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Selecting Indicators for the Quality of Mental Health Care at the Health Systems Level in OECD Countries

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Richard Hermann, Soeren Mattke and the Members of the OECD Mental Health Care Panel

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OECD HEALTH TECHNICAL PAPERS NO. 17

SELECTING INDICATORS FOR THE QUALITY OF MENTAL HEALTH CARE AT THE HEALTH SYSTEMS LEVEL IN OECD COUNTRIES

RICHARD HERMANN, SOEREN MATTKE AND THE MEMBERS OF THE OECD MENTAL HEALTH CARE PANEL

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SUMMARY

1. This report presents the consensus recommendations of an international expert panel on indicators for mental health care. Using a structured review process, the panel selected a set of 12 indicators to cover the four key areas treatment, continuity of care, coordination of care, and patient outcomes. The report describes the review process and provides a detailed discussion of the scientific soundness and policy importance of the 12 indicators as follows:

Area	Indicator Name
Continuity of Care	Timely ambulatory follow-up after mental health hospitalisation
	Continuity of visits after hospitalisation for dual psychiatric/ substance related conditions
	Racial/ethnic disparities in mental health follow-up rates
	Continuity of visits after mental health-related hospitalisation
Coordination of Care	Case management for severe psychiatric disorders
Treatment	Visits during acute phase treatment of depression
	Hospital readmissions for psychiatric patients
	Length of treatment for substance-related disorders
	Use of anti-cholinergic anti-depressant drugs among elderly patients
	Continuous anti-depressant medication treatment in acute phase
	Continuous anti-depressant medication treatment in continuation phase
Patient Outcomes	Mortality for persons with severe psychiatric disorders

RESUME

2. Ce rapport présente les recommandations consensuelles d'un groupe d'experts internationaux sur les indicateurs relatifs aux soins de santé mentale. En suivant une méthodologie détaillée, le groupe d'experts a entrepris de sélectionner 12 indicateurs devant couvrir quatre grands domaines : le traitement, la continuité des soins, la coordination et les résultats. Le rapport décrit la méthodologie employée et démontre, arguments l'appui, la viabilité scientifique et l'importance stratégique des 12 indicateurs présentés ci-dessous.

Domaine	Nom de l'indicateur
Continuité	Délai de suivi ambulatoire après une hospitalisation pour trouble mental
	Continuité du suivi après une hospitalisation pour co-occurrence de troubles psychiatriques et de troubles liés à l'usage de substances
	Disparités raciales/ethniques des taux de suivi en santé mentale
	Continuité du suivi après hospitalisation pour troubles mentaux
Coordination	Prise en charge des troubles psychiatriques sévères
Traitement	Consultations en phase aiguë du traitement de la dépression
	Réhospitalisations de patients psychiatriques
	Durée du traitement des troubles liés à l'usage de substances
	Utilisation de médicaments anti-dépresseurs anti-cholinergiques chez les patients âgés
	Traitement médicamenteux anti-dépresseur continu en phase aiguë
	Traitement médicamenteux anti-dépresseur continu en phase d'entretien
Résultats	Mortalité chez les personnes souffrant de troubles psychiatriques sévères

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INTRODUCTION

Background

3. This paper presents proposals for indicators of quality of care in the area of mental health care. This is one of five areas, which have been identified by the OECD as having priority for the development of quality indicators (see Box 1). The Expert Group recommended identifying a shortlist of potential indicators for the six priority areas through panels of country experts and consultants in close collaboration with the Secretariat. Given resource constraints, this work was limited to reviewing existing indicators in Member countries rather than developing new indicators. This Working Paper summarizes the proceedings and indicator recommendations of the Mental Health Panel. The first section describes the panel's methods of indicator selection and the second part the recommended indicators. The third section concludes with a discussion of the comprehensiveness and cohesiveness of the indicator set. A comprehensive discussion of all recommended indicators and short biographies of the Panel members can be found in Annex 1 and Annex 2, respectively.

Box 1. The OECD Quality Indicator Project

The technical quality of medical care, long regarded as a professional responsibility rather than a policy issue, now rivals cost and access as the foremost concern of health policymakers. A growing body of evidence suggests that the daily practice of care does not correspond to the standards that the medical profession itself puts forward. In addition, improving quality of care presents itself as an avenue to restraining the growth of medical expenditures by reducing costly complications and unnecessary procedures. In other words, better organisation and management of medical care would allow countries to spend their health care dollars more wisely. To improve care for their citizens and to realise these potential efficiency gains, policymakers are looking for methods to measure and benchmark the performance of their health care systems as a precondition for evidence-based health policy reforms. As published international health data sets such as OECD Health Data currently lack comparable measures for the technical quality of national health systems, there is, so far, little possibility of such international benchmarking. To fill this gap, the OECD Health Care Quality Indicators Project (HCQI) has brought together 21 countries,[1] the World Health Organization (WHO), the European Commission (EC), the World Bank, and leading research organisations, such as the International Society for Quality in Health Care (ISQua) and the European Society for Quality in Healthcare (ESQH). An expert group representing these countries and organizations has identified five priority areas for initial development of indicators: cardiac care, diabetes mellitus, mental health, patient safety, and prevention/health promotion together with primary care

1. The participating countries are Austria, Australia, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Mexico, The Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States.

Methods of Indicator Selection

Conceptual Approach

4. To ensure comprehensive coverage of the most relevant domains of mental health care by the selected set of measures, the Mental Health Panel decided that the final indicator set ought to cover the following four key aspects of mental health care:

- Treatment;
- Continuity of Care;
- Coordination of Care; and
- Patient Outcomes.

