Information Availability for Measuring and Comparing Quality of Mental Health Care Across OECD Countries

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OECD HEALTH TECHNICAL PAPERS

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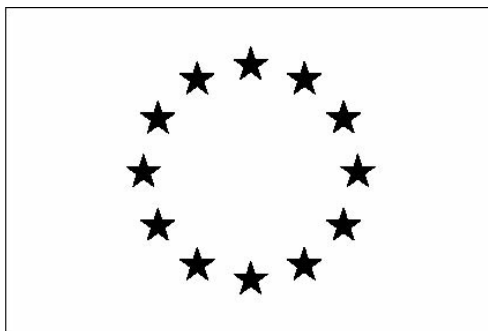
SUMMARY

This paper provides an overview of the present mental health care information systems in 18 OECD countries with the aim to explore the possibilities for measuring the quality of mental health care and identify potential indicators to be included in OECD's HCQI set.

A survey was conducted to support this analysis. The questionnaire sought to gather information on three areas of interest for the description of national information systems linked to mental health services:

- Types of mental health data available at system level

- Data sources available at national level

- Institutional arrangements framing ownership and use of the information system

An additional section was included to assess potential improvements in availability of the indicators recommended in OECD Health Technical Paper 17, updating the availability survey conducted in 2005.

The main conclusions extracted can be summarised as follows:

1. The availability of data across countries is generally very good for some types of data (structure and activity) and problematic for others. In order to measure process and outcome of mental health care, data on treatment and procedures, together with mental morbidity individual data and specific mortality data would be required. Examining the figures, there is a clear need to improve information systems across OECD countries in this respect. Nevertheless many of the countries where this type of information is not currently available are already undergoing some kind of reform along these lines, so the availability of these data can be expected to improve significantly in the short term. The information on organisational arrangements of care emerges as an adequate type of information to feed process indicators of effectiveness and safety of mental health care.

2. The data sources currently most widely available across countries are hospital administrative databases, national surveys and national registries. This should be taken into account in the selection of mental health care quality indicators for the first phase of data collection.

3. The expansion of the availability of the unique patient identifier expected in the next two years would mean a real step forward in terms of ability to track patients across settings and levels of care. Strict anonymisation protocols would be required to make full use of this tool while preserving confidentiality. However the introduction of a unique patient identifier does not seem to be evolving in parallel with the degree of development of administrative data sources at the primary care and community care levels. This can pose problems to build indicators assessing continuity of care and quality of prescription or treatment at this level. That is especially important because most of mental health care is provided out of the hospital across OECD countries.

4. The integration of information systems across different levels of care provision is low. Reinforcing this feature of information systems will be of paramount importance in order to pursue data to measure continuity of care

5.	The integration between mental health care information and physical health information is reasonably good at hospital level. This can allow for outcome indicators linking somatic and mental health.

6.	The decisions about the data items to be collected are often made centrally, aiming to support planning and management and in some cases reimbursement. Data collection is mainly bottom up through administrators and health care professionals. Therefore, the shaping of information systems to allow for quality assessment at the system level should be reasonably attainable. Common problems exist with data reporting and compliance; in most of the cases data recording is perceived as routine activity by the personnel involved, though it is often considered an additional burden. The use of this type of information for consumer's information or public accountability is infrequent across countries.

7.	Coding varies from country to country, but in general it is changing in the direction of ICD-10. This general trend should be taken into account in specifying the indicators to be collected, while contemplating the translation of the relevant codes into the other classifications in use across countries.

8.	The feasibility of measuring indicators is increasing for some of those indicators recommended in previous phases of the work in HCQI project. Hospital re-admissions for psychiatric patients (MH7), Mortality for persons with severe psychiatric disorders (MH12) and Length of treatment for substance-related disorders (MH8) should be considered as the "low hanging fruit" immediately available to start the data collection. Nevertheless, the final aim of this effort is to yield a balanced and comprehensive set of mental health care quality indicators. This set should populate the conceptual framework taking into account the type of data that is already collected in the national information systems or likely to be collected in the near future and the feasible innovations to be pursued. Populating this framework parsimoniously with a list of policy relevant, scientifically solid and feasible should be attainable in the near future in view of the trends already observed in information systems and the priority achieved by mental health in most national and international political agendas.

RESUMÉ

Ce document présente un panorama des systèmes d'information sur les soins de santé mentale en place dans 18 pays de l'OCDE avec pour objectif d'examiner les possibilités de mesure de la qualité de ces soins et d'identifier des indicateurs qui pourraient être inclus dans la batterie d'indicateurs de la qualité des soins de santé (HCQI) de l'Organisation.

Pour étayer cette analyse, une enquête a été effectuée. Le questionnaire s'efforçait de recueillir des informations sur trois domaines d'intérêt permettant de décrire les systèmes nationaux d'information liés aux services de santé mentale :

- types de données sur la santé mentale disponibles au niveau du système ;

- sources de données disponibles au niveau national ;

- modalités institutionnelles régissant la propriété et l'utilisation du système d'information.

Une section supplémentaire a été ajoutée pour évaluer les possibilités d'amélioration de la disponibilité des indicateurs recommandées dans le Rapport technique sur la santé n° 17 de l'OCDE, actualisant ainsi les résultats de l'enquête sur la disponibilité d'indicateurs menée en 2005.

Les principales conclusions tirées peuvent se résumer de la façon suivante :

1. La disponibilité de données dans les différents pays est généralement très bonne s'agissant de certains types de données (structure et activité) mais elle pose problème pour d'autres. Pour mesurer les processus et les résultats des soins de santé mentale, il faudrait disposer de données sur les traitements et procédures, ainsi que de données individuelles sur la morbidité mentale et de données spécifiques sur la mortalité. Quand on examine les chiffres, on constate qu'il est manifestement nécessaire d'améliorer sur ce plan les systèmes d'information des pays de l'OCDE. Néanmoins de nombreux pays dans lesquels ce type d'information n'est pas disponible actuellement ont déjà engagé des réformes en ce sens, sous une forme ou une autre On peut donc s'attendre à une amélioration significative de la disponibilité de ces données à bref délai. L'information sur les modalités d'organisation des soins se révèle être un type d'information idoine pour alimenter des indicateurs de processus (efficacité et sécurité) des soins de santé mentale.

2. Les sources de données les plus largement disponibles dans les pays sont les bases de données administratives des hôpitaux, les enquêtes nationales et les registres nationaux. Ce point doit être pris en compte dans le choix des indicateurs de la qualité de la santé mentale lors de la première phase de collecte de données.

3. La généralisation de l'identifiant unique pour les patients qui devrait intervenir dans les deux prochaine années marquerait un réel progrès en termes d'aptitude à suivre les patients d'une structure à une autre et d'un niveau de soins à un autre. Il faudrait mettre en place des protocoles rigoureux d'anonymation pour exploiter pleinement cet outil tout en préservant la confidentialité

des données. Toutefois, la mise en place de l'identifiant unique ne semble pas progresser au même rythme que le développement des sources de données administratives aux niveaux des soins primaires et des soins de proximité. Cela risque de poser des problèmes pour la construction d'indicateurs permettant d'évaluer la continuité des soins et la qualité de la prescription ou du traitement à ces niveaux. Cette question est particulièrement importante dans la mesure où l'essentiel des soins de santé mentale sont dispensés en dehors du milieu hospitalier dans les pays de l'OCDE.

