than on robust research evidence. Quality indicators are often suggested but have not been evaluated.

General consensus

- low levels of access for older people with mental illness to specialist geriatric psychiatry services
- poor recognition of psychiatric illness in older people by GPs and families because of:
    - denial of mental illness by older people and families/carers, insidious subtle nature of onset impedes recognition, subsyndromal symptoms and altered presentation in older people, symptoms denied by patient, complex comorbidity, compensation by family members for cognitive deficits and behavioural symptoms, tolerance of unusual behaviors in rural/remote areas, and ageist acceptance of cognitive decline and psychiatric symptoms in older people.
- lack of service provision and specialty trained staff
- stigma of mental illness and reluctance to enter service
- older people often enter specialist psychiatric services at crisis point
- need for comprehensive collaboration and integration (temporal, longitudinal, geographic) of geriatric and geriatric psychiatry services with well defined responsibilities
- multidisciplinary biopsychsocial and cultural approach recommended with assessment, treatment and plan management, multidisciplinary mobile teams
- assessment and management most appropriate at home
- GPs as primary care doctors for older persons, referral/liaison with other services
- lack of support for families and carers of patients with chronic debilitating psychiatric disorders – e.g., dementia, more focus upon families/caregivers of this sub-group of patients
- need for further education of geriatric psychiatry primary and secondary care health professionals and unskilled workers
- need for more specialist psychogeriatic trained staff, expertise in early detection, diagnosis of mental health conditions, preventive strategies
- paucity of evidence-based practice or service evaluation in geriatric psychiatry speciality.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion

Publication title, author and origin
British Geriatrics Society (2003) Recommendations for specialist services UK
Service concept, setting, staffing and other components
Mental Health services ▪ MDT staffing ▪ secondary care services ▪ acute assessment and rehabilitation beds ▪ day hospital assessment and treatment ▪ community assessment ▪ memory clinics ▪ outpatient clinics ▪ support services including respite care ▪ facilities and protocols for early diagnosis and management of depression and dementia ▪ procedures for liaison with geriatric and acute specialties ▪ procedure for use of cholinesterase inhibitors for dementia ▪ liaison between general services and old age psychiatrists. Specialist services with policies and guidelines ▪ delirium and dementia ▪ routine memory and cognitive function testing ▪ restraint (chemical or physical) ▪ use of anticholinesterase ▪ advocacy services ▪ support for carers ▪ specialist services need to develop a health promotion culture. Quality indicators ▪ use of major tranquillisers ▪ adherence to antidepressant use protocols.
Evidence or rationale
▪ expert opinion.

Publication title, author and origin
British Geriatrics Society Guidelines for collaboration between physicians of geriatric medicine and psychiatrists of old age UK
Service concept, setting, staffing and other components
Principles ▪ specialist health services for the elderly should be unified ▪ particular professions maintain their specificity ▪ assessment liaison between geriatricians and psychogeriatricians included in formal strategies ▪ adequate resources for medical, psychiatric and social services for the elderly ▪ placement of patients according to needs not available resources – e.g., bed availability or by negotiation if needs diverse or relevant to both services ▪ collaboration of whole MDTs ▪ reciprocal training between the two specialties mandatory for higher qualifications ▪ physicians and psychiatrist able to diagnose delirium and dementia, but referred to geriatrician for mostly medical management and psychiatrist for behavioural management ▪ referral and placement relating to presenting problem not health history ▪ speed of referral dependent on urgency ▪ joint assessment or separate assessment units available to both disciplines ▪ geriatricians and psychiatrists of old age should have representation on strategic committees.
Evidence or rationale
▪ guidelines/principles.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Brodaty, Draper and Low (2003) Seven-tiered model of service delivery for the behavioural and psychological symptoms of dementia (BPSD) Australia
Service concept, setting, staffing and other components
Mental Health services ▪ seven-tiered model of service delivery based on severity and prevalence of BPSD. Tier 1: No dementia. Management: general prevention, though specifics unproven Tier 2: Dementia with no BPSD. Management: selective prevention, preventive or delaying interventions, though lack research Tier 3: Dementia with mild BPSD. Management: primary care workers Tier 4: Dementia with moderate BPSD. Management: specialist consultation in primary care Tier 5: Dementia with severe BPSD. Management: dementia-specific nursing homes or case management under a specialist team Tier 6: Dementia with very severe BPSD. Management: Geriatric psychiatry or neurobehavioural units Tier 7: Dementia with extreme BPSD. Management: Intensive specialist care unit.
Evidence or rationale
▪ expert opinion, proposal.

Publication title, author and origin
American Association for Geriatric Psychiatry (2002) Mental health and medical care of older adults USA
Service concept, setting, staffing and other components
▪ mental status evaluation is an integral part of geriatric assessment and primary care providers should be reimbursed for initial assessment and follow-up care of mental health problems ▪ mental health care for elderly should be accessible and integrated into coordinated comprehensive services that promote continuity of care ▪ assessment and treatment of mental illness should be available across geriatric health services ▪ payment and insurance cover should be on par with general medical care ▪ services must be physically accessible, affordable and culturally appropriate ▪ appropriate incentives for referral to geriatric psychiatry and other geriatric mental health services ▪ geriatrician and psychogeriatricians should be included on managed care and Medicare carrier advisory boards to ensure non-discriminatory coverage for mental health services ▪ geriatric mental health component should be included into all geriatric and psychiatric curricula at all levels including specialists, nurses, psychologists, social workers , pharmacists and rehabilitation specialists ▪ primary care providers need to be competent to recognise, manage and refer older people with mental illness ▪ continuing education on geriatric psychiatry and referral criteria to primary health care providers including GPs ▪ GPs and psychiatrist re-certification examinations should test basic competency in geriatric mental health ▪ support for research in late-life mental disorders and models of services provision is needed ▪ older people should be included in clinical drug trials.
Evidence or rationale
Position statement ▪ elderly patients with mental health problems often do not seek out or are unable to access specialty mental health services ▪ geriatric patients often have complex interactions of medical and psychiatric illness and disability ▪ weighted payment towards general cf. mental health care is discriminatory against elderly patients with mental illness ▪ complex and special needs of older people necessitate comprehensive coverage and reimbursement ▪ there is an inadequate number of certified psychogeriatricians and geriatric psychiatry trained health professionals ▪ ageing of population and substantial prevalence of mental disorders of late-life ▪ most mental health research is centred around young or middle aged adults without medical comorbidity or physical disability.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
British Columbia Ministry of Health Services (2002) Guidelines for elderly mental health care planning for best practices for health authorities Canada
Service concept, setting, staffing and other components
Goals ▪ reduction of stress ▪ maintenance of function ▪ autonomous living. Principles of Elderly Mental Health Care ▪ client and family centred; involves the person, carers and family ▪ goal oriented; reduces stress, promotes function and autonomous living and independence ▪ accessible and flexible; readily available, integrated and coordinated services provide individualised continuity of care ▪ comprehensive; considers physical, psychological, social, financial and spiritual needs through a variety of professionals in all settings ▪ specific services; relevant for the elderly population ▪ accountable; quality assurance and monitoring incorporates research findings to determine optimal methods of service. Key elements ▪ health promotion and early intervention is neglected in the elderly mental health field maybe because of pessimist view of dementia ▪ education at all levels including patient, carers, family informal and formal caregivers. Programmes for education and training of service providers ▪ family support and involvement ▪ psychosocial rehabilitation and recovery giving patients as much control as possible through choice and minimum interventions ▪ environmental milieu (i.e., housing) promote ageing in place with provision of home care and home help services and respite care ▪ integrated care and continuous service through case management and integration of information systems providing individualised client centred care. Shared care across disciplines and between informal and formal care providers ▪ defined quality, improvement and evaluation processes and framework ▪ trained and supported volunteers, mentors and peer counselors provide and receive mutual benefits, support and personal growth ▪ advocacy and protection from individual to systemic population level. Levels of service ▪ primary care services the backbone of elderly mental health care GP, home nursing, home support services. Specialised training and supports needed. Shared or interdisciplinary community-based primary care cost effective and efficient. Knowledgeable coordination and collaboration among caregivers and service providers ▪ secondary care for more complex cases outreach community-based services, inpatient services, day hospital and outpatient clinics. Specialist care by professionals trained in geriatric mental health. Psychiatry or geriatric psychiatry provides education and consultation to care providers. Direct services provide assessment, recommendations, direct care, indirect care through consultation or shared care, competency and risk assessments, consultation, education, research and evaluation, private consultation and inpatient geriatric psychiatry consult liaison services ▪ tertiary care highly specialised services including inpatient and outreach/research services for complicated behaviours or disorders including long stay care, rural and remote community outreach, research, teaching and emergency response ▪ effectiveness depends on connection with psychiatric expertise and collaborative relationships with home and community care ▪ goals must be stated, achievable, measurable and appropriately evaluated.
Evidence or rationale
Guidelines ▪ elderly population increasing ▪ result in service pressure if demand not met ▪ prevalence of mental health problems between 17 and 30%. ▪ best practice for care guidelines don't specifically address needs of the elderly ▪ normal ageing complicates the presentation and treatment of mental health conditions ▪ cognitive or behavioural disturbances require longer admissions ▪ limited number of long-term care beds so need to promote ageing in place ▪ need innovative approaches to cater for increasing service pressure ▪ delirium 13% but often missed and elder abuse 5.4% ▪ limited amount of published research addressing mental health for older people ▪ practice wisdom still valued.
Recommendations
▪ discreet service components need to be organised in a comprehensive, coordinated way to meet the diverse and often multiple needs of the elderly ▪ demented and depressed elderly are primarily cared for by primary care, GPs, home support, family and residential care facilities. Some require specialised mental health services ▪ research and evidence-based practice is the foundation of developing services.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Canadian Association of Gerontology (2002) Issues in the delivery of mental health services to older adults Canada
Service concept, setting, staffing and other components
Mental Health services ▪ community outreach with home assessment of patients and consultation with long-term care facilities ▪ broad framework, multi-disciplinary teams used for assessment, treatment, and planning ▪ continuity and coordination in service provision ▪ goals of health care to include a reduction of distress to patient/family, improvement and maintenance of function, mobilisation of individuals capacity for autonomous living and independence ▪ specialised geriatric psychiatry services focusing on diagnosis of difficult cases and referral back to the family physician for treatment, development of treatment plans involving individuals and family and where necessary special services, coordination of services, assessment related to legal matters i.e. competency, family assistance, consultation to community agencies and programmes, geriatric/medical-surgical wards in hospitals and long-term care facilities, promotion of research, education, field training.
Evidence or rationale
▪ guiding principles, expert opinion.