Results of the Indicator Selection Process

5. A total of 134 indicators from 24 different sources were initially identified by the Secretariat. To reduce this list to a number of indicators that could be reasonably evaluated by the Panel, the Chair in collaboration with the Secretariat identified a short list of 24 indicators, which met the following screening criteria:

- The indicator measures the technical quality with which are is provided, not interpersonal or consumer perspectives;
- The indicator is focused on quality of care, not on cost or utilisation;
- The indicator is built on a single item, not on a multi-item scale;
- The indicator is likely to be useful in quality assessment at the health care system level, rather than the provider level; and
- The indicator can likely be constructed from administrative data using uniform coding systems (*e.g.*, ICD 9 or DSM codes), rather than might require dedicated data collection or non-standardized data elements.

6. Five of those 24 indicators met the initial selection criteria, whereas four indicators were rejected using those criteria. The Mental Health Panel evaluated the remaining 15 indicators through a series of conference calls and email discussions and converged on a final list of 12 indicators that are listed in Table 2. A detailed discussion of their importance and scientific soundness can be found in Annex 1.

Box 2. Selection Criteria for Quality Indicators

Following the recommendations for indicator evaluation developed by the US Institutes of Medicine, the Expert Group and all expert panels agreed on the following three selection criteria for indicators (Hurtado, Swift, and Corrigan, 2001). First, it had to capture an important performance aspect. Second, it had to be scientifically sound. And third, it had to be potentially feasible.

The importance of an indicator can be further broken down into three dimensions:

Impact on health. What is the impact on health associated with this problem? Does the measure address areas in which there is a clear gap between the actual and potential levels of health?

Policy importance. Are policymakers and consumers concerned about this area?

Susceptibility to being influenced by the health care system. Can the health care system meaningfully address this aspect or problem? Does the health care system have an impact on the indicator independent of confounders like patient risk? Will changes in the indicator give information about the likely success or failure of policy changes?

The scientific soundness of each indicator can also be broken down into two dimensions:

Face validity. Does the measure make sense logically and clinically? The face validity of each indicator in this report is based on the basic clinical rationale for the indicator, and on past usage of the indicator in national or other quality reporting activities.

Content validity. Does the measure capture meaningful aspects of the quality of care?

The feasibility of an indicator reflects the following two dimensions:

Data availability. Are comparable data to construct an indicator available on the international level?

Reporting Burden. Does the value of the information contained in an indicator outweigh the cost of data collection and reporting?

As the panels were not able to make a definite statement about data availability for an indicator in all OECD countries, feasibility was given less weight in the decision process. The participating experts were asked to express their opinion as to whether it was likely, possible or unlikely to find comparable data on the international level for each indicator. If data availability was regarded as unlikely, an indicator was dropped, unless strong conceptual reasons existed to retain it.

All panels also agreed on the use of a modified Delphi process for quality measure selection developed by the RAND Corporation (Kerr et al., 2000) and further adapted by other investigators (Hermann, In press, b). Each panel member would rate each indicator individually on a scale from one to nine for the scientific soundness and importance dimensions,. The panel would then discuss the indicator, potentially ask its members to reconsider their original ratings and make a final decision. Scores from seven to nine reflected support of the indicator, scores between one and three rejection of the indicator and scores between four and six ambivalence towards an indicator. The Mental Health Panel decided that all indicators with a final median score of at least 7.0 for both importance and scientific soundness and more than half of the panellists reporting data availability as “possible” or better were included in the final set; indicators with median scores less than or equal to 3.0 or with half or more of the panellists reporting data availability as “unlikely” were excluded; and the remaining indicators, i.e. the ones that fit between the cut-off criterion, were thoroughly discussed by the panel, leading to their adoption or rejection on a case-by-case basis.

Discussion of the Cohesiveness and Comprehensiveness of the Proposed Indicator Set for the Area of Mental Health Care

7. The Mental Health Panel believes that the final recommended set of 12 indicators addresses clinically important processes in the areas of treatment, continuity and coordination that have known variability in practice. Eight indicators assess outpatient care, while one examines inpatient care. While one indicator assesses contra-indicated medication use for elderly patients, care for children and adolescents is not addressed. None of the indicators explicitly examine primary care where the greatest proportion of

mental health care takes place, but several are applicable to this setting. Four indicators relate to the administration of drugs, one to psychotherapy, and another to case management.

8. The indicator that examines the reduction in life expectancy for people diagnosed with a major mental illness reflects research findings that individuals with severe mental disorders, particularly schizophrenia, die at a younger age than members of the general population (Harris and Barraclough, 1998). This indicator will require further investigation into the availability of mortality data in member countries and the potential for linkage to mental health data. The selection of this indicator seeks to encourage the linkage of mortality and mental health databases, perhaps by using the type of approach adopted by cancer registries.

9. The recommended list of measures should be regarded as an initial effort to identify suitable measures for international comparisons of mental health care quality. The time constraints on the project and the restriction of the work of this Panel to a review of existing indicators did not allow the development of a comprehensive measurement system. However, the review could identify a short list of well-documented measures that mostly are in current use and that cover many of the relevant domains of mental health care quality. While much further work is needed, the Panel believes that a solid foundation for future efforts has been built.

10. Some gaps remain, in particular in areas such as psychotherapeutic treatments. In addition, they give very limited insight in to disparities in care among racial and ethnic minorities, or other issues related to equity. They also omit consideration of accessibility of care, safety issues, or integration of social services along with mental health care for those with severe psychiatric disabilities.

11. These omissions do not reflect oversight; operationalising effective performance indicators in these areas faces many challenges (Hermann, 2002; In press, a). Furthermore, selecting a set of indicators for international use is constrained by the limited range of data potentially available on a comparable basis in many countries. Administrative data systems commonly focus most extensively on numbers and locations of hospitalisations and outpatient visits. Diagnostic information is typically only collected when required for billing. Administrative data lack information on the severity of patient symptoms and functional impairment, as well as the content of many clinical treatments.