4.   Les systèmes d'information ne sont guère intégrés aux différents niveaux de prestation des soins. Il est absolument indispensable de renforcer cette intégration si l'on veut pouvoir recueillir des données pour mesurer la continuité des soins.

5.   L'intégration de l'information sur les soins de santé mentale et de l'information sur la santé physique est relativement bonne au niveau de l'hôpital. Cela devrait permettre de construire des indicateurs de résultats rattachant soins somatiques et soins psychiatriques.

6.   Les décisions sur les données élémentaires à recueillir sont souvent prises au niveau de l'administration centrale dans le but de faciliter la planification et la gestion et, dans certains cas, le remboursement. La collecte de données est essentiellement une démarche ascendante, au travers d'administrateurs et de professionnels des soins de santé. Il devrait dont être relativement aisé de concevoir des systèmes d'information permettant d'évaluer la qualité au niveau du système. On rencontre partout les mêmes problèmes en ce qui concerne la transmission des données et le respect des procédures ; dans la plupart des cas, l'enregistrement des données est considéré comme une activité ordinaire par le personnel qui en a la charge bien qu'il soit aussi souvent considéré comme un alourdissement de la tâche. Quand on compare les pays, on constate que ce type d'information est rarement utilisé pour informer les consommateurs ou assurer la transparence des comptes.

7.   La codification varie d'un pays à l'autre mais, en général, elle est en train d'évoluer et s'oriente vers la CIM-10 Cette tendance générale doit être prise en compte en spécifiant les indicateurs à recueillir tout en envisageant la transposition des codes pertinents dans les autres classifications utilisées dans les différents pays.

8.   Les possibilités de mise au point d'indicateurs de mesure augmentent pour certains des indicateurs recommandés au cours des phases précédentes du projet HCQI. Les réadmissions à l'hôpital des patients psychiatriques (MH7), la mortalité des personnes souffrant de troubles psychiatriques sévères (MH12) et la longueur du traitement pour les troubles liés à une substance psychoactive (MH8) doivent être considérées comme des indicateurs « à portée de main », autrement dit immédiatement disponibles pour commencer la collecte de données. Pour autant, l'objectif ultime de cette activité est d'obtenir un ensemble complet et équilibré d'indicateurs de la qualité des soins de santé mentale. Cet ensemble doit enrichir le cadre conceptuel tenant compte du type de données déjà recueillies dans les systèmes d'information nationaux ou devant vraisemblablement l'être dans un proche avenir, ainsi que des innovations qu'il est possible d'envisager. Compte tenu de l'évolution déjà observée des systèmes d'information et du fait que la santé mentale occupe une place prioritaire dans l'esprit des dirigeants nationaux et internationaux compétents en la matière, on devrait parvenir dans un avenir proche à enrichir quelque peu ce cadre au moyen d'une liste d'indicateurs acceptables, solides sur le plan scientifique et pertinents du point de vue de l'action des pouvoirs publics.

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INTRODUCTION

1.   The prevention and management of ill mental health has been gaining notoriety on the political agenda over the past two decades, becoming a challenging priority for health systems across OECD countries. Mental disorders are recognised as a major source of disease burden in the world. In the seminal Global Burden of Disease study conducted by the World Health Organisation and the World Bank (Murray and Lopez, 1996), mental illness was found to be second only to cardiovascular disease in terms of total burden of disability and premature death. Four of the top ten most burdensome individual conditions in the study were mental illnesses (World Health Organization 2003). The World health report 2001 was entirely devoted to mental health (WHO 2001). Focusing on the traditional neglecting of mental health, the report argued its centrality to the overall well-being of individuals, societies and countries; thus, it advocated policies ensuring that stigma and discrimination are broken down and that effective prevention and treatment are put in place.

2.   More recently, a review of 27 studies across European countries estimates that about 27% (equals around 83 million) of the adult European Union population, 18–65 of age, is or has been affected by at least one mental disorder in the past 12 months (Wittchen HU, Jacobi F 2005). The estimations reported at national level are as cumbersome as the ones in international reports. According to the Substance Abuse and Mental Health Services Administration 13% of the USA population received mental health treatment in 2003 (SAMHSA 2004) –the unmet need is not accounted for. One in five Australians will experience mental illness at some stage in their lives and over 1 million people have a psychiatric disabling condition (Australian Institute of Health and Welfare 2007).

3.   The last twenty years have also witnessed dramatic changes in the approach to the delivery of mental health services. Following the des-institutionalisation movement, promoted by the "anti-psychiatric" school back in the 1970s, the nature and shape of what nowadays is considered mental health services and mental care in particular have radically changed with the closing up of big psychiatric *asylums* and the shift to community-based care. As a matter of fact, assessing the sufficiency and suitability of mental health care services has become one of the hardest endeavours in providing a basis for evidence-based policy across OECD countries. In most of the member countries the transfer from institutional to community-based mental health and addiction services has brought to light the gaps and problems with health information for that sector. It has added a degree of complexity to service delivery and evaluation of services, and it has underscored the need for reliable, current health and health care information.

4.   There are several specific hurdles for the development of mental health care information systems as compared to other areas of health care. Most of these hurdles seem to be inherent to the nature of the institutional arrangements, the clinical practice and the diseases themselves. The USA Institute of Medicine issued last year the guidelines for improvement of quality of mental health care at the system level (IoM 2007). The report applies the quality improvement framework contained in the predecessor "*Crossing the quality chasm: A new Health system for 21st century* (IoM 2001) to the field of mental health and addiction services. The document provides an excellent analysis, identifying relevant features of current mental health care services as compared with other fields of care (see box 1 for a summary). Weaker standardisation of diagnostic and therapeutic practices are acknowledged as relevant issues partly explaining the comparative shortage of systematic information and well established coding and reporting practices. Confidentiality is also pointed out as a hurdle; mental health conditions are more prone to raise

privacy and discrimination issues and thus, protection is often more strongly articulated than for other areas of care.

Box 1. Distinctive characteristics of mental health care

1. Greater degree of separation, both structurally and functionally, from other components of the health care system, sometimes resulting in parallel systems of care delivery managed by separate administrations or specialized units inside the managerial instances.

2. Diagnostic methods Diagnosis relies more on results of interview tools and the patient history and involves more professional interpretation, with resulting greater variations in diagnosis.

3. Treatments

- Drugs and psychotherapy, including behavioural and psychosocial therapy.
- Safety concerns regarding unsafe care and widespread treatments for which there's evidence of being harmful, medication errors, both in out and inpatient settings, derived from long term combinations of psychotropic drugs and the use of seclusion and restraint.

