



# What is the effectiveness of old-age mental health services?

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## ABSTRACT

This is a Health Evidence Network (HEN) synthesis report on the effectiveness of old-age mental health services. The European Region had 15% of its population 65 years old or older and nearly 7% 75 or over in 2000, the world's highest percentages. By 2030 these figures will increase to 24% and 12% respectively. The effect on health care will be amplified by a disproportionate increase in dementia, and depression, anxiety, schizophrenia, substance abuse disorders and delirium are also of major concern. Therefore effective services to treat mental illness in older people will become an ever-increasing imperative.

The report states that overall, the strongest evidence supports the development of community multidisciplinary teams as a major service-delivery component, and this should be encouraged in all European countries, as should partnerships with consumers, non-governmental organizations, primary care providers, social services, long-term residential care providers and other medical services.

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## Summary

### The issue

The European Region had 15% of its population 65 years old or older and nearly 7% 75 or over in 2000, the world's highest percentages. By 2030 these figures will increase to 24% and 12% respectively. The effect on health care will be amplified by a disproportionate increase in dementia, and depression, anxiety, schizophrenia, substance abuse disorders and delirium are also of major concern. Therefore effective services to treat mental illness in older people will become an ever-increasing imperative.

### Findings

Old-age mental health services are usually defined as multidisciplinary, comprehensive, integrated service delivery to a defined catchment area. The quality of evidence relating to old-age mental health services is improving, but there are few studies evaluating overall models of old-age-specific mental health care. Effective models of general health care for older people include:

- a single entry-point system
- case management
- assessment and multidisciplinary teams
- use of financial incentives to encourage less expensive, community-based care.

The evidence for the effectiveness of old-age mental health service ranges from strong, for community multi-disciplinary teams, to weak, for acute hospital care; this is mainly due to a lack of controlled studies rather than measured ineffectiveness. Old-age mental health models involving case management in the community have been shown to be effective, and there is limited evidence to support liaison in long-term residential care. However, both options are more staff-intensive than the alternative "assessment only" consultation service style. Integration of acute hospital and community care has also been shown to improve outcomes following hospital discharge. The limited evidence also suggests that old-age mental health services are more effective than geriatric medical and adult mental health services.

There is lower quality, albeit consistently positive, evidence of the effectiveness of acute hospital care. Controlled studies are required to determine whether alternative forms of community or hospital care are as effective. While community residences for long-term institutional care appear to offer better quality care than hospitals, it is unclear whether there are particular patients who require long term psychogeriatric hospitalization.

### Policy considerations

The most widely accepted model is multidisciplinary, comprehensive, integrated service delivery to a defined catchment area, and this is the basis of the World Psychiatric Association (WPA) and World Health Organization consensus statement on the organization of care in old-age psychiatry. The strongest evidence supports the development of community multidisciplinary teams as a major service-delivery component, and this should be encouraged in all European countries, as should partnerships with consumers, non-governmental organizations, primary care providers, social services, long-term residential care providers and other medical services.

- There is good evidence (level I/II) to support the effectiveness of multidisciplinary, individualized community services; primary/specialist care collaborations for treatment of late life depression; outreach services to residential care; integrated post discharge mental health services and treatments to prevent delirium in medical wards (but effects are modest).
- There is limited evidence (level III or II/IV) to support consultation/liaison mental health services to medical wards or long-stay psychogeriatric wards for less-dependent patients.

- There is weak evidence (level IV) to support day hospitals, general adult mental health wards, old-age mental health wards, or combined old-age mental health and geriatric wards.
- No benefit was found from geriatric medical post discharge services.

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## **Introduction**

The European Region has the highest prevalence of older people, with 15% of the population 65 and over and nearly 7% 75 years and over in 2000. By 2030 these will increase to 24% and 12% respectively (1). Over the next 30 years, the projected rate of increase in the older population in European countries will vary considerably, from 14% in Bulgaria to 87% in Luxembourg. Of the 20 countries in the world with the highest age index scores (the number of people aged 65 and over per 100 under age 15), 17 were located in Europe in 2000 (1). The initial development of old-age mental health services in Europe occurred in the UK, prompted by the ageing population (2).

The increase in the proportion of people over 75 is likely to have the greatest impact upon mental health service delivery, as the effects of population ageing are amplified by a disproportionate increase in dementia (3). According to the WHO *World Health Report 2001*, dementia was the thirteenth leading cause of years lived with a disability in the world in 2000, and it is projected to rapidly increase its contribution to the global burden of disease over the next 20 years, particularly in developed countries (4). The Behavioural and Psychological Symptoms of Dementia (BPSD) are the major aspect of dementia care that fall within the expertise of old-age mental health services and it has been estimated that 32% cases would potentially benefit from their involvement (5). Depression is also common in old-age though there is conflicting evidence about its prevalence in the community, with reported rates ranging from 2% to 15% in those over 65 (6). Other mental disorders of major concern in old-age include anxiety, schizophrenia, substance abuse disorders and delirium.

Hence there is an imperative to determine the effectiveness of old-age mental health services to ensure high-quality care for the growing aging population. To address this question, this synthesis presents evidence covering all aspects of care for older people with mental disorders, covering effective treatments, models of care and different service delivery settings.

## **Sources for this review**

A systematic literature search was undertaken to obtain articles published in English from 1966 to May 2003 about old-age mental health services. The Medline, PsycINFO, CINAHL, EMBASE and the Cochrane Collaboration databases were used with keywords "old-age psychiatry,"

“psychogeriatrics,” or “geriatric psychiatry,” combined with “acute care,” “long term care,” “general hospital,” “nursing home,” or “consultation-liaison” and “evaluation,” “audit,” “intervention,” or “service delivery.” This was supplemented by a manual search of references from relevant literature and websites. Articles were excluded if they did not focus on subjects over 60 years of age, did not include quantitative data on outcomes, or if the intervention was purely pharmacological or a specific non-pharmacological technique (such as behaviour management training only).

All systematic reviews evaluating mental health service delivery to older people in acute hospitals, community settings, and long term residential care were included. Seven studies met these criteria. Controlled trials, cohort studies and case series (audits) of the outcomes of care of older people by mental health and medical services were reviewed, and 108 were found that met our criteria. In this synthesis we describe studies that have been published since the most recent systematic reviews and mention earlier relevant European studies.