12. Many of these limitations also exist in other areas of health care; some issues further complicate quality assessment of mental health care (Glover, 1990). There are many well-developed rating scales that assess psychiatric symptoms and functioning, but little consensus either within or among most countries on where and when they should be used. This greatly limits the availability of data on outcomes of acute psychiatric syndromes. It is methodologically difficult to assess the impact of psychosocial interventions on patients' quality of life. The benefits of these treatments may emerge long after an intervention. Progress is likely to be influenced by extraneous circumstances as much as by treatment interventions. Recording the nature of psychological interventions is difficult, as practitioners vary considerably in skill levels, and often make eclectic use of multiple therapeutic models.

13. These indicators will need refinement as the availability of comparable international data is further investigated. Standardising the assessment of illness severity and quality of life is of importance if outcome measurement is to advance in mental health care. A new generation of rating instruments for use in routine clinical settings has emerged over the last ten years, but awareness and use of them is limited. There is a similar need for consensus on a restricted number of clinical data elements that should be included in administrative data sets to advance quality assessment and motivate improvement efforts.

Table 1. Indicator Sources

Set Name	Description
Advisory Network on Mental Health	The indicators were prepared for the Canadian Federal/Provincial/Territorial Advisory Network on Mental Health (ANMH), which has been concerned with promoting evidenced-based decision-making as a key principle in mental health reform. The set represents eight domains of performance for health system performance including: acceptability, accessibility, appropriateness, competence, continuity, effectiveness, efficiency, and safety.
CMHS/MHSIP	This set of indicators was developed by the Mental Health Statistics Improvement Project (MHSIP) Task Force on a Consumer-Oriented Mental Health Report Card, undertaken by the US Center for Mental Health Services (1996).
VHA/NEPEC	The US Veterans Administration (VA), through the Northeast Program Evaluation Center (NEPEC) developed a monitoring system for mental health indicators in order to stimulate system change and improvement. The measures used in this system were derived from existing measures, and the vast majority were developed for the monitoring system and were reviewed and refined through dialogue with over 150 VA and non-VA mental health clinicians and administrators. The current monitors are grouped into five major assessment domains, which are sub-divided into sub-domains composed of sets of specific monitors.
IPMES/Workscopes	New York State Office of Alcoholism and Substance Abuse Services uses the Integrated Program Monitoring and Evaluation System and Workscope Objective Attainment System (IPMES/Workscopes) to evaluate the efficiency and effectiveness of alcoholism and substance abuse treatment services. The IPMES monitors the program performance of OASAS licensed treatment programs and identifies areas where the programs appear to be operating below expectations.
DHHS, US National Quality Report	This measure set was developed by the US Department of Health and Human Services for the US National Quality Report to be published in 2003.
US National Inventory of Mental Health Quality Measures	Developed by the Center for Quality Assessment and Improvement in Mental Health (www.cqaimh.org), the measure inventory provided information on properties related to importance, scientific soundness and operational issues for measures cited in this working paper (Hermann, 2002; In press, a; In press, b)
VHA/ DOD Performance Measures, Version 2.0	These measures were developed in 2000, in a collaborate effort by the US Veterans Health Administration (VHA) and the US Department of Defence (DOD) for the management of major depressive disorder in adults.
Wells, *et al.* (1994)	These indicators were developed for a research project on the quality of anti-depressant medications prescribed at discharge to depressed elderly patients in general medical hospitals.

Table 2. Summary table of recommended set

Area	Indicator Name	Numerator	Denominator
Continuity of Care			
	Timely ambulatory follow-up after mental health hospitalisation	Number of persons hospitalised for primary mental health diagnoses with an ambulatory mental health encounter with a mental health practitioner within i) 7 days and ii) 30 days of discharge.	Number of persons hospitalised for primary mental health diagnoses.
	Continuity of visits after hospitalisation for dual psychiatric/ substance related conditions	Number of persons with at least four psychiatric and at least four substance abuse visits within the 12 months following discharge.	Number of hospital discharges for dual diagnosis of psychiatric disorder and substance abuse.
	Racial/ethnic disparities in mental health follow-up rates	Number of persons with at least one visit in 12 months after initial visit stratified by race/ethnicity.	Number of individuals with a mental health-related visit.
	Continuity of visits after mental health-related hospitalisation	Number of persons with at least one visit per month for six months following hospitalisation.	Number of persons hospitalised for psychiatric or substance-related disorder.
Coordination of Care			
	Case management for severe psychiatric disorders	Number in receipt of case management (all types).	Number of persons with specified severe psychiatric disorder in contact with the health care system.
Treatment			
	Visits during acute phase treatment of depression	Number of persons with at least three medication visits or at least eight psychotherapy visits in a 12-week period.	Number of persons with a new diagnosis of major depression.
	Hospital readmissions for psychiatric patients	Of the total number of discharges from psychiatric inpatient care during a 12 month reporting period, the total number of readmissions to psychiatric inpatient care that occurred within i)7 days and ii) 30 days.	Total number of discharges from psychiatric inpatient care during a 12-month reporting period.
	Length of treatment for substance-related disorders	Number of persons with treatment lasting at least 90 days.	Number of persons initiating treatment for a substance-related disorder.
	Use of anti-cholinergic anti-depressant drugs among elderly patients	Number of persons using an anti-cholinergic anti-depressant drug.	Number of persons age 65+ prescribed anti-depressants.
	Continuous anti-depressant medication treatment in acute phase	Number of persons age 18 years and older who are diagnosed with a new episode of depression and	Number of persons age 18 years and older who are diagnosed with a new episode of depression and

Area	Indicator Name	Numerator	Denominator
		treated with anti-depressant medication , with an 84-day (12 week acute treatment phase) treatment with anti-depressant medication.	treated with anti-depressant medication.
	Continuous anti-depressant medication treatment in continuation phase	Number of persons age 18 years and older who are diagnosed with a new episode of depression and treated with anti-depressant medication, with a 180-day treatment with anti-depressant medication.	Number of persons age 18 years and older who are diagnosed with a new episode of depression and treated with anti-depressant medication.
Patient Outcomes			
	Mortality for persons with severe psychiatric disorders	Standardised mortality rate for persons with specified severe psychiatric disorders.	Standardised mortality rate for the total population.