Publication title, author and origin
Cole (2002) Public health models of mental health care for elderly populations Canada
Service concept, setting, staffing and other components
Public Health models of Mental Health Care for Elderly ▪ identification of a population at risk and implementation of a population-based intervention ▪ screening of a population at risk, identification of individuals at risk and implementation of risk factor abatement programmes for these individuals ▪ screening of a population at risk, identification of individuals with symptoms or disorders, and implementation of treatment programmes for these individuals. NB: Cole gives research evidence for each model rather than service descriptions
Evidence or rationale
Narrative review/expert opinion ▪ a relatively small proportion of elderly people with mental health disorders have contact with geriatric psychiatry services ▪ traditional services don't address subsyndromal illness in elderly ▪ public health models of mental health care may be alternatives to traditional clinical services ▪ these models include identification of problems, screening, prevention or selective assessment and intervention.

Publication title, author and origin
Phipps & O'Brien (2002) Memory clinics and clinical governance UK
Service concept, setting, staffing and other components
Memory Clinic services ▪ aim: to improve dementia care with memory clinics as one part of pathway approach to higher quality care ▪ memory clinic service focussing on management and treatment of patients presenting with early signs/symptoms of cognitive impairment before manifestation of a diagnosis is reached ▪ memory clinic services to concentrate on newly identified group with mild cognitive impairment (ICM), clarification of diagnosis, referrals for treatment. Pathway for care differs to those with dementia. Follow-up and if dementia identified link with community/clinical services. Provision of 'best practice ' care, audit and evaluation of care and patient/carer surveys. Multi-disciplinary education, training and research ▪ memory clinic quality through structure, process, outcome and clinical governance systems in place.
Evidence or rationale
▪ narrative review, expert opinion.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Draper (2001) Consultation liaison geriatric psychiatry. Australia
Service concept, setting, staffing and other components
Consultation Liaison Geriatric Psychiatry ▪ teaching and consultative role to non-psychiatric health workers ▪ usually in a general hospital ▪ development linked with psychiatric units in general hospitals ▪ some overlap with non-age related psychiatric consult service. Expertise required ▪ understanding of forced dependency ▪ impact of hospitalisation ▪ uncertainties of treatment ▪ diagnostic difficulties ▪ non-ageist attitude ▪ legal aspects ▪ knowledge of community resources ▪ clinical ethics. Three models of service 1. geriatric psychiatry or consult liaison service - part of the geriatric psychiatry service or part of general non-age related psychiatric consult service. 2. consultation or liaison models - consult model is referral for psychiatric assessment only - liaison model where psychiatric "consultant" becomes part of the patient's management team. 3. hybrid models - collaboration between geriatric and geriatric psychiatry services in integrated units or units in close proximity - most referrals from general medical, geriatric, neurological services surgical referrals from orthopaedics post hip surgery. Consult-liaison services appropriate to other settings i.e., emergency rooms, nursing homes and general practice (primary care).
Evidence or rationale
Expert opinion/book chapter ▪ ageing populations ▪ high rates of psychiatric patients in general hospitals ▪ 27-95% of older general patients have mental disorders ▪ comorbidity is common ▪ low referrals related to ageist attitude that cognitive decline is usual with age or more concern with physical problems. Geriatric psychiatry or consult liaison service ▪ few apparent service differences but a higher referral rate for age related service ▪ often age related service referrals related to discharge service planning ▪ geriatric psychiatry more likely to arrange community follow-up important in aged care services ▪ non-age related services tend to be hospital based with little discharge input ▪ higher referral rate ▪ higher degree of diagnostic accuracy by referring doctors ▪ increased reviews by the psychiatric consultant ▪ improved compliance with psychotropic recommendations ▪ increase in elderly referrals has resulted in the recommendation that consultant liaison psychiatrists should have geriatric psychiatry training ▪ a shortage of geriatric psychiatry consultants has restricted service provision ▪ use of a consult-liaison to supplement psychiatric consultations ▪ underutilisation of psychiatric consult services due to missed diagnosis or recognition of symptoms ▪ use of screening instruments may improve referrals ▪ education of non-psychiatric staff may increase referrals. Benefits of geriatric psychiatry consult service ▪ geriatric psychiatry unit as part of general psychiatric consult service effective ▪ reduced hospital stays ▪ reduced costs ▪ increased recognition of depression ▪ improved physical functioning ▪ fewer nursing home transfers ▪ increased use of community services post discharge ▪ there is no evidence of difference in treatment outcomes.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Orb et al. (2001) Best practice in geriatric psychiatry care Australia
Service concept, setting, staffing and other components
Best practice ▪ continual ongoing evaluation of current practice and development of new practice initiatives ▪ based on research evidence rather than personal preferences or expert knowledge and opinion ▪ involves objective evaluation of clinical outcomes and review of procedure books, clinical guidelines, current research and clinical practice ▪ scientific research evidence builds on clinical expertise and judgement – i.e., using individual clinical experience with the best available external scientific data. Clinical services ▪ assessment ▪ treatment ▪ prevention ▪ rehabilitation ▪ support. Quality indicators ▪ integration ▪ accessibility ▪ appropriateness of service ▪ multidisciplinary focus.
Evidence or rationale
Best practice ▪ emphasises evaluation of consumer satisfaction through evidence-based outcomes rather than cost alone ▪ best practice questions traditional practice ▪ leads to quality and continuous improvement of services ▪ research component needed to guide practice ▪ should be based on systematic identification of scientific data. Geriatric psychiatry service delivery ▪ growing number of elderly ▪ geriatric psychiatry requires a range of community-based and hospital-based staff and resources ▪ stigma associated with mental illness ▪ low priority to mental health consumer rights ▪ lack of evidence-based practice in geriatric psychiatry ▪ lack of reliable data on mental health status of Australians ▪ lack of data and psychiatric treatment outcomes ▪ lack of research output in geriatric psychiatry due to lack of support, heavy workloads and insufficient training in research methodologies, inadequate staffing and resources ▪ clinical guidelines based on consensus of expert opinion ▪ Integration avoids duplication and reduce stigmatisation ▪ mental illness in older people is complex and multifactorial.
Recommendations
Expert opinion of proposed best practice model Best practice ▪ tends to depend on meta-analysis of quantitative RCT research and reject other methodologies which limits knowledge that can't be measured numerically. Qualitative methodologies should be integrated to provide psychosocial and cultural aspects of human behaviour ▪ requires evidence-based guidelines a consensus or non-consensus approach should only be used in absence of scientific evidence ▪ involve all stakeholders including consumers and carers in evidence-based practice ▪ a best practice model will result in more goal orientated, coherent and efficient services ▪ integration and communication are key elements to best practice. Geriatric psychiatry service delivery ▪ public education ▪ availability of a range of services inpatient, outpatient, domiciliary care, respite care, day hospital, day care ▪ collaborative with other agencies geriatric psychiatry services should be linked with geriatric services and psychiatric services and community support groups ▪ close proximity to consumers homes ▪ continuous responsive access 24/7 ▪ affordable ▪ consumer friendly ▪ multi disciplinary ▪ minimal intervention ▪ optimal role for carers and family ▪ multidisciplinary focussing on biopsychosocial and cultural needs ▪ GP pivotal role in any best practice model ▪ continuous quality evaluation ▪ promote independence and quality of life ▪ multidisciplinary case management ▪ provides continuity of care.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Katona (2000) Psychiatry of the elderly: the WPA/WHO consensus statements UK