The methodology of assessing the data quality of this synthesis by using the Methodological Quality Instrument (7) and ranking the evidence hierarchy (8) are described in Annex 1.

## **Findings: Effectiveness of the treatments for mental disorders in old-age**

The two major mental disorders managed by old-age mental health services are depression and dementia. They account for between 60-75% of referrals (9).

### **Depression**

There is consensus that antidepressant medication and cognitive therapies are effective in the short-term treatment of geriatric major depression (10,11,12) and dysthymia (13) even when comorbid with chronic physical illness (12,14). However, at least in part due to the lack of research, there is only limited evidence of the effectiveness of the treatment of minor depression (11), depression associated with acute physical illness (14,15) and depression complicating dementia (6,16). Adverse effects of antidepressant therapy leading to treatment dropouts and dosage restrictions are more likely to occur in older people with physical illnesses and dementia. Common side effects include confusion, falls, gastrointestinal upsets, drug interactions and sedation. Side effects are one of the main reasons for the lower effectiveness in this population (6,14).

### **Dementia**

There are three main areas of treatment in dementia care (irrespective of patient age) with evidence of effective interventions - cognitive decline, BPSD, and care-giver stress. Systematic reviews and meta-analyses of RCTs have concluded that cholinesterase inhibitor therapies have a significant but modest effect in the treatment of cognitive decline associated with Alzheimer's disease (17,18) and Dementia with Lewy bodies (19). The effectiveness of other agents including Vitamin E, selegiline, memantine and Ginkgo biloba (20,21) has not been fully established. In the treatment of BPSD, there is modest evidence from some RCTs of the effectiveness of pharmacological – for example, antipsychotics (22,23) – and psychosocial interventions, such as behaviour therapy, activity programs and music therapy (24). While some studies show significant treatment effects, when all trials are aggregated, the overall effect is less significant (23,24). Antipsychotic drugs can also adversely affect the older drugs limited by extrapyramidal side effects. The newer atypical antipsychotics are better tolerated, but may increase the risk of cerebrovascular events, leading to a recommendation by the United Kingdom Committee on Safety of Medicines for that they be used only under specialist advice and for brief periods in the treatment of BPSD (25). There is stronger evidence that interventions for dementia care-givers that include education, skills training and emotional support are effective in reducing care-giver stress and may delay placement into institutional care (26,27).

Systematic reviews of treatment outcomes for other common mental disorders in old-age such as bipolar disorder, schizophrenia, anxiety disorders and substance abuse disorders are lacking. A review of the available evidence that included non-systematic reviews, consensus statements and individual treatment studies suggested that some pharmacological and non-pharmacological interventions may be effective, but the strength of the evidence was weak (Level III-2) (11).

These data from systematic reviews indicate that while there is consistent evidence of the efficacy of some treatments of depression and dementia in old-age, the degree of effect is only moderate with incomplete symptom resolution, treatment resistance, adverse reactions to drugs, and high relapse rates. The evaluation of old-age mental health services needs to be interpreted in this context.

## **Findings: Models of Care**

The most widely accepted model of care for old-age mental health services - multidisciplinary, comprehensive, integrated service delivery to a defined catchment area - was based on the experiences of geriatric medicine in the United Kingdom, where pragmatism, advocacy and available resources were used, rather than on formal evaluation (2). The Geriatric Psychiatry Section of the World Psychiatric Association (WPA) and WHO, with the collaboration of the International Psychogeriatric Association, jointly produced a consensus statement supporting this model of care in the psychiatry of old-age (28).

There is a major gap in the evaluation of different models of old-age mental health service delivery. Studies focusing on models of care primarily for frail and/or institutionalized older people, not targeted to mental health needs, provide some guidance.

A systematic review of demonstration projects testing innovative models of care for the elderly in OECD countries included seven projects from Canada, Italy, the United Kingdom and the United States, each of which aimed to create comprehensive integration of acute and long-term care. Common features of an effective system of care were identified, including a single entry point system, case management, geriatric assessment and a multidisciplinary team, and the use of financial incentives to encourage less expensive community based care (29). Apart from the use of financial incentives, each of these features is mentioned in the WPA/WHO consensus statement (28).

A refinement of this approach is the public health model that targets the mental health of all older people in a defined population by systematic case identification, facilitation of access to treatment, delivery of quality care and assessment of outcomes (30). This model has a strong focus on health promotion and disease prevention. It has been tested indirectly in controlled studies that have utilized public health model research design in the community (31,32), general hospitals (33,34) and residential care (35,36), with generally positive effects. However, it is unclear from these studies whether they are cost effective.

## **Findings: Service delivery in different settings**

In the absence of service delivery evaluation of an overall model of care, a body of literature has developed on the evaluation of service delivery components in different settings and by a range of providers including old-age mental health, general adult mental health and geriatric medicine (37). It is important to appreciate that in examining these service delivery settings in this way, we do not imply that they should be viewed as alternative forms of service delivery. The WHO consensus statement model of care envisages a comprehensive service containing elements of each type of community care, acute hospital services in medical and psychiatric wards, and long stay care (28). In Table 1 a summary of the range of quality of all 108 studies is provided for each area of service delivery.

**Table 1. Study quality for each area of service delivery**

| Area   | Number of studies | Number of Controlled trials | Quality Range* | Mean rating* |
|--|-------------------|-----------------------------|----------------|--------------|
| Psychogeriatric day hospitals                      | 10                | 0                           | .43-.82        | .57          |
| Community old-age psychiatry services              | 24                | 7                           | .79-.94        | .87          |
| Integrated hospital and community care             | 4                 | 2                           | .71-.82        | .76          |
| Primary Care Collaborations                        | 3                 | 2                           | .89-.94        | .92          |
| Older people in general adult psychiatric wards    | 6                 | 0                           | .51-.67        | .59          |
| Acute psychogeriatric wards                        | 23                | 0                           | .43-.78        | .61          |
| Hospital medical services                          | 6                 | 2                           | .82-.90        | .89          |
| Combined psychogeriatric and medical wards         | 3                 | 0                           | .52-.53        | .52          |
| Hospital-based CL psychogeriatric service delivery | 7                 | 3                           | .62-.90        | .79          |
| Long-term psychogeriatric care                     | 6                 | 0                           | .58-.71        | .66          |
| Psychogeriatric outreach to long-term care         | 16                | 9                           | .73-.95        | .84          |

\*If there are  $\geq 2$  controlled trials in a service area, the quality range and mean rating are reported for controlled trials only, otherwise they are reported for all studies.