4. Patient role in the treatment

- Residual stigma persists, making resistance to actively/explicitly seek care for mental symptoms a more frequent issue.
- Decision making ability often is not anticipated or supported and often is challenged.
- Coercion is common.
- Peer support/ mutual support groups play a strong role as providers of treatment.

5. Mode of clinician practice

- Patient is generally expected to receive care from a specialist rather than from a primary care provider, in consequence, primary care provider is often not well supported.
- Psychiatrists more often practice in solo or two clinicians practices.

6. Quality measurement

- Clinical assessment and treatment practices (especially psychosocial interventions) have not been standardized and classified for inclusion in the administrative datasets widely used to analyse variations in health care and other quality-related issues in general health care.
- Less consensus exists on core measures across the public and private sectors.
- Fewer established clinical databases exist.
- Quality measurement and improvement mechanisms are less well developed.
- Leadership tends to derive predominantly from the public sector since the private one tends to be much more fragmented in small units/practice.

7. Information sharing and technology

- The rules of privacy and confidentiality applying for general health care are hardened by the addition of laws and regulations restricting the share of information regarding mental conditions.
- IT is generally less well developed and less commonly used for clinical care support.

8. Workforce A more diverse workforce is licensed to diagnose and treat, including psychologist, psychiatrists, other physicians, social workers, psychiatric nurses, marriage and family therapists, addiction therapists, occupational therapist and a variety of counsellors with different education and certification requirements inside and across countries.

9. Market place and insurance coverage

- Even in a more market oriented system as that of the United States, state and local governments dominate purchasing for mental health care.
- Private insurance generally provides less coverage. Co-payments are higher and fewer visits/days of care and therapies are covered.
- Insurance coverage is often purchased separately ("carved out") from general health care.
- The share of expenses paid out of pocket is bigger than for other types of health care.

Source: Modified from Institute of Medicine Improving the quality of health care and substance-use conditions (2007)

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5.   Numerous national and international initiatives have been reporting the need for different types of information as a basis for action. In Europe this need has been emphasised in the Public Health Policy, the Health Monitoring Programme and the Public Health Programme (2003–2008) of the European Commission[1]. The Canadian institute of health information produced in 2000 a report on the Consultation on National Priority Information Needs for Mental Health and Addiction Services. The purpose of the Consultation was to get the input of experts in the fields of mental health and addiction services on their priority information needs for regional management of services. Experts identified 8 priority areas of information (CIHI 2000):

- Outcomes of services
- Continuity of services
- Utilization of services
- Processes of service delivery
- Appropriateness of resource intensity
- Characteristics of clients and catchment population
- Benchmarks
- Prevalence and incidence of illness and degree of need for services

6.   In Australia the process started earlier. Under the National Mental Health Strategy, nationally agreed measures of performance were developed in 1992 and are reported in the annual National Mental Health Report. The twelve priority areas defined are:

- Consumer rights
- The relationship between mental health services and the general health sector
- Linking mental health services with other sectors
- Service mix
- Promotion and prevention
- Primary care services
- Carers and non-governmental organisations
- Mental health workforce
- Legislation
- Research and evaluation
- Standards
- Monitoring and accountability

7.   While there are already a number of international initiatives, including OECD Health data, striving to compile information on the population mental health status or the quantity and nature of mental health resources available across countries, there is still an outstanding gap in measuring the quality of the services provided. It probably reflects the scarcity of consolidated national efforts along these lines.

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[1]   Decision No 1786/2002/EC of the European Parliament and of the Council of 23 September 2002 adopting a programme of Community action in the field of public health (2003-2008) – *Commission Statements Official Journal* L 271, 09/10/2002, P0001 – 0012

Almost every OECD country has recently undergone or is currently in the middle of a reform of mental health services. However, not always enough attention has been given to the development of appropriate information systems to monitor the subsequent changes on effectiveness and safety for the patients. At this point the opportunities for sharing knowledge through international comparisons and extracting lessons on how to measure and enhance quality of mental health care are enormous. In a field where innovation and experimentation is so acute, understanding others' experiences and facilitating benchmarking can bring about evidence-informed policy making as opposed to a *learning-by-doing* approach.

The work of OECD HCQI project in the field of mental health

8.   Conscious of these opportunities, in 2004 the OECD Health Care Quality Indicators project Expert Group presented the Secretariat with the mandate to pursue mental health care as one of the priority areas in developing quality of care indicators. This mandate was confirmed by the Health Committee's predecessor, the Ad-hoc Group on Health. The first step taken to respond to this request was to convey a panel of international experts to produce recommendations on indicators suitable to compare quality of mental health care at the system level across countries. The aim of the panel was the review of existing indicators in member countries. The methods applied to produce the shortlist of potential indicators as well as the sources reviewed are extensively described in the OECD Health Technical paper 17: *Selecting indicators for the quality of mental health care at the system level in OECD countries* (OECD 2004). The resulting list of indicators is displayed in table 1. A subsequent availability survey was conducted across participating countries in 2005 (Refer to table 1 for each indicator's availability status at the time).

9.   This exercise had the virtue of compiling the "state of the art" across OECD and to point out the specific requirements to address quality assessment in mental health care. While the panel grouped the measures into four categories (*Continuity of care, Coordination of care, Treatment and Patient outcomes)* no explicit attempt was made to agree on definitions and boundaries for mental health care. The list represents a first attempt at constructing a set of indicators as for the best that could be identified in 2004, but, as the report itself stated, they were not considered final.

10.   The limited data availability, combined with some scepticism about the long-term utility and feasibility of the recommended indicators, led to a consensus among the HCQI Expert Group that further developmental work would be necessary to establish a quality measurement system for mental health care. This led to the creation of the HCQI Mental Health Experts Subgroup in April 2006 with the participation of 18 countries[2].

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2   The 18 countries fully participating in the HCQI Mental Health Expert Subgroup in 2006 and 2007 were Australia, Canada, Denmark, Finland, France, Iceland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Slovak Republic, South Korea, Spain, Sweden, Switzerland and United States of America. The Czech Republic, Hungary, Poland and United Kingdom adopted an observer status during 2007. Germany and Turkey have joined this subgroup in 2008.