Service concept, setting, staffing and other components
First consensus statement 1996 ▪ needs a multidisciplinary approach to address psychological, physical and social aspects of ageing ▪ community orientation ▪ emphasis on abilities ▪ aim to improve quality of life rather than alleviate symptoms ▪ restoration of health ▪ minimise disability ▪ preserve autonomy ▪ address needs of carers and family ▪ close follow-up ▪ education for primary health care workers and mental health professionals in mental health care of the elderly ▪ establish a multi-disciplinary resource and expertise centre. Second consensus statement 1997 ▪ good health and optimal quality of life human rights ▪ right of access to services ▪ recognised needs met ▪ services adapted to local needs ▪ older people with mental health problems and family and carers involved in care planning ▪ government recognition of and collaboration with non-governmental organisations. Services: Aim for prevention, early detection, comprehensive assessment and acute management ▪ comprehensive ▪ accessible ▪ responsive ▪ Individualised ▪ trans-disciplinary ▪ accountable ▪ systematic. Third consensus statement 1998: Education for health professionals, patients, carers, family, public policy makers and general public Generic core curriculum elements ▪ processes of ageing ▪ demography, economics and politics of ageing societies ▪ epidemiology, pathology, clinical features, assessment, diagnosis, treatment and management of mental disorders of old age ▪ physical disorders and impairments of function common in old age ▪ significance of interdependence of mental, social and physical factors in old age ▪ principles of health promotion and preventative psychiatry of old age ▪ ethical and legal issues ▪ principles of planning provision and service evaluation ▪ needs of carers ▪ end of life issues ▪ communication skills ▪ positive attitudes.
Evidence or rationale
Consensus statement from WPA/WHO ▪ increasing longevity ▪ high prevalence of functional and organic mental disorders in old age ▪ high relapse rate of functional disorders in old age ▪ absence of resources.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Moak (2000) Geriatric psychiatry and managed care USA
Service concept, setting, staffing and other components
▪ potential for improvement in geriatric psychiatry services by managed care organisations (MCOs) through integrated services across a continuum of care ▪ need cautious and slow approach ▪ prolonged period of observation, on going assessment and cautious trials of treatment, and rehabilitation ▪ standard clinical pathways might be inappropriate to comorbidities ▪ lower threshold to hospitalisation needed for elderly ▪ may require more intense and prolonged treatment ▪ require functional assistance and appropriate facilities and equipment beyond what is offered in conventional adult mental health treatment ▪ managed care organisations should have contracts with geriatric specialty programmes ▪ provision of transport to outpatient programmes can offset costs against inpatient care ▪ providing families with education and support will reduce denial of problems or inappropriate demand for tests, consultations and treatments ▪ hybrid models of geriatric and geriatric psychiatry units managed co-jointly by geriatrician and psychogeriatrician optimum to complex presentations and needs of frail elders ▪ reimbursement for both services and care with cost allocation if services separated ▪ outcome measures should include improved function despite possible modest improvement in illness specific symptoms ▪ a composite outcome instrument is need to reflect differences in outcome expectation for elderly patients ▪ out come instruments may need modification – e.g., reliance on family or carer ratings cf. self rating and inclusion of old age psychiatry descriptor – e.g., dementia symptoms ▪ education for health professionals, carers, families and the public will improve appropriateness of demand for service and confusion over benefits ▪ reimbursement for prescriptions must be flexible to provide for individually tailored drug regimes for frail elderly ▪ need management information systems ▪ screening, education, preventative medicine, case management and disease management under specialist geriatric mental health services ▪ geriatric psychiatry services should be placed in a primary care setting ▪ recognition by funders of geriatric psychiatry services as a specialty ▪ psychogeriatricians should receive reimbursements for full range of medical evaluation, pharmacology and management ▪ programme for identifying common mental health and social problems ▪ geriatric case management ▪ availability of specialist geriatric psychiatry consultation ▪ continuing education at all levels ▪ appropriate outcome measure instruments ▪ disease management programme for dementia ▪ involvement of a geriatric psychiatry specialist in advocacy, planning, utilisation management, case manager supervision, development of prevention and management programmes, prescribing guidelines, clinical supervision, education, consultation and direct service provision.
Evidence or rationale
Narrative review/expert opinion ▪ high cost of care for frail elders with multiple problems ▪ shrinking reimbursement ▪ elderly fastest growing population segment ▪ elderly use disproportionate amount of health dollar ▪ failure to treat mental health problems associated with higher overall medical costs ▪ people with Alzheimer's disease use four times volume of psychiatric services of non-demented elderly ▪ unique needs of elderly not well served by conventional commercially managed care models resulting in undertreatment, cost-ineffective services, suboptimal outcomes and poor utilisation management ▪ comorbid disorders, atypical presentations, chain reactions and complications of illness and side effects of medications or other treatment, overlapping symptoms, attribution of new symptoms to existing conditions can result in inappropriate utilisation management, poor treatment and inappropriate denial of service ▪ frailty caused by burden of comorbid illness, sensitivity to medication, functional impairment, age related decline of organ system physiologic reserve capacity causing vulnerability to complications of illness and treatment ▪ executive brain impairment as distinct from cognitive impairment may result in insight without decision making capacity hence non-compliance or refusal of interventions ▪ functional impairment concurrent with physical and mental ill health ▪ MCO often do not recognise Alzheimer's disease as a psychiatric domain and deny psychiatric services ▪ geriatric psychiatry care more appropriate to the primary care model than the adult psychiatry model.
Recommendations
▪ need innovative service delivery systems and quality care ▪ integration of geriatric and primary care geriatric services in an aggressively case managed model incorporating expert knowledge of the unique problems of the frail elderly.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Wilcock (2000) Oxford Textbook of Geriatric Medicine 23.5 Memory disorders clinics UK
Service concept, setting, staffing and other components
Common components ▪ hospital or community-based ▪ provide medical, neuropsychological, psychiatric and functional assessment, laboratory tests, EEG, ECG, urine, neuroimaging, radiography, social assessment, family and personal history ▪ facilitate access to support and community services ▪ provide a focus for education and research ▪ usually organised by psychiatrists/psychogeriatricians ▪ include a variety of other disciplines – e.g., physician, neurologist, geriatrician, nursing, psychology, occupational therapy, social workers, counselors ▪ supportive drug treatment and therapies and treatment of comorbidities ▪ management strategies including medications.
Evidence or rationale
Expert opinion ▪ increasing number of people with dementia and other memory disorders ▪ need for early recognition in view of new drug therapies available and being developed ▪ need to maximise function and support patient and family/carers ▪ most dementias are Alzheimer's type, vascular or Lewy body ▪ also treatable conditions and differential diagnoses – e.g., depression, anxiety, delirium or concurrent conditions.