## Findings: Community based service delivery

### Old-age mental health day hospitals

A systematic review of studies published up to 1998 concluded that there was only very weak (level IV) evidence of day hospital effectiveness (37). In a retrospective concurrent control study from Germany not covered in the previous review, a comparison of the clinical characteristics of psychogeriatric day hospital patients with patients who were fully hospitalized found no significant differences between the groups. Further evaluation of a second sample found that day hospital patients tended to be in better physical health, have less severe symptoms of mental illness and require less assistance with financial issues than patients fully hospitalized. The day hospital was more efficient in the post-hospital discharge rehabilitation of schizophrenia, endogenous depression and organic psychoses than neurotic depression (38).

Since 1998 several outcome studies have been published. A case series of 44 depressed older patients who attended a gerontopsychiatric day clinic in Germany for a mean of 11 weeks found that at discharge the patients showed a significant reduction in depressive symptoms and improvement in cognition (39). Another study examined the three-month outcomes of 112 older people who attended a psychiatric day hospital in England and found significant improvement in their Health of the Nation Outcome Scales (HoNOS) 65+ scores and reduction in unmet needs (40). It is assumed that day hospitals may reduce the need for hospital admissions but there is no evidence to support this.

In summary, the role of day hospitals in acute care remains unresolved, largely because controlled studies comparing day hospital treatment with either community treatment or inpatient treatment are lacking. However, the recent uncontrolled studies (level IV quality) suggest that day hospitals may improve mental health outcomes, particularly for depression, but controlled comparisons are needed to confirm this finding. Despite the paucity of evidence, the use of day hospitals is very common in many European countries including Germany, Ireland, the Netherlands, Sweden, and the United Kingdom (41,42,43,44,45).

## **Community old-age mental health services**

A systematic review of studies up to 1998 of community old-age mental health services concluded that they were effective with level II quality evidence. There was no evidence that community adult mental health services were effective in treating older people, but this is based on only level IV quality evidence (38). Since 1998, a longer term (6-23 months) follow-up of a RCT included in the systematic review has been reported. It studied the effectiveness of psychiatric community nurse management versus standard general practitioner (GP) management of depression in community-dwelling older people in England and found that the benefits of the former were maintained. The greatest effect was noted in cases with long-standing depressive symptoms (46,47).

A RCT of a nurse-based mobile outreach program to seriously mentally ill older people in public housing (PATCH program) in the United States was found to be more effective than usual care at the 26 month follow-up in terms of reducing levels of depression and psychiatric symptoms (31). The PATCH model intervention included educating the public housing staff to be case finders, home-based assessments by the nurses, and providing care where indicated. On average, patients were seen five times by the nurses in sessions most frequently including counselling and education. Coordination of care amongst the housing staff members, patients' care-givers and primary care providers were important features of the model.

Another RCT from England included older people identified from a large general practice routine health check as having significant depressive symptoms and then allocated them to either follow-up by the community mental health team or routine GP care. No significant differences were found between the groups at the 18 month follow-up (48), but the small sample size of 34 patients meant that the study had low power to detect any effects.

Some recent studies have provided additional data. A concurrent control study of the outcomes of older people visited by a community old-age mental health service in Australia showed that in terms of depression outcomes at the 20-38 month follow-up, 45% had fully recovered and a further 40% had made a moderate improvement. These outcomes were better than those obtained by the local adult mental health service inpatients from 50 to 64 years old during the same period (49). Significant improvements have been reported between assessment and discharge on the HoNOS in an Australian case series of a multidisciplinary old-age mental health service that was predominantly (85%) community-based and included a diverse range of psychiatric disorders (50). An American case series of homebound mentally ill older people who were treated by a multidisciplinary community psychiatric team utilizing intensive case management, showed significant improvements on Global Assessment of Function scores over a variable course of up to two and a half years (51).

The impact of care process upon clinical outcome is increasingly the focus of investigation in community services. One issue is whether initial assessment is best located in the patient's home or in an outpatient clinic. A systematic review concluded that there was evidence that initial home assessments may reduce hospital admissions and missed appointments, but may not improve treatment outcome (37). More recently, an English cohort study of the rate of non-attendance of new referrals at a hospital-based clinic (21%) was much higher than in a home-based clinic (2%), further supporting the benefits of this approach (52).

Two studies of models of community case management of dementia in England have been reported. A quasi-experimental study of a case management scheme for dementia in a community old-age mental health service found that by the end of the second year it was more effective at maintaining the patient at home, reducing carer stress and unmet needs than standard community old-age mental health care (53). Features of the scheme felt to be important to this outcome and not available in the standard service included long-term contact with older people and their care-givers, small caseloads and access to a significant range of other resources. A second quasi-experimental study examined a specialist mental health nursing service that focused on the care-givers of people with dementia by providing information and practical and emotional support to them on a long-term basis (54). This was compared

with conventional services in which the focus was on the patient, disorders other than dementia were treated, and discharge occurred at death or placement. Some of these conventional services only provided assessment without long-term input to the patients or care-givers. No significant differences were noted on the primary outcome measure for carer stress or on survival in the community after 8 months. However, on secondary analyses, "assessment only" conventional services providing no long-term input had significantly worse outcomes.

In summary, there is good evidence from a systematic review and RCTs that multidisciplinary community old-age mental health teams are more effective than usual care in the management of depression, dementia and other mental disorders in older people (Level I). Important components of community treatment include multidisciplinary teams, an individualized case management approach with ongoing care rather than just assessment, home-based assessments to improve attendance and care-giver education (Level III-2). The only evidence comparing an old-age mental health service with adult mental health found the old-age mental health service management of depression to be more effective (Level IV).

### **Post-discharge integrated hospital and community care**

Community care post-discharge from acute hospitalization may be an important factor in the prevention of readmissions and improved mental health outcomes in older people. A systematic review of controlled trials evaluating the impact of geriatric medicine post discharge services on mental state found little evidence that they were beneficial (55).