ANNEX 1: DETAILED DISCUSSION OF THE RECOMMENDED INDICATORS

Continuity

Timely Ambulatory Follow-Up after Mental Health Hospitalisation

Operational definition

14. **Source:** Advisory Network on Mental Health.[2]

Numerator: Number of persons hospitalised for primary mental health diagnoses with an ambulatory mental health encounter with a mental health practitioner within i) 7 days and ii) 30 days of discharge.

Denominator: Number of persons hospitalised for primary mental health diagnoses.

15. Data requirements: Administrative data.

Importance of the indicator

16. Most patients treated in the inpatient setting for a psychiatric disorder require follow-up ambulatory care to promote further recovery and prevent relapse. Scheduling outpatient appointments proximally to discharge is generally recommended to address side effects that can result from inpatient medication changes and to support compliance with the treatment plan.

Scientific soundness of the indicator

17. Data indicate there is wide variability in the duration between hospital discharge and the first ambulatory follow-up visit, some of which is related to patient factors (*e.g.*, severity of illness) and some to system factors (*e.g.*, availability of outpatient appointments). Shorter gaps between discharge and aftercare may contribute to greater continuity of care and lower risk of relapse, although research evidence on this question is mixed.

Operational issues

18. This indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors.

19. Conformance results: (7-day) - 63%, Massachusetts hospitals (MBHP, 1998); 44.4%, 1998 (NCQA, 2001); 47.4%, 1999 (NCQA, 2001); 48.2%, 2000 (NCQA, 2001).

2. Mental Health Evaluation and Community Consultation Unit (2001); British Columbia Ministry of Health (2001).

Continuity of Visits After Hospitalisation for Dual Psychiatric/Substance Related Conditions

Operational definition

20. **Source:** VHA/NEPEC.[3]

Numerator: Number with at least four psychiatric and at least four substance abuse visits within the 12 months following discharge.

Denominator: Number of hospital discharges for dual diagnosis of psychiatric disorder and substance abuse.

21. Data requirements: Administrative data.

Importance of the indicator

22. Comorbid psychiatric and substance abuse disorders (*i.e.*, "dual diagnoses") are associated with higher treatment costs, lower compliance and poorer treatment outcomes than either category of conditions individually. A WHO study found that mental illness including substance misuse, accounted for almost 11% of the global burden of disease in 1990 (Murray and Lopez, 1996). It is increasingly recognised that, particularly in less educated and poor populations, major mental illness (specifically schizophrenia and affective disorders) has been ineffectively treated in the past due to the failure to recognise that associated substance misuse if present to a significant level, is a variable that has a powerful influence on outcome. In such cases, identification of a dual diagnosis leads to more effective treatment by ensuring that the patient receives care that focuses on both the mental illness and substance misuse.

Scientific soundness of the indicator

23. Research studies have found that providing appropriate treatment for both conditions in the presence of dual diagnosis is associated with an increased likelihood of abstinence, improved psychiatric outcomes and a lower likelihood of subsequent hospitalisation.

Operational issues

24. This indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors. A case mix adjustment model has been devised for use of this measuring adjusting for age, gender, race, primary psychiatric diagnosis, total number of discharge diagnoses and dual diagnosis (Leslie and Rosenheck, 2000).

25. Availability of interpretive data: Conformance results: 3.8-50.2%, inpatients from VA medical centres (Rosenheck and Cichetti, 1995).

Racial/Ethnic Disparities in Mental Health Follow-Up Rates

Operational definition

26. **Source:** CMHS/MHSIP (1996)

3. Direct reference from: Rosenheck R. and Cichetti D. (1995)

Numerator: Number with at least one visit in 12 months after initial visit stratified by race/ethnicity.

Denominator: Number of individuals with a mental health-related visit.

27. Data requirements: Administrative data.

Importance of the indicator

28. This indicator attempts to assess engagement in treatment of individuals from different racial/ethnic groups. Patients from minority racial/ethnic groups have been shown in some research studies to have lower utilisation and less satisfaction with health care compared with non-minority populations. Reports describe how culture, ethnicity, language and age may impose barriers to mental health services. Efforts are underway in some areas to improve the "cultural competence" of care.

Scientific soundness of the indicator

29. One study has shown a relationship between patient-provider cultural compatibility and mental health service use. However, at present there is little empirical evidence that specifically addresses the association between cultural competence and clinical outcomes.

Operational issues

30. This indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors. The definition of minority and/or disadvantaged populations may vary across countries. It is conceivable to apply this indicator to different subgroups, which reflect national policy priorities, in each country and compare internationally how countries provide care for their problem populations.

Continuity of Visits after Mental Health-Related Hospitalisation

Operational definition

31. **Source:** VHA/NEPEC[4]

Numerator: Number of persons with at least one visit per month for six months following hospitalisation.

Denominator: Number of persons hospitalised for psychiatric or substance-related disorder.