Publication title, author and origin
Banerjee (1998) Organisation of old age psychiatry services UK
Service concept, setting, staffing and other components
▪ requires multifaceted interventions ▪ requires a complex web of formal and informal services ▪ four common elements: community assessment and treatment, day care, acute inpatient care, long stay care.
Evidence or rationale
Narrative review ▪ specialist geriatric psychiatry services available for small proportion of mentally ill elders ▪ only UK recognises geriatric psychiatry training as a psychiatric specialty ▪ given by geriatricians, psychiatrists, primary care physicians, neurologists and psychogeriatricians ▪ low levels of recognition of depression in older people and recognition not linked to action ▪ 10% of older people with dementia and 6% with depression have contact with geriatric psychiatry services ▪ lack of evidence-based health care and clinical and cost effectiveness and paucity of evidence-base for services lays them open to attack ▪ ageing populations and increases in the oldest old ▪ complex comorbidity of physical and mental disorder usual ▪ high levels of physical and psychiatric morbidity among the oldest old ▪ results in impairment, disability and handicap ▪ multiple service use ▪ scare health resources ▪ increasing demand for psychogeriatirc services ▪ real patients and circumstances not included in RCTs ▪ opportunity costs other than financial health dollar costs – e.g., to carers.
Recommendations
▪ education for primary care health teams, secondary health care, geriatric psychiatry services, older people and society ▪ psychogeriatricians to transfer skills to primary care physicians ▪ teaching training for psychogeriatricians ▪ liaison and training links between geriatric medicine and geriatric psychiatry ▪ multidisciplinary, multi agency approach ▪ home assessments more valuable as provides "real' assessment and more information ▪ need high quality research and evidence of effectiveness of simple generalisable interventions by primary care practitioners ▪ evaluation of different models of care ▪ open referral systems from all services, family, self and public rather than GP only referral.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Bane (1997) Rural mental health and aging: implications for case management USA
Service concept, setting, staffing and other components
Gatekeepers programmes ▪ training of non-health professionals to identify and refer cases – e.g., bank tellers, delivery people, mailman. Outreach programmes ▪ onsite psychosocial screening in community settings – e.g., church. Training models ▪ training of rural non-mental health, health professionals in recognition and management of mental health problems. Case management ▪ coordinate services and promote collaboration between services to meet needs of at risk rural elderly.
Evidence or rationale
Expert opinion ▪ older adults underrepresented as recipients of mental health services ▪ most common conditions are depression and dementia ▪ evidence that preventative interventions are effective ▪ stigma associated with mental health problems ▪ barriers to access for mental health care in rural areas case management and outreach and educational models of service provision can help older people access mental health services ▪ older people tend to consult primary physician rather than mental health services ▪ many older people lack appropriate vocabulary for emotional issues ▪ mental health professionals have a bias against working with older people ▪ lack of training programmes ▪ poverty ▪ lower educational status ▪ rural life stressors ▪ services clustered in regional centres ▪ geographic and social isolation ▪ primary care physicians not trained to identify and treat mental health problems.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Brodaty et al. (1997) Psychogeriatrics and general practice in Australia Australia
Service concept, setting, staffing and other components
Interface between general practice and psychogeritrics ▪ resurgence of general practice in Australian health care ▪ GPs key element in coordination and delivery of aged care mental health services in Australia ▪ attempts to integrate general practice with other sectors of health care with development of Divisions of General Practice- local groupings of GPs within an area with established mechanisms for communication with local health care planners, hospitals, community health services and consumer groups to improve coordination of care ▪ ACAT (Age Care Assessment Teams of geriatrician, nurses and allied health staff) often extend role into geriatric psychiatry assessment and management where there is no geriatric psychiatry service. Shared care ▪ a collaborative approach to coordinating care between specialists and primary care providers including GPs ▪ aimed at improving efficiency of specialist and outpatient care and to transfer coordination of care to the GP ▪ improved continuity of care ▪ educational and supervisory interaction between geriatric psychiatry service and GP more effective than consultative model. Training initiative ▪ masters level courses for GPs in geriatrics and geriatric psychiatry ▪ the Mental Health Project, RACGP and RANZCP set up in 1995 to review training needs for primary practice in psychiatry, however no inclusion of old age. Psychiatry National Action Plan for Dementia Care ▪ developing training packages, assessment tools and strategies for GP management of patients with dementia. Ministerial Task Force ▪ developing guidelines for psychotropic prescribing in residential care and three monthly medication reviews.
Evidence or rationale
Narrative review Problem ▪ GPs have difficulty with diagnosis and management with depression and dementia in old age ▪ lack of confidence and experience and variable knowledge ▪ few perform regular cognitive screening ▪ residential care survey identified 80% of residents cognitively impaired, 30% depressed, 43% have daily behavioural problems, 59% are on psychotropic drugs and at least half of the antidepressant doses were subtherapeutic ▪ most patients in residential care with psychiatric conditions are managed by GPs or nurses ▪ Lack of medical input into policy or education in residential care ▪ Medicare funding does not pay for prolonged consultations required with patient and care givers ▪ older patients with depression more likely to be prescribed psychotropic medications and less likely to be referred to a specialist ▪ old age psychiatry service has developed in a piecemeal fashion ▪ some areas have integrated services but others rely on adult psychiatry or geriatric services ▪ survey showed 1: 30,000 of psychogeriatricians to older people ▪ lack of geriatric psychiatry services in rural area ▪ poor communication, service coordination and resource availability ▪ focus on community care is increasing the challenge for GPs and psychogeriatricians managing patients at home. ▪ limited input from mental health services or private psychiatrists in residential care ▪ most consults by public sector psychogeriatricians, geriatricians and ACATs.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Canadian Mental Health Association Ontario Division (1997) Policy consultation document respecting older persons with mental health geriatric psychiatry issues Canada
Service concept, setting, staffing and other components
Principles and recommendations Empowerment ▪ consumer and family orientated services allowing self determination, choice and preference ▪ public education programmes. Person driven ▪ services and supports based on individual need not diagnosis ▪ providers have adequate training. Individualised ▪ services and supports tailored to individual needs with range of options and preferences. Holistic ▪ comprehensive approach to social, psychological, racial, cultural, political, spiritual and biological issues ▪ education of providers. Flexible and responsive ▪ service responsive to change over time ▪ assessment readily available long-term/secure beds available to those needing them. Accessibility ▪ accessible in terms of hours, affordability, outreach and transport ▪ central contact point ▪ long-term care support including housing. Poverty barriers addressed non-discriminatory ▪ sensitivity and equity in terms of culture, language, gender, sexual orientation and race education to providers ▪ non-discrimination policies. Support to care givers ▪ support and resources for families and caregivers support groups and initiatives. Emphasis on training and education ▪ psychiatric education for physicians and geriatric psychiatry training for psychiatrists ▪ information and education for family, caregivers and volunteers.
Evidence or rationale
▪ expert opinion and policy/consensus statement.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
WHO and WPA (1997) Technical consensus statement on the organisation of care in psychiatric elderly Geneva, Switzerland
Service concept, setting, staffing and other components
Mental Health services ▪ quality care for older people with mental health problems should be comprehensive, accessible, responsive, individualised, trans-disciplinary, accountable, systematic ▪ care should focus on preventive strategies through early identification of mental disorders, comprehensive medical and social assessment including diagnosis preferably the first being in the individuals home, management with comprehensive and coherent care plan, continuous care, patient and care-giver support, information, advice and counseling, advocacy, residential care, respite care, spiritual and leisure care provision ▪ service components with centrality of individual patient and family surrounded by component care services provide overlapping, integrated, unified system of continuing care (page 6 in consensus document). Multidisciplinary teams ▪ the lead component in organising other components of services is the Multidisciplinary Specialist Team (CHMT) with assessment it's main responsibility. In-patient services ▪ inpatient services with acute inpatient units with specialist assessment for range of mental disorders, may include rehab. Hospital respite care for chronic/severe mental illness and behavioural problems or to give carers a break. Continuing hospital care for patients with chronic/severe mental illness and behavioural problems. Day hospitals ▪ acute services offering assessment and treatment who can be maintained at home supported by multidisciplinary team. Out-patient services ▪ providing assessment, diagnosis, and treatment for persons able to live in the community. Outpatient services should be close to in-patient services and may involve subspecialty clinics such as memory clinics. Other ▪ liaison services between facilities for older persons with mental health disorders and general/geriatric medicine, general psychiatry, social agencies, residential facilities. Primary care team with initial responsibility for identification, assessment and management of mental health problems in older persons, referral decisions to CMHT. Community and social support services to enable older persons to remain at home (home care, day care, residential care, respite care, self-help groups etc). Prevention by team to prevent relapses of mental health disorders, identification of risk factors in older persons – e.g., hypertension, alcohol, substance abuse). Coordination and collaboration with other professionals, family, carers, primary care, including education.
Evidence or rationale
▪ consensus statement from WHO and representatives of non-governmental organisations under WPA meeting in 1997.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Chalifoux et al. (1996) Mental health services for rural elderly: innovative service strategies USA
Service concept, setting, staffing and other components
▪ need rural specific and rural sensitive mental health services for elderly ▪ need to redesign and increase mental health services to rural elderly ▪ need to address recruitment and retention of certified mental health professionals especially those specialising in geriatrics ▪ require a comprehensive array of services to support mentally ill rural elderly in the community ▪ need to support rural cultural beliefs and values ▪ need a multi agency geriatric mental health specialist ▪ cooperative agreements with nearby urban centres ▪ recruitment and retention incentives ▪ more research and information re areas of concern for providers ▪ multiple integrated systems and joint specialty mental health planning will accommodate multiple pathology common in elderly, reduce stigma and therefore improve access and compliance ▪ ongoing education including distance learning for primary care physicians and health professionals in mental health assessment and management ▪ establishment of a consult-liaison group of geriatric mental health professionals available by phone or referral to rural primary care health professionals ▪ more responsibility for nurses and non-medical health professionals in initial assessment with back up of primary care physician for referral or prescription of psychotropic medications ▪ need seamless flexible continuity of care ▪ integration of structure and processes ▪ efficient information transfer between services and staff.
Evidence or rationale
Narrative review/expert opinion ▪ broad policy recommendations re rural health mental health services do not address needs for rural elderly ▪ elderly more likely to reside in rural villages or small towns ▪ rural elderly at higher risk for life stresses and mental disorders cf. urban elderly ▪ rural elderly tend to be poorer, female, white, have chronic medical conditions and at risk for lower quality of life ▪ higher prevalence of psychiatric disorders in rural elderly (20-27%) cf. all elderly (15-25%) ▪ many physical illness have psychiatric manifestations ▪ depression most common psychiatric illness in elderly ▪ rural elderly "a vulnerable yet resistant population" ▪ altered presentation of depression among elderly makes diagnosis difficult and often missed in primary care settings ▪ elderly tend to deny or minimise depressive symptoms ▪ 12-23% of rural elderly considered at risk but only 1% use mental health services ▪ inadequate resources, facilities and geriatric mental health staff ▪ services clustered in cities ▪ long distances, lack of transportation and weather impede coordination and communication ▪ staff recruitment and retention problems ▪ service reimbursement and funding difficulties ▪ mental health services tend to be delivered by general medical care facilities by primary care physicians, generalist nurses, social workers and indigenous helpers ▪ rural hospitals receive lower funding and rural elderly [pay on average 6.1% more for health care expenses ▪ rural geography, tax and resource base, power structure and value systems differ from urban areas and affect delivery of mental health services ▪ services may be hindered by stigma, cultural beliefs and values – e.g., mental health problems often considered the domain of the family or church in rural areas ▪ 60% of care for mental illness is provided exclusively by general medical providers ▪ quality of mental health care in rural primary care settings in substandard ▪ primary care physicians consistently underestimate, misinterpret or neglect psychiatric aspects of health care due to atypical presentation of symptoms in elderly, lack of mental health focus and pessimism and lack of confidence and training ▪ generalist rural health service provision decreases mental health focus ▪ funding restrictions tends to give priority to other age cohorts – e.g., children. Positive features ▪ greater tolerance for deviant behaviour in rural settings ▪ more residential care facilities cf. community care services ▪ more sense of community ▪ fewer bureaucratic barriers ▪ smaller more stable population.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
The Royal Australian and New Zealand College of Psychiatrists (1995) Relationships between geriatric and geriatric psychiatry services New Zealand and Australia
Service concept, setting, staffing and other components
▪ co-joint geriatric and geriatric psychiatry services are preferable ▪ referrers have option of explicit or combined service referral ▪ referrals triaged by representatives of both services ▪ cross referral between services available ▪ when services are separate, catchment areas should correspond ▪ co-joint medical appointments across services ▪ services work together ▪ responsibility related to assessed needs ▪ division of responsibility between services clearly defined ▪ mutual trust in each others judgement ▪ education in each other's disciplines.
Evidence or rationale
▪ expert opinion position statement.