However, controlled trials of mental health service hospital and community integrated care have demonstrated greater effect. In older people hospitalized for medical reasons in the United States, post-discharge interpersonal counselling of patients with subdysthymic depression by community psychiatric nurses was found to be more effective than usual care in reducing depressive symptoms after six months (56). Another trial, the Unified Psychogeriatric Biopsychosocial Evaluation and Treatment (UPBEAT) study in the United States identified older veterans with previously unrecognized psychiatric conditions during medical and surgical hospitalization in nine Veterans' Administration sites. Subsequent comprehensive psychogeriatric assessment and management was arranged post-discharge in a RCT comparing to usual care. At the 12-month follow-up, the intervention group had lower inpatient costs, though this was due to fewer bed days rather than fewer readmissions (34). A cohort study from England reported lower rates of readmission for older people with depression in an old-age psychiatry service where there was after-care by a well-staffed interdisciplinary community mental health team in close liaison with the GP, as compared to a service with outpatient or day hospital follow-up, though the authors note that they were unable to control for illness severity (57). Outpatient follow-up significantly improved survival in the community, compared to no psychiatric follow-up.

Although there have been few studies in this area, integrated post discharge mental health services appear to be an important component in maintaining patients in the community. The quality of available evidence is level II for mental health services treating older people with mental illness and there is no evidence of effectiveness of geriatric medical services (level I).

### **Primary care collaborations**

It is generally agreed that collaboration between primary and specialist care is desirable to improve treatment outcomes. One RCT attempted a simple education program for GPs, implemented by non-medical staff. This pilot study did not demonstrate any effect due to the lack of interest in participating by GPs (58).

Two better quality RCTs demonstrated the benefits of the collaborative approach in primary care in the treatment of late-life depression. A RCT in Australia of a population based multifaceted shared-care intervention for depression included multidisciplinary consultation and collaboration, training of GPs and carers, and depression related health education and activity programs in a residential care

setting (36). At 9.5 months follow-up, the intervention group had significantly greater improvement on the Geriatric Depression Scale than the routine care control group, though the clinical significance of the degree of change was unclear.

A large American multi-centre RCT covered 1801 older patients with access to a psychiatrist-supervised depression case manager and a primary care expert and included education, care management, and support of antidepressant management by the patient's primary care physician or brief psychotherapy. The intervention patients had a significantly better outcome at 12 months with 45% having a 50% or greater reduction in depressive symptoms as compared to 19% in the usual care group. There were also significant benefits in terms of quality of life and functional *capacity* (59).

These two studies provide level II evidence that collaborations between specialist and primary care can be an effective model for the identification and management of late-life depression. Whether such approaches can be effectively extended to a broader range of mental conditions and can be generalized to routine care has yet to be established.

## **Findings: Hospital-based acute treatment**

There have been few RCTs of acute hospital treatment of older people with mental disorders and none controlling for either the type of ward (old-age mental health, general adult mental health or medicine) or hospitalization (hospital versus community care). Published studies of treatment outcome in hospital wards are largely restricted to uncontrolled prospective or retrospective case series; this is a major gap in evidence.

### **General adult mental health wards**

There have been no new studies of general adult mental health wards since a systematic review published in 2000 found only three retrospective and prospective case series. These demonstrated generally positive discharge outcomes with global improvement in 75% to 81% of older people. The quality of evidence for the effectiveness of general adult mental health wards is level IV (37).

### **Acute old-age mental health wards**

Numerous prospective and retrospective case series up to 1998 from Denmark, England, Ireland and the Netherlands and were included in the review (60,61,62,63), and the quality of evidence was judged to be level IV, with consistently positive discharge outcomes for depression but inconsistent outcomes for behavioural disturbances associated with dementia (37). Overall, global measures of discharge outcome indicate that, irrespective of psychiatric diagnosis, 82% to 86% of patients improve (37).

Studies since 1998 have provided evidence of the long-term effectiveness of depression treatments in old-age mental health wards. In one case series from the United States, 69% were non-depressed three months after discharge (64). Philpot et al. (57) undertook a concurrent control study, comparing the outcomes of treatment from two neighbouring old-age mental health services in England that had different service styles. They found that over a follow-up period of five to eight years, 50% of patients were readmitted. Readmissions were less likely in the service that had a community orientation, after longer index admissions and where outpatient and community psychiatric nurse follow-up were arranged. Longer index admissions were associated with greater intensity of antidepressive treatment. These findings suggest that to improve depression outcomes a combination of longer duration initial hospital treatment and active community follow-up should occur. However, previous studies have not shown any significant relationship between duration of hospital admission and treatment outcome (37). Since 1998, two large American case series of acute hospital treatment of BPSD have shown significant improvements on standardized behaviour rating scales (65,66).

In summary, case series and concurrent control studies indicate that discharge treatment outcomes for depression and BPSD are positive in the majority of cases. Long-term outcomes are influenced by

post-discharge follow-up arrangements. The quality of evidence for the effectiveness of acute old-age mental health units is level III-2 for depression and IV for BPSD.

### **Medical wards**

A systematic review of controlled studies of mental health outcomes achieved by geriatric medical services concluded that there was little evidence that they had an important measurable impact upon cognitive function and depression (67). In the prevention of delirium, however, a systematic review concluded that there were modest benefits for systematic interventions in elderly patients on medical wards (68).

Several RCTs of systematic detection and interventions to prevent delirium in the elderly have been completed in recent years with mixed results. A RCT from the U.S. of a multifactorial strategy for the prevention of delirium involving the use of trained volunteers found that the intervention reduced the incidence and duration of delirium but had no significant effect on severity or recurrence (33). These effects were confined to those subjects at intermediate rather than high risk of delirium. At six-months follow-up, there were no significant differences between the groups (69). In contrast, a Canadian study found that systematic detection and multidisciplinary care was not significantly different from usual care in older patients' cognitive outcomes (70). A systematic review of the prevention of delirium in dementia concluded that there was no evidence that delirium prevention programs were effective in this instance (71).

In summary, delirium prevention programs by medical services appear to be modestly effective for older people, mainly for intermediate risk patients without comorbid dementia (level II evidence), but there is little evidence that medical services are effective in treating other mental disorders (level I evidence).

### **Combined old-age mental health and geriatric medical wards**

Combined old age mental health and geriatric medical wards jointly run by psychogeriatricians and geriatricians have been frequently described but have only been evaluated in case series (72,73,74). The wards are described as being particularly useful in the management of the medically unwell, behaviourally disturbed patient, but studies just report length of stay, discharge and mortality data, with no outcomes relating to mental state. Consequently the effectiveness of these wards in improving mental health has yet to be established (level IV evidence). This is a significant gap in evidence.