32. Data requirements: Administrative data.

Importance of the indicator

33. Most individuals receiving inpatient treatment for a psychiatric disorder require ongoing ambulatory care after discharge to promote further recovery and prevent relapse. This indicator examines the proportion of patients who receive monthly visits for six months following discharge, providing an utilisation-based indicator of continuity of care.

4. irect reference: Leslie D. and Rosenheck R. (2000)

Scientific soundness of the indicator

34. A number of studies have examined the association between the frequency of aftercare after hospitalisation and the likelihood of readmission, but results have been mixed. In a randomised controlled trial, Herz *et al.* found that a multi-modal intervention that included frequent outpatient visits resulted in decreased relapse in schizophrenia, but the isolated effect of more frequent visits was not studied (Herz *et al.*, 2000).

Operational issues

35. This utilisation-based indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors. A case mix adjustment model has been devised for use of the indicator among military veterans, using age, gender, diagnosis, dual diagnosis and military-service connected illness (Leslie and Rosenheck, 2000).

36. Availability of interpretative data: Conformance results: 8.7-12.4, 172 VA medical centres (Leslie and Rosenheck, 2000); 11.6-13.0, 200 private insurance plans nationwide (Leslie and Rosenheck, 2000); 17.6-17.9, general psychiatric patients from 22 Veterans Integrated Service Networks 1998-99 (Rosenheck and DiLella, 2000); 25.8-26.4, substance abuse patients from 22 Veterans Integrated Service Networks 1998-99 (Rosenheck and DiLella, 2000).

Coordination of Care

Case Management for Severe Psychiatric Disorders

Operational definition

37. **Source:** Advisory Network on Mental Health.[5]

Numerator: Number in receipt of case management (all types).

Denominator: Number of persons with specified severe psychiatric disorder in contact with the health care system.

38. Data requirements: Administrative data.

Importance of the indicator

39. Individuals with severe mental illness typically require support services beyond mental health care, such as social assistance and community-based services such as housing, benefits and rehabilitative care. Case management services may be provided to assist patients in navigating a potentially complex set of rules and institutions. This coordination of services for this severely disabled population is expected to result in improved clinical outcomes but also in more efficient resource utilisation and thus cost savings. In particular, case management aims at allowing patients to live independently, which will reduce the need for costly institutional care.

5. Mental Health Evaluation and Community Consultation Unit (2001); British Columbia Ministry of Health (2001).

Scientific soundness of the indicator

40. Three recent, comprehensive reviews have been conducted on the effectiveness of case management (Gorey *et al.,* 1998; Mueser *et al.,* 1998; Marshall *et al.,* 2000). One examined case management models collectively, including intensive programs such as Assertive Community Treatment (ACT), and found strong evidence for their effectiveness. The other two reviews looked separately at case management programs other than ACT, finding a lack of conclusive evidence supporting effectiveness for these programs.

Operational issues

41. Case mix issues for case management measures have been addressed through denominator specifications that include specified diagnoses and levels of acuity (*e.g.,* using a threshold numbers of recent hospitalisations or ER visits).

42. Availability of interpretative data: Standards: 100% "are offered" (TennCare Partners Program, 1999).

43. Data availability: This data would need to be collected via chart review and/or a clinical registry, modelled on the experience in other areas of care (*e.g.,* National Registry of Myocardial Infarction in the US).

Treatment

Visits During Acute Phase Treatment of Depression

Operational Definition

44. **Source:** VHA/DOD Performance Measures, Version 2.0 (2000).

Numerator: Number of persons with at least three medication visits or at least eight psychotherapy visits in a 12-week period.

Denominator: Number of persons with a new diagnosis of major depression.

45. Data requirements: Administrative data.

Importance of the indicator

46. While major depression can be effectively treated with anti-depressant medication or psychotherapy, many patients discontinue treatment prematurely, resulting in failure to achieve remission or to prevent relapse. Individuals with short-term severe mental illness, such as severe depression, generally respond well to treatment with drugs and psychological therapies, which can be provided in primary care with support from specialised services. Effectiveness of care improves the psychological health of the population overall (*e.g.* as measured by the UK National Psychiatric Morbidity Survey). It also reduces the potential expenditure, husbanding resources, by making it more likely that expensive in-patient care can be avoided and more generally, would reduce potential indirect costs of sick pay or productive time lost.

Scientific soundness of the indicator

47. Studies have found that patients continuing medication for four to nine months after remission are less likely to relapse than those who do not. Studies of psychotherapy have found remission to occur after an average of eight to 12 visits. A well-designed cross-sectional study found a strong association between patient continuation of anti-depressants and clinician-patient communication about treatment goals and side effects.

Operational issues

48. This indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors. A case mix adjustment model has been devised for use of this indicator adjusting for age, gender, history of Major Depressive Disorder, psychosis, substance abuse, lithium or anti-psychotic use, number of visits in primary care, anti-depressant used in greatest quantity and number of different anti-depressants (VHA/DOD, 2000).

Hospital Readmissions for Psychiatric Patients

Operational definition

49. **Source:** Advisory Network on Mental Health.[6]

Numerator: Of the total number of discharges from psychiatric inpatient care during a 12-month reporting period, the total number of readmissions to psychiatric inpatient care that occurred within i) 7 days and ii) 30 days.

Denominator: Total number of discharges from psychiatric inpatient care during a 12-month reporting period.

50. Data requirements: Administrative data.

Importance of the indicator

51. Hospital readmission rates are widely used as proxies for relapse or complications following an inpatient stay for psychiatric and substance use disorders. Since they indicate premature discharge or lack of coordination with outpatient care, high readmission rates have led some inpatient facilities to examine factors associated with readmissions, including patient characteristics, length of stay, discharge planning and linkages with outpatient care. Given the high cost of institutional care, reducing readmission rates can have a substantial effect on mental health spending.