Publication title, author and origin
Royal Australian New Zealand College of Psychiatrists (1993) Psychiatry services for older persons Australia/New Zealand
Service concept, setting, staffing and other components
Mental Health services ▪ GPs are primary care doctors for older persons and must be able to refer patients to psychiatrists with appropriate access to hospital acute/continuing care beds, support from allied health/public and private psychiatric community ▪ psychiatric services for older persons in close liaison with geriatric medical services. Clear responsibilities of the two services, policies for dementing persons referred to specialist care in both inpatient and community settings ▪ psychiatric services for older persons taking responsibility for a defined catchment, ideally identical to that of geriatric medical services, with close liaison between the two, referrals from area defined by local arrangements ▪ coordination of facilities, including acute, rehab, respite and long stay beds, day hospital outpatient and domiciliary assessment and care services ▪ multi-disciplinary and mobile service, with home and institutional visits by staff usually prior to admission ▪ University Department of Psychiatry, development of research projects on older persons psychiatry.
Evidence or rationale
▪ position statement/principles.

Publication title, author and origin
Abraham et al. (1991) Outpatient geriatric psychiatry nursing services: an integrative model USA
Service concept, setting, staffing and other components
Outpatient services ▪ multi-disciplinary model with comprehensive care (physical, emotional, mental health) in a continuity of care. Services with longitudinal access, psychological access, geographical access and financial access. Specialised geriatric psychiatry nursing skills and home/family emphasis with support/assistance at home, coordination with services/agencies, coordination with family and caregivers, participation in individual, group and family interventions and nursing home placement ▪ geriatric neuropsychiatry clinic model. Objectives include evaluation of geriatric patients with neuropsychiatric and behavioural disorders, emotional -physical disorders. Provision of multi-disciplinary psychiatric, medical neuropsychological and noosing expertise both affordable and available. Geriatric psychiatry training and forum for exchange of ideas and information ▪ services offered include psychiatric nursing assessment, psychiatric evaluation, neuropsychologial screening and continuing care to patients, families and caregivers also full neuropsychological testing and consultative services to other health care providers ▪ initial assessment using a geriatric psychiatry nursing assessment protocol, psychiatric assessment protocol, neuropsychological screening protocol, nursing interventions (education of patients/family with accessing/using community resources, counseling and psychotherapy, adaptation of home environment, transition counseling, caregiver services, supportive phone contacts, community collaboration and consultation.
Evidence or rationale
▪ narrative review, expert opinion.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Buckwalter et al. (1991) Mental health services of the rural elderly outreach program USA
Service concept, setting, staffing and other components
Rural Elderly Outreach Program (EOP) ▪ mental, medical and social services ▪ multidisciplinary in-home assessment ▪ implementation and coordination of treatment plan and appropriate referrals ▪ to provide services to non-presenting cases and prevent crisis intervention and hospitalisation ▪ provide rapid and effective mental health assessment and treatment and to minimise disruptions ▪ sensitive to rural value system, social ecology, modified to suit rural setting ▪ designed to identify those in need and to deliver services to the homebound rural elderly. Referrals ▪ onsite psychosocial screening at community settings – e.g., churches, for depression, cognitive status and psychosis ▪ case management referrals from other agencies through EOP social worker liaison ▪ training of non-traditional gate keepers in recognition and referral of cases – e.g., local residents, mailmen, retailers etc. and for non-psychiatric trained elderly service providers and health professionals ▪ four mental outreach specialists assigned to community-based agencies for case finding activities and referral to EOP also education and case consultation ▪ social worker liaison with local hospitals and psychiatric facilities. Entry criteria ▪ over 55 years ▪ in catchment area ▪ not institutionalised or able to be placed in the community. EOP team ▪ part time psychiatrist, geropsychiatric nurse, geriatric nurse practitioner, two geropsychiatric social workers ▪ team approach and case consultation ▪ multidisciplinary in-home assessment of health, environment, support network, stressors and functional capacity ▪ lab work and comprehensive health assessments referred to local family practitioners ▪ fortnightly team meetings.
Evidence or rationale
Service evaluation ageing rural population ▪ elderly mental health services a state priority ▪ inadequate number of staff knowledgeable in geriatric psychiatry ▪ limited service delivery models ▪ lack of coordination ▪ rural elderly underserved by mental health system ▪ rural elderly have unique mental health service needs ▪ need to reach a higher percentage ▪ requires coordination ▪ among medical, mental health and social services ▪ limited resources ▪ need continuity of care ▪ use of professional, non-professional and lay personnel ▪ reluctance of rural elderly to accept care ▪ stigma of mental illness. Project results - independent evaluation ▪ depression (15.2.5), dementia, adjustment disorders and problems in living common ▪ 25% previous mental health treatment ▪ clients tended to be older, female, widowed and living alone ▪ may have been effective in preventing an increase in need for mental health care ▪ significant improvement in depression and other psychiatric symptoms ▪ substantially lower cost ▪ large component and expansion of educational activities and consultation including gatekeeper training.
Recommendations
▪ more rigorous evaluation of EOP services ▪ treatment outcome studies ▪ comparison with other services.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Cooper (1991) Psychiatric services for the elderly UK
Service concept, setting, staffing and other components
Mental Health services ▪ integrated services, population-based in defined area with case coordination, easy transfer of patients between hospitals and extramural services ▪ model of integrated care with core community geriatric psychiatry team/day hospital/out-patient/consult-advisory services and links to GPs, general hospital, geriatric nursing homes, day care centres, community nursing, social work (refer to page 294 in chapter). Inpatient ▪ general hospital inpatients for mentally ill in same environment as physically ill, availability of skilled staff, technology, less stigma than admission to psychiatric hospital. Establishment of short-stay acute treatment units ▪ inpatient psychiatry units (in general hospital or large psychiatric hospital) with responsibility of care for main categories of elderly inpatient care, clearly defined catchment area, provision of suitable services for patients, maximising patient's potential including social activities and interaction, high ratio of trained nursing staff to patients and close links with outpatients and community services ▪ a staff mix of psychiatrists, clinical psychologists, medical and psychiatric trained nurses, social workers, physiotherapists, speech therapists. Day care ▪ day care seen as link between inpatient and community care and offering long-term support for patient care-givers/family for those (e.g., dementing, recurring depressive/paranoid states) patients able to live at home. Nursing homes ▪ geriatric nursing homes for patients with chronic disablement, irreversible conditions require liaison with geriatric psychiatry services to avoid difficulties in care. Community ▪ community care best undertaken through multi-disciplinary specialist geriatric psychiatry teams that are community-based, perform in-home assessment (including physical, environment and social assessment). Shared multi-disciplinary team, broad spectrum, consultative, clinical work, preventive care, training ▪ community services with GP involvement in mental health diagnosis, case management, provision of social support, social work, domiciliary care, voluntary work, helping family caregivers. Prevention and rehabilitation ▪ early detection and diagnosis (supplying diagnostic guidelines) of most important psychiatric syndromes through close liaison with GPs, community nurses ▪ systematic checking for and control of age-associated disorders (secondary prevention of psychiatric disorders later in life) ▪ care in prescribing and helping reduce prevalence of iatrogenic mental disorders ▪ tertiary prevention with development of psychiatric consultative services for long-stay geriatric homes.
Evidence or rationale
▪ book chapter review, expert opinion.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Shulman and Arie (1991) UK Survey of psychiatric services for the elderly: direction for developing services Canada
Service concept, setting, staffing and other components
Review of 10 UK geriatric psychiatry services ▪ consensus on broad principles: comprehensive services, emphasis on community outreach, initial assessments at home to promote aging in place, availability and flexibility, support of formal and informal caregivers ▪ services cover full range of psychiatric disorders in the elderly ▪ focus on dementia ▪ specific lines of responsibility with social services and general medical services ▪ initial assessment at home or outpatients ▪ referrals generally form medical personal one example of open referral ▪ response between 48 and 72 hours or immediately for emergencies ▪ most initial assessments by psychogeriatrician some by multidisciplinary team members with consultant referral as necessary ▪ three admission units at psychiatric hospitals, five in general hospitals and two in both ▪ average ratio of admission beds per elderly population, 1:1000 ▪ most units mixed functional and organic patients, three services separated functional and organic cases. Depended on physical configuration of unit, some preference for mixed units by psychogeriatricians ▪ trend for less organic and more functional admissions ▪ dementia more likely to be managed at home, day hospital, respite or long stay facilities ▪ long-term care provided by all services mostly distant with poor facilities and atmosphere ▪ day hospitals universally available with mean place per elderly population of 1:1000 ▪ combined inpatient unit and day hospital provided more flexibility and integration and collaboration for staff and patients ▪ stress and disruption sometimes caused by day care overcome by one services with sitting service and travelling day hospital ▪ three services had academic units that incorporated clinical experience as an integral part of medical training ▪ shift of geriatric psychiatry services from psychiatric to general hospitals ▪ sense that geriatric psychiatry should be in mainstream medicine for improved quality care and influence on medical training ▪ long stay care tended to be isolated. Attempts made for refurbishment and staff support through meetings. Some advocate smaller domestic style units in local setting. Some psychogeriatricians expressed reservations about care for patients with serious behavioural problems and cost effectiveness ▪ role of community psychiatric nurses developing providing surveillance and monitoring with feedback to consultant ▪ GPs role acknowledged as central ▪ consultant involvement in GP training schemes ▪ proposed mobile clinics to visit GP premises to facilitate communication.
Evidence or rationale
Systematic descriptive study ▪ rapid increase in number of psychogeriatricians ▪ increasing interest in geriatric psychiatry ▪ anecdotal reports no longer sufficient ▪ efficiency and effectiveness of services must be examined systematically.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Draper (1990) Effectiveness of services (and treatments) in geriatric psychiatry Australia
Service concept, setting, staffing and other components
Mental Health services ▪ collaboration of geriatric psychiatry services with geriatric services especially in general hospital facilities ▪ range of services dependent on local situation and resources but ideally joint assessment and community teams, active liaison between services in different hospitals ▪ active role of specialists (geriatric/geriatric psychiatry) not just consultative ▪ consultation/liaison services involvement with management of older persons in general hospitals and advanced geriatric psychiatry services taking over responsibility for referrals to ensure continuity of care ▪ integrated range of hospital/community-based staff in mix suited to staff, consumers and other professionals ▪ specialist geriatric psychiatry/mental health experience and expertise in dealing with the diagnosis of mental health conditions such as depression and its comorbities, assessment and management of dementia and associated community care with case managers working with/support to caregivers ▪ education especially for GPs and programme to reduce caregiver strain ▪ development of specialist nursing homes and lodges for long-term care beneficial to patients and for carer relief.
Evidence or rationale
▪ narrative literature review, expert opinion.