### **Consultation/liaison (CL) mental health services to medical wards**

A systematic review of studies up to 1998 concluded that there was level III-2 evidence that liaison-style CL services in medical wards were effective on mental health outcomes, with a modest impact on depression outcomes and improved recognition of depression (37). On non-mental health outcomes, there were two RCTs demonstrating reduced length of stay and costs (level II). One of these was from the Netherlands and it demonstrated a significantly reduced length of stay and fewer nursing home admissions than the usual care group (75).

Since 1998, there has been one RCT from England of CL services in acutely ill elderly patients with depression in medical wards. The study had a high attrition rate and found no significant differences between the intervention group and controls at 10 weeks and at one year (76). Case series provide additional outcome data. A study from Italy found that 60% of patients who had received consultations reported 3-5 months later that they felt better (77). There have been no studies directly comparing outcomes of service delivery by generic CL services and old-age mental health services performing a CL function. A review of case series studies from Ireland, Italy, the Netherlands, Sweden, Switzerland and the United Kingdom (78-85) concluded that CL old-age mental health services are more likely to consider post-discharge follow-up and community services as treatment options than generic CL services (86).

In summary, there have been several RCTs that have shown a significant benefit for CL services, though not on mental health outcomes. The overall quality of evidence for the effectiveness of interventions by CL services on non-mental health outcomes such as length of stay and costs is level II, while the level of evidence for mental health outcomes is level IV.

## Findings: Long term institutional care

### Long stay psychogeriatric wards versus community residences

In many countries, long stay psychogeriatric wards were the traditional location of long-term institutional care of older patients with dementia and chronic mental illnesses. Over the last 30 years a combination of deinstitutionalization and transinstitutionalization policies has resulted in a marked reduction in long stay psychogeriatric beds in many countries (29,41). For example, the number of long stay NHS old-age psychiatry beds in the United Kingdom has dropped from 3.4 per 1000 in 1986 to 1.1 per 1000 in 1996 (87). Many patients in traditional long stay psychogeriatric wards were transferred to less restrictive, less expensive community settings (88,89).

There have been several evaluations of long-term psychogeriatric care comparing hospital and community settings but no RCTs. The TAPS project in the UK was set up to evaluate the closure program of Friern and Claybury Hospitals from the early 1980s until the early 1990s. This included adult and elderly long-stay patients but only the studies involving the elderly are considered here. Old-age mental health wards at Friern Hospital were compared with community residences that had been developed as part of the transinstitutionalization program (88,90,91). Patients in the community residences were found to have a better quality of life, more social contacts and more privacy. Schizophrenic patients in the community residences tended to stabilize or improve slightly, while those in the hospital wards deteriorated over three years. The community residences were superior to the hospital wards in terms of family satisfaction, equipment and safety features. The more "home-like" environment of the community residences was particularly noted. Five-year outcomes showed that older schizophrenic patients found it more difficult to make new friends and to learn new skills than younger patients, though their mental state improved more than that of younger patients (92). These advantages need to be interpreted with some caution because the patients selected for the community residences were more highly functioning than those who remained in hospital. Residual hospital patients consisted predominantly of elderly, male and very long-term patients whose most frequent problem behaviours were hostility, physical aggression and incontinence. The one hospital which allowed new admissions to continue indefinitely had the highest proportion of problematic patients (93).

A second evaluation of transinstitutionalization involved the use of domus units in the United Kingdom. These are 12-bed residential facilities that have a philosophy of maintaining residents' independence and residual capacities as far as possible through active participation (94,95). Two facilities were prospectively evaluated: one for dementia residents requiring intensive nursing care and the other for "graduate" patients with chronic schizophrenia. At 12 months, improvements were noted in cognition, communication, self-care skills, activity participation, interpersonal interactions and on measures of resident choice, privacy and control.

A nationwide survey from France compared 110 residents with dementia from 10 *cantoux* with 242 long-term psychogeriatric ward residents with a similar severity of dementia (96). *Cantoux* are an innovative form of communal non-medical care for dementia sufferers – housed in separate enclosed areas with 12 to 15 rooms organized around common living areas – featuring a home-like atmosphere and encouragement of family participation. Using standardized clinical examinations and behavioural observations, *cantou* residents had significantly fewer depressive symptoms, improved communication skills, better quality of life and greater mobility in the first year than psychogeriatric ward residents. Families expressed greater satisfaction with the *cantoux* than hospital wards. Fifty pairs of matched

residents from each type of care were followed up one year later and the findings suggested that some of these differences might be due to differences in the populations at *admission* (96).

An Italian multicentre case series of 55 demented patients with behavioural disturbances admitted to 8 special care units reported an overall reduction in behavioural disturbances, and a decreased use of physical restraints and psychotropic drug use over a 6-month period. The special care units were specifically designed for the management of behavioural disturbances and were located in nursing homes. Staff received specific training in the assessment and management of behavioural problems (97).

One model of long-term care service provision has proposed that there is a small group of older patients with very severe intractable behavioural disturbances, usually aggression, due to dementia and other mental disorders that require care in a secure mental health psychogeriatric facility (5). While this view seems to be in keeping with many expert opinions, there have been no evaluations.

In summary, purpose-built community based residential facilities have advantages over long-term psychogeriatric wards for less dependent patients with dementia and chronic schizophrenia (Level III-2), but it is unclear whether they are suited for patients with very severe aggressive behavioural disturbances. This latter issue is of critical importance in determining the extent to which resources can be safely transferred from long-term psychogeriatric wards to community residences and is another major gap in the literature.

### **Outreach services to community-based long-term residential care**

A systematic review of studies published until 1998 concluded that there was level III-2 evidence for the effectiveness of acute treatment and level II evidence for the effectiveness of prevention programs to reduce behavioural problems and psychotropic drug use (37). There have been six controlled trials published since.