Table 1. Set of indicators recommended in OECD technical paper 17 (2004) and their reported 2005 availability

Area	Indicator Name	2005 Availability survey results (total countries reporting = 14)		
		Currently available (# countries)	Could be constructed (# countries)	Total availability across countries
Continuity of Care	Timely ambulatory follow-up after mental health hospitalization	0	4	4
	Continuity of visits after hospitalisation for dual psychiatric/ substance related conditions	0	2	2
	Racial/ethnic disparities in mental health follow-up rates	0	2	2
	Continuity of visits after mental health-related hospitalisation	0	4	4
Coordination of Care	Case management for severe psychiatric disorders	1	1	2
Treatment	Visits during acute phase treatment of depression	1	1	2
	Hospital readmissions for psychiatric patients	1	8	9
	Length of treatment for substance-related disorders	1	3	4
	Use of anti-cholinergic anti-depressant drugs among elderly patients	0	8	8
	Continuous anti-depressant medication treatment in acute phase	0	2	2
	Continuous anti-depressant medication treatment in continuation phase	0	2	2
Patient Outcomes	Mortality for persons with severe psychiatric disorders	3	6	9

Source: OECD Health Technical paper 17. Selecting indicators for the quality of mental health care at the system level in OECD countries (OECD 2004)

11.   The Expert Subgroup's initial assessment of the situation led to the conclusion that the lack of a common definition for what constitutes the mental health care system across the participating countries was a relevant issue in trying to go about measuring quality of care. Not only do terms and concepts differ, but often actual care settings and patterns of diagnoses differ widely across countries. A second matter of concern was identified: the deficient understanding of the components of information systems containing data linked to mental health care and the nature of these data across countries; this deficiency was recognised as a hamper to move forward in designing a viable set of indicators. Consequently, the Expert Subgroup agreed to take a step back, delaying the actual data collection on indicators to gather further information on both the structure of mental health care related information systems and mental health care services. This approach entailed the adoption of a medium-long term perspective focused on the improvement of data availability for quality of mental health care across OECD countries, building on existing national sources of information to allow for international comparisons and future benchmarking. The discussions during the second meeting of the Expert Subgroup in September 2007 yielded general guidelines for this strategy. The main features are as follows:

1.   **An approach assessing all services for a given disease is clearly preferable.** This approach is congruent with the consideration of severe mental health disorders as chronic conditions accompanying individuals from the onset throughout their life course. For individuals with a

chronic condition, the quality of the health system consists mainly in the ability to support them in staying healthy (including prevention and early detection) and living with the disease (keeping quality of life and avoiding deterioration). Therefore, the most adequate approach to quality assessment should allow the analysis of different elements of the system interacting in providing this support for patients with a certain condition.

2. **The primary care level should be explicitly included in the range of services to be assessed.** Primary care is often the first contact point, critical for early detection of patients with a mental condition. Mental health services are often separate, both structurally and functionally, from the other components of the health care system. This gives rise to the obvious problem of "stigma" that may deter individuals from using distinctive clearly labelled services, often subject to a gatekeeper referral mechanism; this separation fosters obstacles to access and discontinuity of care. Therefore primary care plays a key role in the access to and continuity of mental care. In addition, many mental disorders are chronic diseases that expand through the individual's life, coexisting with other somatic conditions. However, general practitioners are often not as adequately trained or well supported to deal with this type of disorders (or to detect persons at risk), as they are when facing somatic clinical problems; because mental health issues are often regarded as specialist's competences rather than part of general health care routine, patients are generally expected to receive specialised care when presenting mental health symptoms. The result of such limited awareness and skills at the first level of care is failure to treat and prevent, even for individuals with regular access to general health care (Kovess-Masfety et al 2007). The main consequence for the assessment of quality of mental health care is the need to account for:

    − The skills present in primary care to deal with mental health issues and the awareness to detect early and facilitate access to specialised mental care

    − The levels of coordination and continuity of care, not only across the different levels of mental health services but with the other components of health care, such as primary care.

3. **Process indicators assessing coordination and continuity of care, and analysing patient pathways and transitions through the system should be given preference.** Most process indicators on the quality of health care in somatic medicine relate to the compliance with professionally agreed standards on prevention, diagnosis or treatment. However, several factors should be kept in mind when identifying indicators on the quality of mental health care. As outlined before, the nature of mental health care differs from somatic care on several aspects. First, both diagnostic and therapeutic approaches in mental health care are still more qualitative in nature than for other type of conditions, although over the past decade the biomedical approach has become more dominant in mental health care. Diagnosis relies to a large extent on results of interview tools and patient history, involving substantial professional interpretation and some controversy regarding the variability in diagnosis detected still exists (Kramer et al 2000) (McClellan 2005). This makes indicator building more challenging than for other fields where "hard" measures such as laboratory test or images are more frequently used in the diagnostic procedures. Regarding the treatment, drugs and psychotherapy (including behavioural and psychosocial therapy) are main approaches. This latter kind of therapy, again, relies heavily on exchange of information between the patient and the therapist. Though the body of practice guidelines in mental health care is expanding[3], evidence based consensus about the appropriate

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[3] The Guidelines International Network (G-I-N) is an international not-for-profit association of organisations and individuals involved in the development and use of clinical practice guidelines. G-I-N seeks to improve the quality of health care by promoting systematic development of clinical practice guidelines and their application into practice, through supporting international collaboration. The Network has the world's largest collectionGuideline Library and is regularly updated with the latest information about guidelines of the G-I-N

combination of drugs and the adequate mix of drugs and psychotherapies (including behavioural and psychosocial interventions) are still less present than in somatic medicine; thus, the standards of practice rely heavily on expert consensus. Although the amount of practice guidelines in the mental health care field has increased substantially over the past decades, the extent of agreed standards is less. To capture the quality of the mental health care process, measurements rely more on the organizational dimensions of the health care delivery process, such as timeliness, continuity of care and inter-professional communication. The notion that many mental health care diseases are of a chronic nature enforces the focus on organisational aspects. Therefore, exploring the avenue of process indicators linked to the organisational arrangements in place seems promising; this type of information complemented with outcome or intermediate outcome indicators, such as unplanned readmissions, may provide understanding of the effectiveness and safety of the service offered. Furthermore, it will provide a way out in overcoming the shortage of standardised individual level data on procedures and interventions.

4. **To facilitate the measurement of quality over the various service delivery settings, further harmonization of terminology and linkages between data-systems seem warranted.** Due to the variety of professionals and service types involved in mental health care, the conventional division of service types (hospital, ambulatory, nursing home and home care) may not hold to describe mental health care. It will be useful to take this into account, especially in defining process indicators.

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membership. As at July 2007 more than 4,400 documents were available on their site. 51 of them were related to mental health care, all of them about mood disorders. Turning to the sources of evidence informing clinical guidelines, the Cochrane library provides the most comprehensive international database of systematic reviews. Cochrane Reviews are based on the best available information about healthcare interventions. They explore the evidence for and against the effectiveness and appropriateness of treatments (medications, surgery, education, etc) in specific circumstances. The Cochrane Library is published four times a year. As consulted in July 2007, 435 reviews related to mental health care were available; some of them completed some others on their way. Of those, 168 corresponded to Depression, Anxiety and Neurosis Group, 72 to Developmental, Psychosocial and Learning Problems, 61 to Drugs and Alcohol Group and 134 to Schizophrenia Group. These figures show the amount of interest in producing evidence in this field; unfortunately most of the reviews yield the result that more evidence is required to draw a conclusion about the effectiveness of the intervention.