Publication title, author and origin
Snowden (1987) Psychiatric services for the elderly Australia
Service concept, setting, staffing and other components
Mental Health services ▪ close collaboration and proximity of geriatric psychiatry services with geriatric services and with GPs. Similar overlap of geographical areas yet different areas of responsibility ▪ geriatric psychiatrys seen as a sub-specialty of psychiatry. Advocacy for training in geriatric psychiatry, local knowledge of resources, community services and patient needs ▪ conditions such as affective, paranoid and neurotic disorders require referral to psychiatrists but this is not so straightforward for dementia patients ▪ the availability of multi-disciplinary community focused geriatric assessment teams with the coordination of a range of facilities and services.
Evidence or rationale
▪ narrative literature review, expert opinion.

Publication title, author and origin
Bertinshaw (1985) Services for the aged: past, present and future mental health and the elderly Australia
Service concept, setting, staffing and other components
▪ integration of geriatric psychiatry services with general hospitals and community health services the ideal ▪ assessment and management of confused elderly best managed in a general medical setting with psychiatric liaison other than a psychiatric setting as a number of confusional states caused by medical illness or medications ▪ range of comprehensive and coordinated services including acute inpatient assessment, rehabilitations beds and hostels and nursing homes, day hospitals, day centres, home nursing and support services offered on basis of need.
Evidence or rationale
Expert opinion ▪ increasing frail elderly population ▪ improved care achieved by establishment of separate geriatric psychiatry units as part of larger psychiatric hospitals and community services ▪ geriatric psychiatry care historically isolated, institutional, long-term and custodial ▪ need integration to avoid stigma and to promote comprehensive, coordinated and holistic care emphasising the relationship between physical, mental, emotional and social wellbeing.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Arie and Jolley (1982) Organisation and style of geriatric psychiatry services UK
Service concept, setting, staffing and other components
Mental Health services ▪ universal importance of initial home assessment, with additional assessment and treatment if indicated ▪ geriatric psychiatry assessment units offering both assessment and treatment ▪ unity of services, geriatric psychiatrys working closely with geriatric services, joint facilities including both geriatric psychiatry and geriatrics – e.g., at outpatient clinics. Collaboration and liaison with social services and residential homes ▪ service style: flexibility, responsiveness and availability, unhierarchial use of staff, domiciliary assessment, collaboration other services and agencies, support services, personality and staff education ▪ collaboration between geriatrics and geriatric psychiatry should be governed by the principles of responsibility determined by patient needs not service referrals, doing the best for patients as psychogeraitric patients and not default services of available beds in geriatrics, education in each others disciplines and service unity for consumer but also retainment of particular professional distinctions.
Evidence or rationale
▪ British Geriatrics Society and Royal College of Psychiatrists, published literature, expert opinion.

Publication title, author and origin
Shulman K, in Health care of the elderly edited by T Arie (1981) Service innovations in geriatric psychiatry USA
Service concept, setting, staffing and other components
Mental Health services ▪ consensus on psychiatric services agree that emphasis should be on community care and deinstitutionalisation and support of elderly within their own homes. Assessment and plan management, in the case of referrals functionally ill or depressed patients seen in hospital whereas those with cerebral organic disorders at home. Services should cover full range of psychiatric disorders seen in older persons. A multidisciplinary approach to service delivery and collaboration with geriatric medical services to provide comprehensive service for older persons with multiple problems. Integrated services with multidisciplinary follow-up clinics, community workers, education and research.
Evidence or rationale
▪ book chapter, expert opinion.

Table 10. Descriptive overview of published specialist geriatric psychiatry service models and expert opinion *(continued)*

Publication title, author and origin
Dagon (1982) Planning and development issues in implementing community-based mental health services for the elderly USA
Service concept, setting, staffing and other components
Geropsychiatry Centre - Milwaukee 1980 ▪ biopsychosocial approach ▪ continuum of needs services ▪ links between formal and informal support networks ▪ financial assessments on biopsychosocial and cultural factors ▪ therapeutically oriented case management services ▪ five service divisions: inpatient unit, day hospital, outpatient services, triage (in home emergency assessment and case management) and consultation and education. Services ▪ separate facility operationally part of Milwaukee Mental Health complex ▪ 22 geriatric specialist staff: three psychiatrists, internist, public health and psychiatric nurses, psychiatric social workers and geriatric aides ▪ ante ageist education ▪ outpatient services in two tracks 1) mental health promotion and primary prevention – e.g., counseling, stress clinics etc. and 2) mental illness and physical assessment, treatment through case management ▪ emphasis on functional assessment and case management ▪ functional assessment with two standard instruments OARS (Older American Resources and Services) questionnaire and CARE (Comprehensive Assessment and Referral Evaluation) ▪ case managers are called patient-client advocates and are involved in an ongoing personal and therapeutic relationship with a minimal intervention and maximum independence focus. Funding ▪ federal health and social services programmes – e.g., Medicare. Medicaid and Title 20 plus local funding form tax levies and grants for indirect services. Anticipate problems with reimbursement as budget cuts continue at all levels.
Evidence or rationale
Narrative review/service evaluation ▪ elderly a growing segment of population ▪ receive a disproportionately small % of mental health services 0.2% of outpatients and 4% of inpatient visits for mental health services in Milwaukee 1980. Wisconsin - 3.8% ▪ similar national trend ▪ minority groups and poorer elderly living in urban areas ▪ concern for frail elderly described as low income, living alone, advanced age with multiple disabilities ▪ concept and design "based largely on the author's own experience" (page 137) • biopsychosocial approach: pluralism compensates for errors and skill biases of staff. Integration of skills and perspectives for assessment and treatment plans, staff need to understand the biologic underpinning of disorders and psychosocial aspects of ageing ▪ continuum of needs services: lack of community-based services requires a public health approach of primary prevention (health promotion), secondary prevention (early identification), and tertiary prevention (acute care and long-term care). Focus on changing continuum of needs through ageing process, key to integration of the care system is assessment and case management ▪ links between formal and informal support networks: family, church and self-help groups are important networks for maintaining elderly in community. Formal care should support informal care and improve it ▪ financial assessments on biopsychosocial and cultural factors ▪ therapeutically oriented case management services, geriatric psychiatric illness often underdiagnosed or service duplicated due to poor access to services or uncoordinated services and poor communication. Pluralism in triage team essential. Triage team of two public health nurses, a psychiatric nurse and a psychiatric social worker with consultant backup. Case management teams include a psychiatric nurse, a psychiatric social worker and two geriatric or home help aides. Review after 14 months ▪ 360 referrals and 240 home visits ▪ 71% had problems across biopsychosocial spectrum, 6% psychological only, < 2% either biological or social only ▪ mobility 25%, dehydration/malnutrition 24%, cardiovascular disorder 23%, endocrine disorder 9%confusion 36%, depression 30%, assaultive, homicidal or suicidal behaviour 19%, paranoia 15%, severe social isolation 52%, loss of housing 19%, probable abuse 12%, low income 16% ▪ Referrals: 60% from professional agencies, 37% from families, 3% self referral ▪ 3% were placed in residential care.

CONCLUSION

Literature for the geriatric psychiatry services review falls into three main categories:

- that derived from primary/secondary studies of service delivery, interventions and their outcomes
- service guidelines, policy and protocols, and
- expert opinion and commentary.