One RCT of special staff training did not demonstrate any benefits after 3 and 12 months in recognizing and managing behavioural disturbances (98). Proctor et al. (99) provided staff training and psychosocial management of behavioural problems in a cluster randomized study involving 12 long-term care facilities. After six months, significant improvements were noted in levels of depression and cognitive functioning in the intervention group but there were no significant differences in behavioural disorders. Ballard et al. (100) performed a non-randomized trial involving weekly visits to six long-term care facilities by a community psychiatric nurse with support from a consultant psychiatrist and a clinical psychologist to develop care plans with medication review in three long-term care facilities. While there were no differences in levels of behavioural disorders or well-being after nine months, the intervention group was prescribed fewer neuroleptic drugs, had fewer GP contacts and used fewer inpatient bed days.

A stimulation-retreat intervention that included staff training, interdisciplinary care planning with a psychologist, activity programming, and family support by a social worker in a special care unit was found to have some significant effects on positive behaviours and affects. However, there were few measurable differences at 12 months compared to the routine care group (101).

Two RCTs of consultative interventions requiring multidisciplinary research teams to be in care facilities for many months found that both intervention and control groups improved significantly on measures of behaviour and psychopathology. Both studies speculated that this may be due to the Hawthorne effect and sharing of intervention benefits, since intervention and control subjects resided in the same nursing home (35,102). One study found a significant decrease in challenging behaviours in the intervention group at one-month follow up (102). In effect, while these studies evaluated consultative interventions, the prolonged involvement of the research staff mimicked a liaison-style intervention, with the research team becoming part of the milieu.

These studies suggest that old-age mental health services provide effective outreach services to long-term residential care where there is a liaison-style with a strong educational component, including treatment guidelines and possibly emotional support and/or supervision of the nursing staff. The quality of available evidence for this type of service is level I. The evidence for the effectiveness of acute treatment using a consultative model is weaker, at level II.

## Current debate

### Evidence-Based Medicine (EBM) in old-age mental health

There are difficulties in applying EBM principles using RCTs in this field as they focus on outcomes rather than process and the latter is just as important when considering quality of care. Critical aspects of old-age mental health service delivery such as the provision of professional care are not easily amenable to RCTs. It has been argued that the evaluation of old-age mental health services is “best achieved by the construction of relatively simple models from an array of complex knowledge” (103).

The overall strength of the published outcome evidence ranges from strong, for community multidisciplinary teams, to relatively weak for acute hospital care, though this is entirely due to a lack of controlled studies rather than evidence of ineffectiveness. A contributing factor is that many service delivery evaluations are undertaken at a local level and are never published. The major concern of old-age mental health professionals is that health policy planners might use the lack of published data in areas such as acute hospital services as grounds to not provide the service when confronted with funding choices. Anecdotal reporting has this already happening in Italy (104).

Despite this, the number of published RCTs has increased in the past five years, though small sample sizes and other methodological problems weaken many studies. The funding required to mount the large multicentre studies required to address questions such as hospital-versus-community treatment is large and probably needs to be obtained from government sources. So the gathering of evidence is slow. One way forward might be to encourage the routine collection of outcome data by clinicians, as advocated by Macdonald and others (105) and now done in Australia.

### Is it feasible or desirable to develop old-age mental health services in Europe?

Few European countries have achieved the style of service organization described in the WPA consensus statement. For example, a 1997 survey found that only the Netherlands, Switzerland and the United Kingdom had a full range of long-term, hospital-based and community-based old-age mental health services in many parts of the *country* (105). Out of six countries (Denmark, France, Germany, Sweden, Switzerland and the United Kingdom) only the latter two offered country-wide community-oriented services for depressed older people (107). The European Union of Medical Specialists (UEMS) Section for Psychiatry recently found membership disagreement about the possibility of setting up specific services for the old-age mentally ill and extending the role of psychiatry in dementia care (108). Lack of resources was the main reason for negative responses. There are few European countries with old-age mental health services that treat the full range of mental disorders in a variety of settings. The tendency is for the work to be split between adult psychiatry, neuropsychiatry, neurology and geriatric medicine. Although there are no high-quality studies addressing service effectiveness, available evidence favours specialist old-age mental health services.

### Do old-age mental health services provide routine mental health care?

There is often uncertainty about what aspects of mental health care are the province of old-age mental health services. In general, they do not provide routine dementia care but have expertise in early diagnosis, particularly when there are comorbid psychiatric syndromes, and in the assessment and management of BPSD. The routine care of dementia patients both at home and in residential settings is provided by a combination of social services, primary health care, aged-care services and NGOs in

partnership with the patients and their care-givers. Indeed, best practice in routine dementia care has not been considered, as this was felt by the authors to be outside the scope of the review. Clearly, old-age mental health services are just one aspect of dementia care.

A similar pattern of care occurs with depression, where old-age mental health services have an important role in assessment but mainly treat moderate-to-severe depression, while mild-to-moderate depression is mainly treated in primary care or by geriatricians. Where there are no old-age mental health services, other services fill the gap but as this review has indicated, evidence suggests that treatment outcomes are worse in those circumstances. In addition, treatment outcomes for depression in primary care are better when there is collaboration with old-age mental health. The liaison role of old-age mental health services with other service providers and consumers incorporates education, training and preventive strategies and, as this review has found, this style of service appears to be more effective than simply providing consultative advice.

## **Discussion**

### **Issues of Cost and Cost effectiveness**

A few published studies have evaluated resource savings, such as in bed-days, but these have not been quantified in monetary terms. There have been no studies that relate cost issues to quality-of-care outcomes such as adverse events, mortality, symptom resolution or consumer satisfaction. There is a real need to undertake such cost effectiveness research to evaluate these consequences against the costs of different service delivery models for old-age mental health services.

### **Funding of long-term care**

Common cost pressures in OECD countries have resulted in widespread deinstitutionalization and transinstitutionalization of older people (29). Community care is relatively inexpensive compared to institutional care. Although there is good evidence that the quality of care may also be better, the community care options featured in published research have been those that were well-designed and organized according to care standards; residences without such features may not be as effective.

There is worldwide concern about how best to finance long-term mental health care for older people with persistent mental disorders (89). There are increasing expectations of user contributions, for example, the English government has rejected a proposal for universally free personal care in NHS long-term care facilities. The call for such care is likely to increase with the ageing population and this will have marked implications for families and government funding. In the United States, long-term care insurance is available privately.