12.   The first step of the incremental strategy chosen by the Mental Health Expert Subgroup was the development of a survey to collect information on mental health information systems across eighteen OECD countries. The underlying notion was that while the development of specific mental health information systems might vary wildly across countries, there may be a wealth of data usable to assess mental health services disperse in different elements of the general health information system. The survey was conducted during the spring and summer of 2007. Eighteen countries committed themselves to completing the survey. They include:

– Australia	– Netherlands
– Canada	– Norway
– Denmark	– Portugal
– Finland	– Slovak Republic
– France	– South Korea
– Iceland	– Spain
– Italy	– Sweden
– Japan	– Switzerland
– New Zealand	– United States of America

13.   A questionnaire was built to gather information on three areas of interest for the description of national information systems linked to mental health services[4]:

- Types of mental health data available at system level

- Data sources available at national level

- Institutional arrangements framing ownership and use of the information system

14.   An additional section was included to assess potential improvements in availability of the indicators recommended in OECD Health Technical Paper 17, updating the availability survey conducted in 2005 (see table 1).

15.   The questionnaire was addressed to the members of the HCQI Mental Health Expert Subgroup who sought the information needed to complete it for their country.

16.   This paper presents the results of that survey in the three following sections; reporting on types of data and the existing information sources (Section 1 and Annex 1), the various institutional arrangements across countries including a country by country description of the mental health information system structure (Section 2 and Annex 2), and on the current data availability for the existing set of indicators (Section 3). The consequences extracted from the analysis are outlined in the final conclusions section. The aim is to provide insight on the existing information bases for the measurement of mental health care quality and the potential for indicators to be added to the HCQI set.

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[4]   Questionnaire is available from the Secretariat upon request

SECTION 1 – TYPES OF DATA AND INFORMATION SOURCES

17.   The different components of a national information system comprise a variety of data sources differing substantially in their structure, the nature of the data recorded and the purpose they were conceived to serve. They have been shaped to serve monitoring functions within each country and often the purpose of such monitoring is not primarily performance comparison or quality measurement, but rather to support administrative activities such as budget distribution or system management.

18.   The dimensions of the quality of mental health services that can be measured and the type of indicators that can be built will depend heavily upon the nature of the information regularly collected, the way the data sources available are shaped and the extent to which they contain mental health related components. Box 2 outlines the weaknesses and strengths that can generally be attributed to each data source. Following this reasoning the survey sought information on the following items:

1.1. Types of mental health data available

1.2. Available mental health data sources and their main use

1.3. Coding systems

Box 2. Sources of information available to assess quality of care across countries		
Source	**Weaknesses**	**Strengths**
1. Administrative data *Admission/discharge records* *Minimum set of data* *Insurance-reimbursement* *DRGs accounting* *Prescription*	Limited/no information on processes of care and measures of severity Limited/no information on timing (co-morbidities vs. onset or adverse events) Heterogeneous severity within some ICD codes Accuracy depends on documentation and coding Data are used for other purposes, subject to gaming Variation in how administrative data are collected and used, in particular DRG-based payment versus global budgeting versus service-based payment Time lag may limit usefulness Poor development outside the hospital setting	Data availability improving Coding systems (international classifications of diseases) and practices are improving Large data sets that optimize precision Comprehensiveness (all providers, all payers) avoids sampling/selection bias Data are used for other purposes, and thus, subject to auditing and monitoring
2. National surveys *Health status* *Health services use* *Pharmaceutical consumption*	Self-reported (recall bias, lack of accuracy due to common lay approach of the persons interviewed) Inability to identify and follow up subjects	Population based rather than patient based information, including individuals that health information systems cannot account for Can provide a basis for access and needs assessments
3. National registries *Severe mental diseases* *Suicide* *Chronic diseases* *Adverse events* *Certain procedures* *Mortality*	When not mandatory, some eventual selection bias, that may deem them not representative Resource intensive to register the detailed specific features Not always linkable to other sources of information	Precise specific information
4. Medical records	Data retrieval is work intensive and thus, expensive, even from electronic records Difficult to sustain over time	Complete clinical information and good chronology

1.1. Types of mental health data available

19.   Respondents were asked to indicate the nature of the mental health information available in their country on a national basis. The categories listed cover the suite of potentially relevant pieces of information in assessing quality of care. The range of data sources from which these types of data can be retrieved varies from country to country (data sources availability and their use are described in the next

subsection). In an attempt to cover new developments, the information requested included types of data currently in use, and data that would be ready for use within the following twenty-four months. Table 1 presents a summary of the reported types of mental health information available across countries, ranked by availability. While availability of data across countries is very good for certain types, it becomes problematic for others. Not surprisingly, structure data (number of beds or facilities available) along with activity data (service utilisation and number of treatment and procedures) are the most widely present at national level. Staff composition is also generally available across countries. Morbidity information at the aggregate level (national prevalence of mental diseases or mental well-being rates) is present in most of the countries too. However, another type of information such as individual mental morbidity or treatment and procedure data -in principle more suitable for quality of care assessment- seems to be scarcer. Linked or not to individual physical morbidity, these data can be found at the national level in only around half of the countries. Mortality among persons with severe mental disorders will also fall within this last category.

Table 2. Summary of the availability of various types of data

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	New Zealand	Netherlands	Norway	Portugal	Slovakia	South Korea	Spain	Sweden	Switzerland	USA	Yes
Structure data	▧	▧		▧	▧	▧	▧	▧		▧	▧	▧	▧	▧	▧	▧	▧	▧	16
Services utilization data	▧	▧		▧	▧	▧	▧	▧	▧	▧	▧	▧	▧	▧	▧	▧	▧		16
Staff data	▧	▧	▧		▧	▧		▧	▧	▧	▧	▧	▧	▧	▧	▧	▧		15
Mental morbidity aggregate data	▧	▧	▧	▧		▧	▧	▧	▧	▧	▧	▧	▧	▧		▧	▧	▧	15
Treatment and procedures data	▧	▧	▧	▧	▧		▧		▧	▧	▧	▧	▧	▧		▧	▧		14
Mental morbidity individual data	▧	▧				▧			▧				▧			▧		▧	8
Mortality among persons with severe mental disorders		▧	▧	▧		▧							▧	▧		▧			7
Mental and physical morbidity individual data (linked or feasible link)		▧	▧						▧	▧			▧			▧			6

1.2. Available mental health data sources and their main use

20.   Regarding the sources of data available, respondents were asked about the current data sources in their country containing mental health items. "Current" in this context refers to data that was either available then or that *would* be available within twenty-four months. Information on the main uses of these data sources was also collected. Table 3 summarises and ranks the sources available and their reported use across countries. Administrative hospital data with elements of mental health information is almost universally present, followed by national surveys on morbidity, health care utilisation, and pharmaceutical consumption. National registries or statistics about severe mental disease/suicide are also widely present across countries. Lower in the ranking score specific mental health data information systems and patient safety/adverse events linked information systems. The lack of availability of administrative sources outside hospital is remarkable, primary care administrative data and community centres administrative data rank at the bottom. Since a significant proportion of mental health care is provided in these settings this represents a major challenge for mental health services monitoring in general and quality assessment in particular. Other sources of information such as hospital pharmacy registries, monitoring/quality improving linked

information systems, and national surveys on continuity of care are also usable at national level in few countries.