Ideally, service guidelines, policy and protocols are based on effectiveness and efficacy research findings (systematically reviewed), guided and tempered by expert and clinical opinion. By considering the results of **Sections 2** and **3** comparatively, further understanding may be gained, in terms of what a best practice geriatric psychiatry service delivery framework might 'look like'.

There were two key findings common to both the research and the protocols/guidelines sections of the review. The first finding relates directly to characteristics and design features of the most effective services. More effective geriatric psychiatry services are those that are:

- comprehensive in their scope, with an holistic or 'bio-psycho-socio-cultural' approach to assessment, treatment and management
- staffed by competent and knowledgeable health professionals
- supported by informed families and communities
- tailored, flexible and responsive to individual need (culturally appropriate, at home)
- provided by a multidisciplinary team
- to patients and caregivers.

The second shared finding relates to the available research base:

- there is limited evidence-based practice research and service evaluation in geriatric psychiatry services and what is published, despite being the best currently available is at times difficult material from which to draw strong conclusions about service effectiveness. Studies in primary care, rural settings and also with minority or ethnic groups are lacking. This does not necessarily indicate lack of effectiveness, but rather highlights the lack of research in these areas.

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Appendix 1a: Search strategies for Section 2

SEARCH STRATEGIES

Medline

1 geriatric assessment/ (6515)
2 health services for the aged/ (9262)
3 geriatric psychiatry/ (1441)
4 (elder$ or old$ or aged or geriatric$).tw. (609519)
5 (health adj3 (polic$ or service$ or program$)).tw. (64464)
6 4 and 5 (7184)
7 or/1-3,6 (22506)
8 Geriatric Psychiatry/og, st, td [Organization & Administration, Standards, Trends] (285)
9 exp *Substance-Related Disorders/ (99366)
10 exp *Schizophrenia/ (34451)
11 *Paranoid Disorders/ (1186)
12 *Depression/ (16896)
13 *Depressive Disorder/ (26775)
14 exp *Anxiety Disorders/ (22657)
15 exp *Dementia/ (41387)
16 *Delirium/ (1571)
17 or/9-16 (234963)
18 letter.pt. (499936)
19 editorial.pt. (151241)
20 limit 17 to ("all aged <65 and over>" or "aged <80 and over>") (49547)
21 7 and 20 (2048)
22 21 not (18 or 19) (1915)
23 limit 22 to english language (1662)
24 limit 8 to english language (197)
25 from 24 keep [SELECTED REFERENCES] (31)
26 23 not 24 (1635)
27 (metaanaly$ or meta-analy$).tw. (9573)
28 meta-analysis.pt. (7721)
29 randomized controlled trial.pt. (173090)
30 (systematic$ adj3 (review$ or overview$)).tw. (5153)
31 review.pt. (941162)
32 meta-analysis/ (4933)
33 or/27-32 (1124426)
34 26 and 33 (274)
35 from 34 keep [SELECTED REFERENCES] (100)
36 26 not 34 (1361)
37 from 36 keep [SELECTED REFERENCES] (122)
38 35 OR 37 (222)

Embase

1 gerontopsychiatry/ (2236)
2 psychogeriatric$.tw. (657)
3 ((geriatr$ or elder$) adj3 (mental$ or psych$)).tw. (2464)
4 *mental health service/ (2619)
5 limit 4 to aged <65+ years> (215)
6 or/1-3,5 (4576)

7 elderly care/ (7648)
8 geriatric care/ (4612)
9 home for the aged/ (390)
10 exp *health service/ (159082)
11 *community care/ (2181)
12 health care utilization/ (9999)
13 health care policy/ (28786)
14 health care delivery/ (19150)
15 institutional care/ or deinstitutionalization/ or institutionalization/ (2786)
16 *home care/ or exp *hospital care/ or exp *long term care/ or exp *primary health care/ (54333)
17 residential care/ (1841)
18 rural area/ or urban area/ or urban rural difference/ (14093)
19 or/7-18 (213421)
20 6 and 19 (1450)
21 limit 20 to english language (1192)
22 letter.pt. (244591)
23 editorial.pt. (108674)
24 21 not (22 or 23) (1110)
25 service.ti. (7046)
26 6 and 25 (126)
27 limit 26 to english language (114)
28 26 not 20 (23)
29 from 28 keep [SELECTED REFERENCES] (11)
30 from 24 keep [SELECTED REFERENCES] (31)
31 *Depression/ (35624)
32 *anxiety/ (9922)
33 exp *Dementia/ (42085)
34 exp *Delirium/ (1492)
35 exp *Addiction/ (29241)
36 *Schizophrenia/ (23684)
37 *Paranoid Psychosis/ (153)
38 or/31-37 (104707)
39 6 and 38 (1169)
40 39 not (20 or 28) (921)
41 40 not (22 or 23) (881)
42 limit 41 to english language (714)
43 (service$ or guideline$ or program$ or position statement$ or polic$ or plan$ or deliver$).tw. (481688)
44 43 and 42 (121)
45 from 44 keep [SELECTED REFERENCES] (12)
46 29 or 30 or 45 (157)

Psychinfo

1 mental health services/ or community mental health services/ (13958)
2 health care delivery/ or managed care/ (8239)
3 integrated services/ (718)
4 health care utilization/ (5297)
5 community services/ or community welfare services/ or crisis intervention services/ or home visiting programs/ (8087)
6 community mental health centers/ or community psychiatry/ or community psychology/ or mental health programs/ or outreach programs/ (5717)
7 social environments/ or communities/ or rural environments/ or suburban environments/ or exp urban environments/ (17286)
8 hospitals/ or residential care institutions/ or psychiatric hospitals/ or psychiatric clinics/ or psychiatric units/ (12269)
9 long term care/ or *hospitalization/ or *nursing homes/ (4873)
10 (servic$ or program$ or polic$ or deliver$ or position statement$ or guideline$).ti. (62043)
11 or/1-10 (114568)
12 geriatric psychiatry/ (358)

13 geriatric psychotherapy/ (320)
14 (12 or 13) and 11 (143)
15 from 14 keep [SELECTED REFERENCES] (28)
16 geriatric assessment/ (381)
17 geriatric patients/ (5006)
18 gerontology/ (2140)
19 geriatrics/ (1742)
20 (geriatric$ or elder$).ti. (14959)
21 or/16-20 (20412)
22 11 and 21 (4097)
23 mental health/ (10527)
24 *major depression/ (30243)
25 *anxiety disorders/ (5056)
26 exp *dementia/ (17504)
27 *delirium/ (808)
28 exp *schizophrenia/ (35319)
29 exp *drug abuse/ (38062)
30 exp *"Paranoia (Psychosis)"/ (881)
31 or/23-30 (132548)
32 22 and 31 (588)
33 limit 32 to english language (563)
34 from 33 keep [SELECTED REFERENCES] (87)
36 34 or 15 (114)

Cinahl

1 Geriatrics/ (292)
2 geriatric functional assessment/ (1295)
3 geriatric assessment/ (1358)
4 gerontologic care/ (3851)
5 gerontologic nurse practitioners/ (212)
6 gerontologic nursing/ (5114)
7 rehabilitation, geriatric/ (895)
8 or/1-7 (11977)
9 geriatric psychiatry/ (377)
10 geriatric depression scale/ (223)
11 9 or 10 (599)
12 limit 11 to english (594)
13 Health Policy/ (6563)
14 exp Health Care Delivery/ (42457)
15 exp health facility planning/ or health resource allocation/ or health resource utilization/ (4123)
16 community health services/ or community health nursing/ or exp community mental health services/ or community networks/ or rehabilitation, community-based/ (17203)
17 home health care/ or psychiatric home care/ (7015)
18 exp "Outcomes (Health Care)"/ (27321)
19 acute care/ or after care/ or gerontologic care/ or long term care/ or exp psychiatric care/ or exp residential care/ (15565)
20 Primary Health Care/ (7268)
21 Rural Health Services/ (1113)
22 RURAL AREAS/ or RURAL HEALTH CENTERS/ or HOSPITALS, RURAL/ or RURAL HEALTH/ (4147)
23 Urban Areas/ (2461)
24 (service$ or program$ or polic$ or deliver$ or position statement$ or guideline$).tw. (107377)
25 or/13-24 (188690)
26 25 and 11 (225)
27 Mental Health/ (1864)
28 Depression/ (7833)
29 Anxiety/ (3341)
30 exp Dementia/ (6929)
31 Delirium/ (449)

32 SCHIZOPHRENIA/ (2295)
33 exp Substance Dependence/ (9733)
34 Paranoid Disorders/ (71)
35 or/27-34 (30245)
36 8 and 35 (1349)
37 editorial.pt. (43650)
38 letter.pt. (17730)
39 26 or 36 (1545)
40 39 not (37 or 38) (1506)
41 limit 40 to english (1495)
42 from 41 keep [SELECTED REFERENCES] (99)

SEARCHES FROM OTHER SOURCES

In databases and all other sources without controlled vocabulary combinations of the index terms and additional keywords from the above strategies, were used in the search.