### **State provision of long-term institutional care**

There is a continuing reduction in long-term psychogeriatric hospital beds throughout Europe, but as yet there is no indication of how far this trend should be allowed to continue, particularly the transinstitutionalization to state-funded community residences and privately funded nursing homes. As mentioned previously, at the end of a planned transinstitutionalization program the TAPS project in England has observed that the residual patients have more aggressive behaviour and hostility than the other patients. Of the alternative care facilities based in the community, state-funded facilities catered for most of the "difficult to place" patients within specialized facilities, though there was evidence that these were understaffed and insufficient (93). One model proposes state-funded regional specialist facilities that would be responsible for managing older patients with the most severe behavioural disorders (5). Research is required to determine the parameters for such a proposal.

## **Old-age psychiatry training and research**

Only 18% of European Region countries regard old-age psychiatry as a distinct medical subspecialty and there are some that do not have any senior academic positions in old-age psychiatry (109). This may have adversely affected the development of comprehensive services, as there is evidence that the presence of academic old-age psychiatrists encourages service development and education (110). The European Association of Geriatric Psychiatry, jointly with WHO, WPA and other NGOs, has recently published a consensus curriculum in old-age psychiatry that is designed to stimulate education in the European Region (111). The UEMS Section for Psychiatry survey found that the majority (70%) of countries stated that it would be possible to have psychiatrists with a special expertise in old-age disorders and that there should be at least one major training centre in each *country* (108). The development of more professorial level academic old-age psychiatry positions in countries where they are deficient may assist this educational process.

## **Partnerships with stakeholders**

Consumer and care-giver involvement in old-age mental health service delivery has been increasing over the past decade and this trend is likely to continue. It may range from participation in executive decision-making to provision of practical aspects of care. Community care may come at the cost of increased strain upon care-givers; there is good evidence that support programs are effective in reducing stress and delaying institutionalization. One measure of the effectiveness of an old-age mental health service is the quality of its work with care-givers and consumers.

To date, most care-giver support programs are organized and funded by NGOs, and there is need for more formal state financial and practical input. The interplay between health and welfare services is also important, as there is often an overlap of the target groups. For example, day hospitals funded by health services and day care services funded by welfare services may both include dementia cases, though day hospital attendees are more likely to have severe BPSD (45). Further development of collaborative care arrangements between primary and specialist services is required to determine the most appropriate model.

Care-giver and consumer involvement in health service planning, administration and service delivery has increased in recent years and these trends are likely to increase over the next few decades, with patients' and consumers' rights receiving greater attention. The experiences in Sweden – where normalization policies intended to enhance the autonomy of mentally impaired people resulted in substandard care of those with dementia and other mental disorders – are an example of how this balance can be difficult to achieve (112). It also illustrates the importance of having policies that stipulate both health and welfare outcomes with strong linkage among agencies. Recent reform of the NHS in Scotland has stipulated that health services need to have strong roots in the community and form partnerships with social care and include public involvement in health service planning and redesign (113).

## **The impact of technology and new pharmacological developments**

The development of new anti-dementia drugs over the next 20 years could have an enormous impact upon service delivery. Early treatment might prevent the development of significant dementia, while later treatment may slow or prevent progression. While this might reduce long-term institutional care needs, it is possible that the need for community care will increase. Thus, cost savings from residential care may be replaced by the costs of the drugs and community care. Other technologies that might have an impact include improvements in neuro-imaging and the development of biomarkers for the early diagnosis of Alzheimer's disease (114,115,116). Diagnosis of pre-clinical dementia allied with effective treatments could dramatically reduce the prevalence of symptomatic dementia and hence the need for mental health services and long-term residential care. Developments in the prevention and more effective treatment of late-life depression are not as well advanced though there are innovative treatments such as Magnetic Seizure Therapy and Repetitive Transcranial Magnetic Stimulation in trials (117,118,119).

Improvement in the availability and performance of information technology will be important. It is now standard practice for most health services to have networked PCs for internal communication and for accessing policies, protocols, patient records and the results of investigations. In some settings, the electronic medical record (EMR) has already largely replaced hard copy records. It has been suggested that the EMR in geriatrics will involve the participation of the multidisciplinary team, family, patients and other care providers in coordinating data from a variety of novel sources about diet, medication use, falls, mobility and the use of sensors on older people to monitor physiological parameters (120). Computerized cognitive testing is already available on the Internet and is likely to be used more widely as it becomes refined.

In Hong Kong and the United States, telepsychiatry using videoconferencing has been found to be feasible and cost-effective in linking rural and regional centres to urban psychogeriatric services (121,122). With further technological improvements, the attraction of telepsychiatry as a cost-effective method of providing on-going support to understaffed rural services is likely to increase.

## **Areas for further research**

### *Models of care*

Are the mental health outcomes for older people better in European countries that have comprehensive integrated old-age mental health services than in those that do not? Multicentre European studies that examine the outcomes of mental health treatment of depression and BPSD could be undertaken to address this question. These studies could further address the issue of the comparative outcomes of care provided by different medical and health care providers.

### *Best practice in old-age mental health*

The use of treatment guidelines and protocols based upon contemporary research has been shown to improve the quality of care in adult mental health (123). Few studies have been undertaken in old-age mental health though one demonstrated that a clinical path model defining staff responsibilities and time lines in the management of depression in an inpatient unit resulted in a shorter length of stay and reduced costs, but no clinical outcomes were reported (124). The management of depression is one area that is particularly suited to the use of treatment guidelines in old age, but there has been no published research in specialist care.

### *Controlled trials of acute hospital and community-based treatment of mental disorders*

How do we determine the best setting for the safe, effective treatment of acute mental disorders in old age? Currently, the treatment setting is largely determined by resource availability rather than by efficacy of treatment. So it is not an adversarial, hospital-versus-community question, but rather one of determining the best matrix of services. Multi-centre studies involving comparisons of day hospitals, multidisciplinary community teams and acute hospital settings (old-age mental health and adult mental health, with and without post-discharge community care) are required. These studies should consider the criteria for the use of different types of care and the optimal balance of service components in a catchment area from the perspective of patients, care-givers, service providers and administrators.

## **Generalizability of findings**

Most of the research in this field has been undertaken in Australia, North America and the United Kingdom with relatively few studies in continental Europe. There is a consistency of results among countries when similar studies are undertaken in a particular service setting under controlled conditions. The generalizability of a specific component of service delivery without due recognition of the total matrix of services required in other settings is less clear. The issue may be less cultural than structural. So while these studies may be extrapolated to Western Europe, implications are less clear for Eastern Europe, which might have more in common with developing countries, where the challenge is to adapt existing primary health services to a rapidly ageing population with limited assistance from secondary or tertiary services.