Table 3. Available data sources and types of use per number of countries

	Currently Available	Available within next 24 months	TOTAL	Quality/ clinical guidelines monitoring	Benchmarking	Accounting	Reimbursement	Overall staff performance measurement	Individual staff performance measurement	Output measurement
Administrative hospital data	17	1	18	9	8	16	10	4	1	10
National surveys on health care utilization	16	1	17	5	6	3	3	1	0	9
National surveys on morbidity	16	1	17	3	4	4	2	1	0	8
National surveys on drug consumption	15	2	17	6	7	4	2	2	0	9
National registries/statistics (severe mental disease/suicide)	13	1	14	5	8	3	4	2	0	10
Specific mental health data information systems	8	3	11	5	6	1	0	1	0	8
Patient safety/adverse events linked information systems	9	1	10	5	3	0	0	4	2	4
Administrative primary care data	9	1	10	3	3	6	6	1	0	4
Administrative community centers data	8	1	9	4	5	7	4	4	1	6
Hospital pharmacy registries	9	0	9	5	5	6	3	2	0	5
Monitoring/quality improving linked information systems	6	2	8	2	4	0	0	2	1	4
National surveys on continuity of care	5	1	6	2	4	1	0	1	0	4

21.   The sources predominantly used for clinical quality monitoring and benchmarking across countries are hospital pharmacy registries (60% and 50 % respectively among the countries having this source available) and hospital administrative databases (60% and 40%). The other sources regularly used for these two purposes are Patient safety/adverse events linked information systems and Monitoring/quality improving linked information systems (also around 50% of countries that have them in place).

22.   Tables 4 to 11 summarise the use and country specific availability of each of the sources of data (a more detailed account can be found in the Annex 1).

23.   **Administrative databases** (Table 4) are predominantly used for accounting purposes in whatever setting (hospital, primary care or community centres). In many cases they are also used for output measurement, but quality monitoring use seems to be more predominant in the hospital environment and remarkably low in primary care settings, where reimbursement takes precedence. As mentioned before, the

differences between hospital and out of hospital settings in availability of this type of data sources is striking.

Table 4. Main types of use of administrative databases in different settings

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total	% countries applying this use
Hospital administrative databases (18 countries)																				
Accounting																			16	89
Output measurement																			10	56
Quality/ clinical guidelines monitoring																			10	56
Reimbursement																			9	50
Benchmarking																			8	44
Overall staff performance measurement																			4	22
Individual staff performance measurement																			1	6
Primary care administrative databases (10 countries)																				
Accounting																			6	67
Reimbursement																			6	67
Output measurement																			4	44
Quality/ clinical guidelines monitoring																			3	33
Benchmarking																			3	33
Overall staff performance measurement																			1	11
Individual staff performance measurement																			0	0
No specific use																			2	
Community Centers administrative databases (9 countries)																				
Accounting																			7	88
Output measurement																			6	75
Benchmarking																			5	63
Quality/ clinical guidelines monitoring																			4	50
Overall staff performance measurement																			4	50
Reimbursement																			4	50
Individual staff performance measurement																			1	13
No specific use																			1	

24.	**National surveys** on morbidity, health care utilisation and pharmaceutical consumption are the next most widespread source of data incorporating mental health related components (table 5). All countries count at least with one of this type of sources or will have it available in the next 24 months. However, surveys on continuity of care seem to be rarer with only 6 countries declaring them available.

25.	The range of uses attributed to data coming from national survey sources varies widely across countries. Outcome measurement is the main purpose for which compiled data are used; quality/clinical guidelines monitoring and benchmarking feature also high in the ranking. That seems to be clearly the

main use for the surveys on continuity of care implemented just in four countries (Canada, Denmark, the Netherlands and Portugal).

Table 5. Availability of National surveys and main uses of the data

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total	%countries applying this use
National Surveys on Morbidity (17 countries)																				
Outcome measurement	▪	▪	▪						▪		▪	▪					▪	▪	8	47
Accounting		▪	▪										▪		▪				4	24
Benchmarking							▪	▪					▪		▪				4	24
Quality/ clinical guidelines monitoring			▪										▪						3	18
Reimbursement													▪		▪				2	12
Overall staff performance measurement			▪																1	6
Non specified use				▪			▪		▪		▪				▪				5	
National surveys on health care utilisation (17 countries)																				
Outcome measurement		▪	▪						▪		▪					▪	▪	▪	9	53
Quality/ clinical guidelines monitoring			▪		▪							▪			▪				5	29
Benchmarking			▪								▪		▪		▪				5	29
Accounting			▪												▪		▪		3	18
Reimbursement			▪									▪							2	12
Overall staff performance measurement			▪																1	6
Non specified use	▪				▪				▪					▪					4	
National Surveys on pharmaceutical consumption (17 countries)																				
Outcome measurement			▪						▪	▪	▪				▪	▪	▪	▪	9	53
Quality/ clinical guidelines monitoring			▪						▪			▪			▪	▪	▪		7	41
Benchmarking		▪	▪						▪			▪			▪		▪		6	25
Accounting			▪						▪						▪		▪		4	24
Reimbursement			▪														▪		2	12
Overall staff performance measurement			▪														▪		2	12
Non specified use				▪					▪										3	
National surveys on continuity of care (6 countries)																				
Outcome measurement		▪	▪						▪			▪							4	67
Benchmarking		▪	▪						▪			▪							4	67
Quality/ clinical guidelines monitoring		▪	▪																2	33
Accounting			▪																1	17
Overall staff performance measurement			▪																1	17
Non specified use											▪		▪			▪			3	

26.   Other items of the national health information system were analysed. Components such as patient safety and adverse events or quality improvement databases and hospital pharmacy registries were examined to find out whether they include mental health data and, in this case, what are they primarily used for. Table 6 refers to the first two items and table 7 outlines the availability and use of hospital pharmacy registries.

Table 6. Availability and use of databases linked to Patient safety/adverse events and to quality monitoring/improving

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Databases linked to Patient safety/adverse events (10 countries)																			
Quality/ clinical guidelines monitoring		■	■	■		■										■			5
Overall staff performance measurement		■	■													■			4
Outcome measurement		■	■								■					■			4
Benchmarking		■	■													■			3
Individual staff performance measurement		■														■			2
Accounting																			0
Reimbursement																			0
No specific use	■					■							■		■				4
Databases linked to quality monitoring/improving (8 countries)																			
Output measurement			■						■		■							■	4
Benchmarking			■						■				■					■	4
Quality/ clinical guidelines monitoring			■										■						2
Over staff performance measurement			■										■						2
Individual staff performance measurement													■						1
Accounting																			0
Reimbursement																			0
No specific use				■						■							■		3

Table 7. Availability and use of hospital pharmacy registries (9 countries)

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Accounting			■	■		■						■	■						6
Quality/ clinical guidelines monitoring			■	■		■						■				■			5
Output measurement			■								■	■				■			5
Benchmarking			■	■		■						■				■			5
Reimbursement			■									■				■			3
Over staff performance measurement			■									■							2
Individual staff performance measurement																			0
No specified use									■						■				1

27.   In addition to the general sources of health information containing some components of mental health or mental health services data, many countries work with specialised data sources. **National registries for severe mental diseases or for suicide** are available in 14 countries (refer to table 8). The principal use of these data sources is in outcome measurement, followed by quality assessment and benchmarking activities.