Appendix 1b: Search strategies for Section 3

SEARCH STRATEGIES

Medline

1 Health Services for the Aged/ (9253)
2 ((health adj2 service$) adj3 (elderly or aged or geriatric)).tw. (569)
3 1 or 2 (9553)
4 position statement$.tw. (1004)
5 exp Societies, Medical/ (33594)
6 organizational policy/ (9357)
7 guidelines/ or practice guidelines/ (34474)
8 Health Planning Guidelines/ (1627)
9 Health Planning/ (17276)
10 (polic$ or statement$).ti. (25619)
11 Interprofessional Relations/ (26407)
12 or/4-11 (139660)
13 3 and 12 (613)
14 limit 13 to english language (529)
15 from 14 keep [SELECTED REFERENCES] (97)
16 triage/ (3254)
17 (3 and 16) not 13 (12)
18 limit 17 to english language (12)
19 from 18 keep [SELECTED REFERENCES] (2)
20 og.fs. (188540)
21 (3 and 20) not (13 or 18) (2303)
22 limit 21 to english language (1978)
23 limit 22 to review (144)
24 from 23 [SELECTED REFERENCES] (23)
25 15 or 19 or 24 (122)

Embase

1 exp *elderly care/ (6353)
2 (service$ adj3 (elderly or aged or geriatric)).tw. (910)
3 1 or 2 (7020)
4 position statement$.tw. (383)
5 exp *health care delivery/ (66807)
6 *health care planning/ (1778)
7 *health care policy/ (9073)
8 medical society/ (13078)
9 (polic$ or statement$).ti. (10507)
10 exp *practice guideline/ (4364)
11 health service/ (14749)
12 or/4-11 (112908)
13 3 and 12 (1732)
14 exp *elderly care/ (6353)
15 (2 or 14) and 12 (1732)
16 limit 15 to english language (1490)
17 from 16 keep[SELECTED REFERENCES] (114)

Psychinfo

1 elder care/ (813)
2 geriatrics/ or geriatric patients/ or geriatric psychiatry/ or gerontology/ or geriatric assessment/ or geriatric psychotherapy/ (8264)
3 ((elder$ or geriatric$ or older) adj3 (servic$ or framework$ or polic$ or guideline$ statement)).tw. (2172)
4 or/1-3 (10609)
5 position statement$.tw. (118)
6 treatment guidelines/ or treatment planning/ (1232)
7 health care policy/ (1357)
8 health care services/ or mental health services/ or community services/ or integrated services/ or quality of services/ or rehabilitation/ or social services/ (28344)
9 4 and 8 (1397)
10 limit 9 to english language (1336)
11 limit 10 to (("380 aged <age 65 yrs and older>" or "390 very old <age 85 yrs and older>") and yr=1970-2003) (1113)
12 from 11 keep [SELECTED REFERENCES] (79)

Cinahl

1 Health Services for the Aged/ (1907)
2 ((elderly or aged or geriatric or old$) adj3 (service$ or program$ or polic$)).mp. [mp=title, cinahl subject headings, abstract, instrumentation] (2798)
3 Gerontologic Care/ (3851)
4 or/1-3 (7684)
5 position statement$.tw. (993)
6 og.fs. (11047)
7 Health Policy/ (6563)
8 exp *"Health and Welfare Planning"/ (10103)
9 collaboration/ or interprofessional relations/ (7940)
10 PRACTICE GUIDELINES/ (5290)
11 (polic$ or statement$).ti. (7985)
12 *"Health and Welfare Planning"/ (647)
13 or/5-12 (44972)
14 4 and 13 (925)
15 limit 14 to english (922)
16 from 15 keep [SELECTED REFERENCES] (64)

SEARCHES FROM OTHER SOURCES

In databases and all other sources without controlled vocabulary combinations of the index terms and additional keywords from the above strategies, were used in the search.

Appendix 2a: Search methodology and sources for Section 2

SEARCH STRATEGY METHODOLOGY

A systematic method of literature searching and selection was employed in the preparation of this review.

Searches were limited to English language material, there was no date restriction. The searches were completed on 9 May 2003.

The following databases were searched (using the search strategy outlined in **Appendix 1a**):

Bibliographic databases

- Cinahl
- Embase
- Index New Zealand
- Medline
- PsychInfo
- Current Contents
- Science Citation Index
- Social Science Citation Index

Review databases

- Best Evidence
- Cochrane Library
- Database of Abstracts of Reviews of Effectiveness
- Health Technology Assessment database
- NHS Economic Evaluation database

Appendix 2b: Search methodology and sources for Section 3

A systematic method of literature searching and selection was employed in the preparation of this review.

Searches were limited to English language material, there was no date restriction. The searches were completed on 9 May 2003.

The following databases were searched (using the search strategy outlined in **Appendix 2b**):

Bibliographic databases

- Cinahl
- Embase
- Index New Zealand
- Medline
- PsychInfo
- Science Citation Index
- Social Science Citation Index

Review databases

- Best Evidence
- Cochrane Library
- Database of Abstracts of Reviews of Effectiveness
- Health Technology Assessment database
- NHS Economic Evaluation database

The following professional colleges/associations were searched:

New Zealand

- New Zealand Geriatrics Society
- Canterbury District Health Board (CDHB)
- Elder Care Canterbury

United Kingdom

- British Geriatrics Society
- British Society of Gerontology
- Health Services for the Aged

Australia

- Australian Dept of Health and Ageing
- Australian Society for Geriatric Medicine
- Australian Association for Gerontology
- Aged and Community Services Australia
- Council on the Ageing
- Australian Department of Health and Ageing
- National Aged Care Alliance

Canada

- Health Canada
- Division of Ageing and Seniors

Other International

- American Association for Geriatric Psychiatry
- American Geriatrics Society
- The Gerontological Society of America
- The International Association of Gerontology
- National Association for Geriatric Service Providers and Educators (USA)
- National Institute on Ageing (USA)
- National PACE Association (USA)
- United Nations Program on Ageing
- WHO

Search engines

- Searchnz
- Google

Appendix 3a: Excluded studies for Section 2

RETRIEVED STUDIES EXCLUDED FOR REVIEW

The following studies were retrieved as full text articles but were excluded as these either did not meet the inclusion criteria, were not specifically relevant to the topic, had inadequate descriptions of geriatric psychiatry service delivery models or were considered not to add any additional evidence regarding the efficacy of a particular model of service.

Barsa, J. J., Kass, F., Beels, C. C., Gurland, B. & Charles, E. (1985). Development of a cost-efficient psychogeriatrics service. *American Journal of Psychiatry*, 142, 238-241.

Bartels, S. J. (2002). Quality, costs, and effectiveness of services for older adults with mental disorders: A selective overview of recent advances in geriatric mental health services research. *Current Opinion in Psychiatry*, 15, 411-416.

Bayney, R., St John-Smith, P., & Conhye, A. (2002). MIDAS: A new service for the mentally ill with comorbid drug and alcohol misuse. *Psychiatric Bulletin*, 26, 251-254.

Black, D., & Jolley, D. (1990). Slow euthanasia? The deaths of psychogeriatric patients. *BMJ*, 300, 1321-1323.

Boult, C., Boult, L., Murphy, C., Ebbitt, B., Luptak, M., & Kane, R. L. (1994). A controlled trial of outpatient geriatric evaluation and management. *Journal of the American Geriatrics Society*, 42, 465-470.

Bower, P., & Sibbald, B. (2000). On-site mental health workers in primary care: effects on professional practice. *Cochrane Database of Systematic Reviews*.

Brand, E., & Clingempeel, W. G. (1992). Group behavioral therapy with depressed geriatric inpatients: an assessment of incremental efficacy. *Behavior Therapy*, 23, 475-482.

Braun, K. L., & Rose, C. L. (1987). Geriatric patient outcomes and costs in three settings: nursing home, foster family, and own home. *Journal of the American Geriatrics Society*, 35, 387-397.

Britton, A., & Russell, R. (2001). Multidisciplinary team interventions for delirium in patients with chronic cognitive impairment. *Cochrane Database of Systematic Reviews*.

Brodaty, H., Gresham, M., & Luscombe, G. (1997). The Prince Henry Hospital dementia caregivers' training programme. *International Journal of Geriatric Psychiatry*, 12, 183-192.

Brodaty, H., Green, A., & Koschera, A. (2003b). Meta-analysis of psychosocial interventions for caregivers of people with dementia. *Journal of the American Geriatrics Society*, 51, 657-664.

Burgio, L. D., & Fisher, S. E. (2000). Application of psychosocial interventions for treating behavioral and psychological symptoms of dementia. *International Psychogeriatrics*, 12, 351-358.

Burke, D. (2002). A geriatric evaluation and management programme prevented functional decline and reduced depression in high risk older adults. *Evidence-Based Mental Health*, 5, 9.

Byles, J. E. (2000). A thorough going over: evidence for health assessments for older persons. *Australian & New Zealand Journal of Public Health*, 24, 117-123.

Clarkson, P., McCrone, P., Sutherby, K., Johnson, C., Johnson, S., & Thornicroft, G. (1999). Outcomes and costs of a community support worker service for the severely mentally ill. *Acta Psychiatrica Scandinavica*, 99, 196-206.

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Section 3b: Excluded articles for Section 3

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Appendix 4a: Included studies for Section 2

RETRIEVED STUDIES INCLUDED FOR REVIEW APPRAISAL

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Section 4b: Included articles for Section 3

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