Scientific soundness of the indicator

52. Studies of the association between readmissions rates and other indicators of quality have been mixed. Rosenheck *et al.* (1999) found small but significant correlations between 180-day readmission rates and other measures of outcome in a cohort of veterans with service-related posttraumatic stress disorder (PTSD), but had non-significant findings for 14 and 30-day rates. Lyons *et al.* (1997) found no association

6. Mental Health Evaluation and Community Consultation Unit (2001); British Columbia Ministry of Health (2001).

between psychiatric readmission rates (30 and 180-day) and clinical measures of outcome in a more diverse cohort of inpatients with psychiatric disorders.

Operational issues

53. This indicator is sensitive to differences by case mix, as patient readmission can vary by diagnosis and other factors.

54. Availability of interpretative data: Conformance results: (30-day)- 8.1-10.2%, state psychiatric hospitals nationwide, 1999-2001 (NASMHPD RI, 2002);.3-13.6%, state hospitals in 16 states (MHSIP, 1998); 13.1-15.3%, 172 VA medical centres, 1993-1997 (Leslie and Rosenheck, 2000); 200 private insurance plans nationwide (Leslie and Rosenheck, 2000); 11.9-25.1%, 3,755 adults, Medicaid (Huff, 2000); 38%, 370 adults (Moran *et al.*, 2000).

55. Data availability: While the indicator could be constructed from administrative data, a casemix adjustment model may require data from chart review and/or a clinical registry, depending on the detail of clinical information in the respective administrative data system.

Length of Treatment for Substance-Related Disorders

Operational definition

56. **Source:** IPMES/Workscopes (2000).
Numerator: Number of persons with treatment lasting at least 90 days.

Denominator: Number of persons initiating treatment for a substance-related disorder.

57. Data requirements: Administrative data.

Importance of the indicator

58. Many individuals with substance use disorders leave treatment prematurely, endangering the effectiveness of the intervention. This indicator examines the proportion of patients with a substance use disorder who receive treatment lasting at least 90 days, providing a utilisation-based indicator of continuity of care. While clinicians have limited influence in regard to patient engagement in treatment, strategies have been proposed to engage and motivate individuals at risk for early dropout.

Scientific soundness of the indicator

59. Although limited by confounding with other patient characteristics, research suggests that patients who leave prior to completing a prescribed treatment course have a greater likelihood of relapse and lower levels of functioning than those who complete the course. In particular, individuals who remain in treatment for 3 months or longer experience greater reductions in substance abuse than individuals who remain in treatment for shorter duration.

Operational issues

60. This indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors.

61. Availability of interpretative data: Standards: 25-75% (NY OASAS, 2000).

Use of Anti-Cholinergic Anti-Depressant Drugs Among Elderly Patients

Operational definition

62. **Source:** Wells K, Norquist G, Benjamin B, *et al*. (1994).

Numerator: Number of persons using an anti-cholinergic anti-depressant drug.

Denominator: Number of persons age 65+ prescribed anti-depressants.

63. Data requirements: Administrative data.

Importance of the indicator

64. Depression among the elderly is a major public health problem. It has a high prevalence, frequently occurs co-morbidly with medical illnesses, impedes quality of life, increases utilisation of health services and carries a high risk of suicide. While elderly individuals can be treated effectively with anti-depressant medications, they are at greater risk of adverse drug reactions due to the physiological changes associated with the aging process. In particular, anti-depressants with strong anti-cholinergic effects (*e.g.*, imipramine, amitriptyline and doxepin) are not recommended for ongoing use in the elderly as they can cause orthostatic hypotension, sedation and confusion. Use of these agents has been associated with high rates of adverse effects, including falls, among elderly patients. The health system has considerable influence over this indicator, as it is treatment-based. The appropriateness of prescribing behaviours by clinicians within the health system can be increased through education and training and the use of guidelines.

Scientific soundness of the indicator

65. The indicator has fair validity, having been tested via comparisons with the results of other methods or measures. It directly assesses the proportion of elderly individuals with a primary diagnosis of depression who are prescribed a sedating anti-depressant medication at discharge. There is fair research-based evidence for the validity of this indicator. Observational studies indicate that there is a relationship between this process measure and clinical outcomes, and this is supported by clinical opinion.

Operational issues

66. This indicator is sensitive to differences by case mix, as patient compliance varies by diagnosis and other factors. A case mix adjustment model has been devised for use of this indicator among elderly patients using age, gender, race, Medicaid status and illness severity at admission (Wells *et al.*, 1994).

67. Availability of interpretative data: Conformance results: 43.4%, 2,746 elderly patients in 297 acute-care general medical hospitals (Wells *et al.*, 1994).

Continuous Anti-Depressant Medication Treatment in Acute Phase

Operational definition

68. **Source:** DHHS, US National Quality Report (2003).

Numerator: Number of persons age 18 years and older who are diagnosed with a new episode of depression and treated with anti-depressant medication, with an 84-day (12 week acute treatment phase) treatment with anti-depressant medication.

Denominator: Number of persons age 18 years and older who are diagnosed with a new episode of depression and treated with anti-depressant medication.

69. Data requirements: Administrative data.

Importance of the indicator

70. Depressive disorders can impair personal, social and family functioning, decrease work productivity, increase the risk of suicide and are prevalent and disabling. The World Health Organisation has estimated that by the year 2020, major depression will be the second leading disorder in terms of global burden of disease. Studies have consistently demonstrated that compared with their non-depressed counterparts, individuals with depression experience impaired physical and role functioning, more work days lost and decreased productivity. They also make high use of health services, with hospitalisations accounting for a high proportion of costs. Available anti-depressant medications are effective in ameliorating these impacts and continuous anti-depressant medication treatment in the acute phase of an episode has been shown to augur well for continued compliance. The health system has considerable influence over this indicator of medication compliance, as it is treatment-based. The indicator provides an evaluation of length of treatment and serves as an important indicator of the health care system's success in promoting patient compliance with the establishment and maintenance of an effective medication regimen.