Table 8. National registry statistics severe mental disease/suicide (14 countries)

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total	countries applying this use
Outcome measurement		■	■			■			■		■				■	■		■	10	71 %
Benchmarking		■	■		■		■		■						■	■			8	57 %
Quality/ clinical guidelines monitoring			■	■		■			■				■						6	43 %
Reimbursement			■			■									■				4	29 %
Accounting			■									■							3	21 %
Over staff performance measurement			■						■										2	14 %
No specified use	■									■									2	

28.   Similarly, a number of countries have developed **specific mental health information systems** collecting and reporting just mental health services related items; often these systems are quite independent from the general health services information system, linked to a concrete national strategy and conceived to monitor the achievement of the intended goals; thus they tend to be more focused on quality linked purposes such as outcome/output measurement, benchmarking and clinical guidelines monitoring. Table 9 shows the corresponding figures for the 8 countries that already have a system of the sort in place and the additional 3 (France, Italy and Portugal) that were planning to have it available in the following 24 months.

Table 9. Specific mental health data information systems (11 countries)

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total	countries applying the use
Outcome measurement	■	■	■							■	■							■	8	73%
Benchmarking	■		■							■								■	6	55%
Quality/ clinical guidelines monitoring			■		■				■	■									5	45%
Accounting										■									1	9%
Over staff performance measurement			■																1	9%
Reimbursement																			0	
Individual staff performance measurement																			0	
No specific use				■		■						■							3	

29.   The presence of tools like **unique patient identifier** (UPI) and **electronic clinical records**, potentially useful in quality assessment was also examined. UPI is considered essential both in enabling for tracing the path of patients all through the health care system across levels of care and providers and in allowing for patient rather than event-based calculations. It should be noted that in some countries there exist some mechanism to identify patients, however, legal constraints and regulation rend impracticable its use in mental health care quality assessment. In those cases this feature of the information system has been reported as unavailable for the purpose of this survey. A unique patient identifier is available in ten countries (refer to table 10). In another four countries (Finland, Italy, New Zealand and Norway) it was anticipated that it would become available within the following twenty-four months. Its main use in the countries where it is implemented is in output measurement, reimbursement and accounting and for quality/clinical guidelines monitoring.

Table 10. Unique patient identifier (14 countries)

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Output measurement		X	X	X						X						X	X		6
Reimbursement		X							X					X	X	X			6
Quality/ clinical guidelines monitoring			X	X		X										X			4
Accounting		X							X							X			4
Over staff performance measurement			X	X															2
Benchmarking			X													X			2
Individual staff performance measurement																			0
No specific use					X		X				X	X							4

30.   Electronic clinical records have the advantage to make available in electronic format a wealth of detailed information regarding the same patient, including co-morbidities, timing of interventions, interventions by different care providers etc. The electronic support normally entails structured fields for information recording that can greatly simplify information extraction, thus, turning clinical records amenable as regular data sources. Electronic clinical records are currently available only in five of the participating countries and in three more (Finland, Italy and the Slovak Republic) it was anticipated that they would be in use within the following twenty-four months. Its main use in the countries where it is implemented is for quality/clinical guidelines monitoring and as a base for output measurement (table 11).

Table 11. Electronic clinical records (8 countries)

Main Use	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Quality/ clinical guidelines monitoring						X													4
Output measurement											X						X		4
Reimbursement																	X		2
Over staff performance measurement																			0
Accounting																			0
Benchmarking																			0
Individual staff performance measurement																			0
No specific use				X			X						X	X					4

1.3. Coding systems

31.   Standardisation constitutes the best way to ensure a common language across countries. International classification systems constitute a valuable asset when available as it is applied across all stages of data production, storage and report, thereby greatly increasing data comparability.

32.   WHO's International Classification of Diseases (ICD) used to classify diseases and other health problems, has become the international standard diagnostic classification for epidemiological and health management purposes. ICD-10 is the latest version (an updated ICD-11 is currently under development). However, because of its impact in shaping national information systems, update to new versions of ICD involves issues such as staff training, adaptations to new definitions and changes to funding schemes that make it onerous for countries. As a result many countries still rely on ICD-9 for data codification. Therefore the use of different versions of ICD across countries is a real issue in specifying the indicators for international comparison.

33.   The Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV), published by the American Psychiatric Association, Washington D.C., 1994, has for years been the main diagnostic reference of Mental Health professionals. It provides a comprehensive classification of disorders based on the description of symptoms. The chapter on mental disorders (F) of the ICD 10 is based on DSM-IV description, representing a step forward in providing a tool for standardised codification of diagnosis. However, the codes for diagnostic or therapeutic procedures are still underdeveloped. The International Classification of Health Interventions (ICHI) created by the National Centre for Classification in Health, Australia, for WHO's Family of International Classifications seems promising in this respect. Its chapter XIX, *Non invasive, cognitive and other interventions,* includes codes for both diagnostic and therapeutic mental health care interventions. However ICHI is still in its beta trial version, it is already entering extensive field trials for possible adaptation and eventual validation, before it is submitted to the WHO Governing Bodies for endorsement. As a result several countries have developed their own coding tools and many others do not code these data.

34.   The international classification of primary care (ICPC) was developed by the World Association of Family Doctors (WONCA) and recognized into WHO family of classifications. It contains a chapter with psychology (P) and another with social (Z) codes. It also provides codes for the most frequent family practice interventions.

35.   Respondents were asked to indicate which coding system was generally applied in recording diagnoses of mental disorders, mental care procedures and interventions in inpatient, outpatient, primary, and community care. They were also asked if any coding modifications were planned.

36.   Of the eighteen countries, ten are currently undergoing modifications to their coding system. In Canada, the transition from ICD-9 to ICD-10-CA has just been completed in all provinces for acute hospital based care. In Portugal, the 2007/2008 reforms include a redefinition of the mental health information system, which includes a migration to ICD-10, although the requirements of the DRG payment system continue to need ICD-9 CM coding support. Australia is developing a mental health interventions classification, and Norway is developing procedural codes and the development of case-mix systems for mental health care.

1.3.1. Inpatient Care

37.   The coding used to record diagnosis of mental disorders for inpatient care varies across countries. Table 12 provides a breakdown of the different coding used and the number of countries utilising a particular code for both diagnoses and procedures and interventions. To record diagnoses of mental disorders, the majority of countries use ICD 10 (4 digits). For recording of procedures and interventions, the majority of countries use ICD 10 (4 digits). However a number of countries have developed their own system of codification for procedures and interventions. Only Iceland is not applying codification for procedures and interventions in inpatient care.