## **Conclusions**

Provision of effective care to older people with mental health problems is multidimensional, featuring specific interventions for different disorders, and a complex array of possibilities for service delivery in community, hospital and long-term care settings in an integrated model of care. This synthesis presents the evidence of effectiveness available for these, recognizing that high-quality care requires partnership among all stake-holders (primary and acute care, social services, government departments, NGO's, patients and carers).

Models of care have only been evaluated for the general care of older people, not mental health per se. For this general model, features of an effective system include a single entry point system, case management, geriatric assessment, a multidisciplinary team and financial incentives to encourage less expensive community-based care.

Some pharmacological and psychosocial treatments have been demonstrated to have modest effectiveness for the treatment of depression in old-age and dementia. There is little evidence of effective treatments for other mental illnesses in older people.

In terms of service delivery of old-age mental health services:

- there is good evidence (level I/II) to support the effectiveness of multidisciplinary, individualized community services; primary/specialist care collaborations for treatment of late life depression; outreach services to residential care; integrated post discharge mental health services and treatments given to prevent delirium in medical wards (but effects are modest);
- there is limited evidence (level III or II/IV) to support consultation/liaison mental health services to medical wards and long-term psychogeriatric wards for less dependent patients;
- there is weak evidence (level IV) to support day hospitals, general adult mental health wards, old-age mental health wards, combined old-age mental health and geriatric wards; and
- no benefit was found from geriatric medical post-discharge services.

Some aspects of old-age mental health services have been demonstrated to be effective, especially in community settings, but there are significant gaps in knowledge in acute hospital, day hospital and long-term residential care. To help address this, the routine collection of cost and outcome data should be encouraged and governments should consider funding sufficiently sized multicentre studies to address questions involving models of care and best practice.

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## Annex 1: Synthesis methods

The two authors of this synthesis independently assessed data quality in the controlled trials and audits, using a revised version of the Methodological Quality Instrument (7). Of the original 24 items on the instrument, items 14 (“was measurement bias accounted for by methods other than blinding”) and 16 (“were confounders accounted for by analysis”) were deleted and items 1, 3 and 7 from the Pretest Clinical Relevance Instrument included in the same publication were added. We also added three additional items in order to tailor the scale more towards non-pharmacological studies so that our revised scale totalled 28 items. These additional items were “Was the intervention adequately described?”, “Were the number of therapeutic outcomes measured adequate?” and “Were problems/difficulties encountered discussed?” The instrument was scored as described in the original paper (7). The first item, study design, was scored as follows: randomized experimental studies = 15, unrandomized comparative trials = 12, cohort and cross-sectional studies = 9, time series, crossover or natural experiments = 6, and case reports or case series = 3. No score was awarded for item 2, “What was the study question”. Items 3 to 28 were scored 0 for ‘no’ or ‘insufficient evidence’, 1 for ‘partial’, 2 for ‘yes’ or not applicable. Item scores were totalled and then divided by the maximum possible (67) minus 2 points for each not applicable item to produce scores ranging from 0.00 - 1.00, with higher scores representing better quality studies. The inter-rater reliability between authors was high (Kendall's W = .866,  $p < 0.001$ ).

The overall quality of the evidence for the effectiveness of old-age mental health service delivery in specific domains was rated on an evidence hierarchy that has four levels of evidence (8) as shown in Table 2, where I is the highest level of evidence.

**Table 2. Designation of Levels of Evidence**

|       |  |
|-------|--|
| I     | obtained from a systematic review of all relevant randomized controlled trials   |
| II    | obtained from at least one properly designed randomized controlled trial   |
| III-1 | obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method)  |
| III-2 | obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomized, cohort studies, case-control studies, or interrupted time series with a control group |
| III-3 | obtained from comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group   |
| IV    | obtained from case series, either post-test or pretest/post-test   |

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## Annex 2: Glossary

|                                    |   |
|------------------------------------|---|
| BPSD                               | Behavioural and psychological symptoms of dementia  |
| <i>Cantou</i>                      | communal non-medical care in 12-15 room units organized around common living areas, in a home-like atmosphere with family participation encouraged  |
| Case series                        | an uncontrolled study of outcomes for a series of patients receiving a particular intervention  |
| Consultation/Liaison (CL) services | consultation – referral for mental health assessment and management advice; treatment may be provided by either the consultant or the referring agent<br><br>liaison - mental health service working with patients and health professionals in specific units; usually includes an educational role, collaboration with unit staff, and a good understanding of systems theory; often patients are discussed but not seen |
| Cohort study                       | an observational study following a group over time, comparing the outcomes of subsets who received different types of care; because random allocation is not used, matching or statistical adjustment at the analysis stage should be used to minimise the influence of factors other than the intervention or factor of interest   |
| Deinstitutionalisation             | the transfer of patients from institutional settings to community settings  |
| Domus unit                         | small community-based residential facilities that seek to maintain residents' independence and residual capacities through active participation   |
| Effectiveness                      | whether services deliver the outcome(s) in the way that is claimed in actual practice; does it do more good than harm   |
| Efficacy                           | whether services deliver the outcome(s) in the way that is claimed in ideal conditions; can it work   |
| Gerontopsychiatric                 | mental health care for older people   |
| GP                                 | general practitioner  |
| Index admission                    | the first admission for the subject in the study period   |
| HoNOS                              | Health of the Nation Outcome Scales   |
| NGO                                | Non-Governmental Organisation   |
| Quasi-experimental study           | a study with non-random assignment of participants to groups, usually because it would be unethical or unfeasible to randomize  |
| RCT                                | randomized controlled trial   |
| Systematic detection               | all eligible subjects are screened for the presence of the condition being investigated   |
| Systematic interventions           | interventions involving the use of a standardized protocol based on best practice guidelines  |
| Transinstitutionalization          | the transfer of patients from one type of institutional setting to another, usually from long-stay psychiatric wards to some form of nursing  |

|      |                                       |
|------|---------------------------------------|
|      | home                                  |
| UEMS | European Union of Medical Specialists |
| WPA  | World Psychiatric Association         |