Scientific soundness of the indicator

71. Randomised clinical trials show anti-depressants to be efficacious for major depression; however, remission requires continuous treatment throughout a 12-week acute treatment phase. A substantial proportion of patients discontinue anti-depressants prematurely--in one study, 28% within the first four weeks.

Operational issues

72. Research suggests that clinicians can play an important role in influencing patient adherence to treatment by providing education, addressing concerns and evaluating and treating side effects. However, there are other factors that will influence patient compliance with continuity of anti-depressant medication treatment during the acute phase, as estimates of medication non-adherence range from 10% to 60%.

73. Availability of interpretative data: Conformance results: 18.8%, 4,052 adult patients (Melfi *et al.*, 1998); 22.7-43.6%, adults from 2 health plans (Kerr *et al.*, 2000); 58.8%, members of commercial health plans (NCQA, 1999).

Continuous Anti-Depressant Medication Treatment in Continuation Phase

Operational definition

74. **Source:** DHHS, US National Quality Report (2003).

Numerator: Number of persons age 18 years and older who are diagnosed with a new episode of depression and treated with anti-depressant medication with a 180-day treatment with anti-depressant medication.

Denominator: Number of persons age 18 years and older who are diagnosed with a new episode of depression and treated with anti-depressant medication

75. Data requirements: Administrative data.

Importance of the indicator

76. Depressive disorders can impair personal, social and family functioning, decrease work productivity, increase the risk of suicide and are prevalent and disabling. The World Health Organisation has estimated that by the year 2020, major depression will be the second leading disorder in terms of global burden of disease. Studies have consistently demonstrated that compared with their non-depressed counterparts, individuals with depression experience impaired physical and role functioning, more work days lost and decreased productivity. They also make high use of health services, with hospitalisations accounting for a high proportion of costs. Available anti-depressant medications are effective in ameliorating these impacts if patients remain compliant during continued treatment. The health system has considerable influence over this indicator of medication compliance, as it is treatment-based. The indicator provides an evaluation of length of treatment and serves as an important indicator of the health care system's success in promoting patient compliance with the establishment and maintenance of an effective medication regimen.

Scientific soundness of the indicator

77. The indicator has good face and content validity, in that it assesses the effectiveness of clinical management in achieving medication compliance and the likely effectiveness of the established dosage regimen by determining the percentage of adults who complete a period of continuation phase treatment adequate for defining a recovery according to the US Agency for Health care Research and Quality (AHRQ). Randomised clinical trials show anti-depressants to be efficacious for treating major depression and preventing relapse. However, anti-depressants must be continued for 4 to 9 months after initiation to minimise the likelihood of relapse.

Operational issues

78. Research suggests that clinicians can play an important role in influencing patient adherence to treatment by providing education, addressing concerns and evaluating and treating side effects. However, there are other factors that will influence patient compliance with continuity of anti-depressant medication treatment during the acute phase, as estimates of medication non-adherence range from 10% to 60%.

79. Availability of interpretative data: Conformance results: 43%, members of California health plans (CalPERS Health Plan, 2001); 42.2%, members of commercial health plans (NCQA, 1999).

Patient Outcomes

Mortality for Persons with Severe Psychiatric Disorders

Operational definition

80. **Source:** Advisory Network on Mental Health.[7]

Numerator: Standardised mortality rate for persons with specified severe psychiatric disorders.

Denominator: Standardised mortality rate for the total population.

81. Data requirements: Administrative data and mortality data.

Importance of the indicator

82. Individuals with schizophrenia and other severe mental illnesses have higher age and sex adjusted mortality rates than members of the general population. Studies in some countries have found medical conditions to be under-detected and under-treated among individuals with psychiatric conditions.

Scientific soundness of the indicator

83. Such relative survival or mortality rates, which are frequently used in cancer epidemiology studies, are a well-accepted and plausible measure for excess mortality in subgroups with certain diseases compared to the populations and provide an estimate for the impact on longevity for those diseases. As there is no a priori biological reason that patients with mental health disorders should die prematurely, a large survival difference could point to shortfalls in the overall medical care, not just the mental health care, for this vulnerable group of patients and provide a starting point for further investigation.

Operational issues

84. Availability of interpretative data: none.

7. Mental Health Evaluation and Community Consultation Unit (2001); British Columbia Ministry of Health (2001).

ANNEX 2: MEMBERS OF THE PANEL

Richard Hermann (Chair)

85. Dr. Richard C. Hermann is Associate Professor of Medicine and Psychiatry at Tufts-New England Medical Center, where he directs the Center for Quality Assessment and Improvement in Mental Health (www.cqaimh.org). He is also an adjunct faculty member in the Department of Health Policy and Management at the Harvard School of Public Health. He has been funded by the National Institute of Mental Health, the Agency for Health Care Research and Quality and the Substance Abuse and Mental Health Services Administration to conduct research on variation and appropriateness of clinical practices in mental health, cost-effectiveness, quality assessment and quality improvement. He has taught on mental health policy and economics, methods of quality measurement and quality management at the Harvard School of Public Health and the Kennedy School of Government. He developed and led a quality management program for a public sector health care system, and serves on quality measurement committees for the American Psychiatric Association, Foundation for Accountability, the National Committee for Quality Assurance and the Physician Consortium for Performance Improvement. Dr. Hermann received his M.D. from the University of Michigan and a M.S. in Epidemiology from the Harvard School of Public Health.

David Somekh

86. Dr. David Somekh is a forensic psychiatrist, psychoanalyst and experienced clinician in management who retired from the NHS two years ago to devote himself to a "portfolio" existence as a management consultant, expert witness and quality advisor. He was a member of AQH Council from 1988-2002 (Chair of the executive from 1995). AQH was the only UK organisation dedicated solely to Quality in health care and with a multi-professional membership. Pump primed by the Department of Health for three years, 1989-1991, it was registered as a Charity in 1993. In 2002 it merged with IQA, the Institute for Quality Assurance (a member of EOQ) to become the Health and Social Care group of IQA. Dr. Somekh served as the UK member of the Advisory Committee of ISQuA (International Society for Quality Assurance) from 1995-1997, and a member of the Management Committee of the National Centre for Clinical Audit (NCCA) from 1997-1999. As Chair of AQH he was a member of Council of the European Society for Quality in Health care (since its inception in 1998) and the executive member responsible for communications since 2000. He has been director of London ESQH office specialising in Patient Safety since Oct.2002.

Helena Silfverhielm

87. Dr Helena Silfverhielm is a medical adviser at the National Board of Health and Welfare in Sweden and head of the unit for medical quality development. She is a specialist in psychiatry and neurology as well as bachelor in law. She has led numerous national evaluations concerning the mental health care, its content and quality. She is one of the initiative takers of the quality indicator program in Mental Health in Sweden. She has also been active in various quality of care - projects within the frame of EU and WHO. She is a national counterpart for WHO-Europe on Mental Health.

Elliot Goldner

88. Dr. Elliot Goldner heads the Division of Mental Health Policy and Services at the University of British Columbia in the Faculty of Medicine. His activities are focused on the evaluation and improvement of quality in the Canadian healthcare system, with a focus on interventions to prevent and treat illness and disability in people with mental health problems and addictions. He has led the development of performance measurement activities in addictions and mental health services in British Columbia and was selected by the Federal/Provincial/Territorial Advisory Network on Mental Health and Health Canada to develop national resources for accountability and performance monitoring in mental health reform; the tools and materials that were developed are widely utilized across Canada. Dr. Goldner received an Honours B.Sc. degree in neurophysiology at the University of Toronto, an M.D. degree at the University of Calgary and an M.H.Sc. degree in epidemiology at the University of British Columbia where he also completed specialty training and full qualifications in Psychiatry. Dr. Goldner has received Mosby, Detwiller, and Canadian Psychiatric Association awards for his scholarly work and is an experienced clinician who has delivered direct healthcare to people with mental health and addictions problems for more than 20 years. He is an established educator in the Faculty of Medicine at the University of British Columbia, where he directs the Undergraduate Education Program in Psychiatry. Dr. Goldner is also the lead in a national training program in Addictions and Mental Health Policy and Services Research that has been funded by the Canadian Institutes of Health Research.

Gyles Glover

89. Dr. Gyles Glover is a physician, with postgraduate training in psychiatry and public health. His mainly focus of work is in routine information sources documenting mental health needs and care. Over the last ten years he has worked at Charing Cross and Westminster Medical School, the Institute of Psychiatry in London and the Department of Health for England. His work has focussed on three main areas: 1) indices of mental health care need in the population based on socio-demographic characteristics documented in the UK Census; 2) the development of a person based national data source documenting periods of care with specialist mental health services in England. This will be ongoing as from the start of April 2003. The full national returns will be available in the autumn, covering the period April to June. A preliminary test return was received from 74/82 of the services and is currently being evaluated; 3) the development of geographically based inventories of mental health services available to populations in England. An inventory of services for working age adults is just completing its third year of collection and an inventory of services for children and adolescents is just completing its first year. He has been an elected local politician in the London Borough in which he used to live, serving a term as chair of the social services committee. He is currently Professor of Public Mental Health at the University of Durham (England).

Jane Pirkis

90. Dr. Jane Pirkis is a Senior Research Fellow at the University of Melbourne's Centre for Health Program Evaluation, and has postgraduate qualifications in psychology and epidemiology. She has undertaken a range of projects concerning quality and outcomes of mental health services over the last 10 years. She was involved in the Mental Health Classification and Service Costs (MH-CASC) Project, which aimed to develop a case mix classification for the mental health sector. She later took data from the MH-CASC Project to conduct a study of quality and outcomes in mental health services across Australia. She conducted an outcomes-focussed evaluation of a project aimed at improving partnerships between the public and private mental health sectors in Victoria, as well as several studies that have examined specific outcomes of mental health care for particular at-risk groups (*e.g.*, suicidal individuals, people from culturally and linguistically diverse backgrounds, people with a dual disability). She was involved in the evaluation of the National Mental Health Strategy's first National Mental Health Plan and in the evaluation of Australia's National Youth Suicide Prevention Strategy. She is currently developing evaluation frameworks for Australia's Better Outcomes in Mental Health Care initiative and for Australia's National Depression Initiative, known as beyondblue. She is also currently involved in the formulation of Australia's third National Mental Health Plan. Jane spent 2001/2002 at the University of California, San Francisco as a Harkness Fellow in Health Care Policy.

Jan Mainz

91. Dr. Jan Mainz is a medical doctor and has a Ph.D in quality improvement. He is project manager of The National Indicator Project in Denmark and Associate Professor at the University of Aarhus, Denmark. He has been appointed as research fellow at Harvard School of Public Health, Department for Health Policy and management, Center for Quality of Care research and Education. He has worked as external medical officer at the WHO, Regional office for Europe. He has since 1999 been President of The Danish Society for Quality in Health Care and Board member of The European Society for Quality in Health Care. He is member of the Advisory Committee of The European Forum for Quality Improvement in Health Care. He is also member of the Editorial Board of The International Journal for Quality in Health Care.

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