Table 12. Inpatient care

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Diagnoses																			
ICD 10 (4 digit)	■	■	■		■				■	■			■	■			■		9
DSM IV		■				■	■		■	■								■	6
ICD 10 (3 digit)						■		■			■					■			4
ICD 9						■			■			■			■				4
ICD-9 CM															■			■	2
ICPC				■															1
ICPC 2																■			1
Netherlands LADIS									■										1
Procedures and Interventions																			
ICD 10 (4 digit)	■		■	■					■	■			■	■			■		8
ICD 9							■					■							2
ICD 10 (3 digit)											■					■			2
ICD-9 CM															■			■	2
DSM IV									■	■									2
ICPC 2															■				1
Canadian Classification of interventions		■																	1
Classification EDGAR				■															1
Japan Unique Coding								■											1
NHS tables of procedures coding												■							1
Australian Classification of Health Interventions	■																		1
None						■													1

1.3.2. *Outpatient care*

38.   While in the inpatient setting virtually all countries had in place a system of codification for diagnosis and procedures, this is not the case when turning to outpatient care. New Zealand, Spain and Switzerland do not apply any coding system for diagnosis and Finland, Iceland, New Zealand, Spain and Switzerland do not codify procedures and interventions. Where a coding system is in place for outpatient care, the majority of countries are using ICD 10 (4 digit) and ICD 10 (3 digit) to code both diagnoses and procedures and interventions.

Table 13. Outpatient care

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Diagnoses																			
ICD 10 (4 digit)	X	X	X		X						X		X	X					7
ICD 10 (3 digit)						X		X	X		X					X			5
DSM IV						X	X											X	3
ICD 9							X		X			X							3
ICD-9 CM																		X	1
ICPC				X															1
None																	X		1
Netherlands LADIS									X										1
Procedures and Interventions																			
ICD 10 (4 digit)	X		X								X		X						4
ICD 10 (3 digit)											X	X				X			3
None				X	X												X		3
ICD 9							X					X							2
ICD 9- CM																		X	1
DSM IV									X										1
Canadian Classification of interventions		X																	1
Classification EDGAR					X														1
Japan Unique Coding								X											1
NHS tables of procedures coding													X						1

1.3.3. Primary care

39.   The number of countries not coding in primary care settings is bigger than for outpatient services (Australia, France, New Zealand, Spain, Switzerland and USA for diagnosis, and Australia, Canada, Finland, France, Iceland, Spain and Switzerland for procedures and interventions). Among the countries that do code diagnosis, the majority use ICD 10 (4 digit) and ICD 10 (3 digit). For procedures and interventions the most common classifications are International Classification of Primary Care (ICPC), ICD 10 (3 digit) and ICD 10 (4 digit).

Table 14. Primary care

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Diagnoses																			
ICD 10 (4 digit)			▩	▩									▩	▩					4
ICD 10 (3 digit)						▩		▩								▩			3
ICD 9		▩				▩													2
ICPC									▩		▩	▩							3
None	▩																▩		2
DSM IV								▩											1
Procedures and Interventions																			
None	▩			▩		▩											▩		4
ICPC									▩		▩	▩							3
ICD 10 (3 digit)													▩			▩			2
ICD 10 (4 digit)			▩											▩					2
ICD 9						▩													1
ICD 9- CM																		▩	1
Japan Unique Coding								▩											1

1.3.4. Community care

40.	Not all countries apply codification for community care, but of the ones that do, the majority use DSM IV, and ICD 10 (4 digit) and (3 digit). For procedures and interventions, six countries do not code and for those that do, the coding varies widely with virtually each country applying a different classification system.

Table 15. Community care

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Diagnoses																			
DSM IV		X					X		X	X									4
ICD 10 (4 digit)	X		X							X									3
ICD 10 (3 digit)								X								X			2
None												X					X		2
ICD 9							X												1
ICPC				X															1
Procedures and Interventions																			
None	X			X							X	X	X				X		6
ICD 10 (4 digit)			X							X									2
DSM IV									X	X									2
ICD 9							X												1
ICD 10 (3 digit)																X			1
Japan Unique Coding								X											1

SECTION 2: INSTITUTIONAL ARRANGEMENTS

41.   The survey collected information on institutional arrangements framing information systems related to mental health care in each of the countries. A more detailed profile for each of the 18 participating countries is provided in Annex 2. This section will outline the common features across countries and their distribution. This includes an account of the main users/audience, the integration between mental health care and physical health information, the degree of integration of information across different levels of care, the reporting, compliance and generation of data and where responsibility for it lies.

2.1. Main users and audience of the information

42.   The main users of the information provided in the data sources include by order of frequency, national government, regional health authorities, health service managers, heads of clinical departments and clinical researchers. In addition, in some countries local health authorities, clinical health professionals and the public make use of the data. Only seven countries indicated use by insurers. Government, regional and local health authorities utilise the data primarily for planning purposes; Governments further find use in the data for capacity building, for the monitoring of health care trends, for assessing disparities in access and care, and for resource allocation. Local and regional health authorities use the data for administrative purposes and for monitoring. Health services managers, heads of clinical departments use it for management purposes; clinical health professionals' principal use of the data is as feedback on their own activity. In the few cases where data is reported to them, the public audience/citizens it is used for accountability and service assessment; as constituents they utilise the data to assess the availability of needed services. Insurers use the data mainly for reimbursement, as expenditure data to evaluate costs.

2.2. Compliance with data reporting standards

43.   Under-reporting and lack of compliance to standards for data at the generation point is a relatively common problem across information systems. Table 16 provides an estimation of the percentage of total activity in each of the levels of mental health care provision that is actually reported at the national level.

Table 16. Compliance and reporting (percentage of total mental care activity nationally reported)

Level of care	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA
Inpatient care	100	>95	100	100	NA	100	100	100	80	100	80	100	100	5	100	95	95	80
Outpatient care	60	<30	100	NA	NA	100	70	100	75		801	90	90	95		30	0	80
Primary care	NA	>90		NA	NA	100		100	0	0		10	90			NA	0	
Community care	60	<5		100	NA		60	100	75	85		0				NA		

1. 80% refers to adults; 85% for children and adolescents

44.   Reporting across the inpatient setting is generally very good, however the other care settings pose a serious concern about the reliability of the data even when codified reporting systems are present.

2.3. Reporting and data provision structure

45.   In the majority of countries, the bulk of responsibility for generating data lies with administrative staff across the four domains of care. In addition, senior doctors, junior doctors, and nurses play a critical role. In a number of countries, other allied health workers such as social workers and psychologists are also involved.

46.   Data collection and reporting is regarded as a routine activity. For the staff involved it is seen as a device to put a wider perspective on their daily work. However, in eleven countries it was also seen as a task that adds an additional burden of work. In two countries, it is seen as a controversial issue and a mechanism of control and punishment and therefore can be boycotted (Table 17).

Table 17. Data collection and reporting

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
A regular routine activity																			14
An additional burden																			11
A device for professionals to put in a wider perspective of their daily work																			8
A price to pay to promote continuous improvement																			6
A mechanism of control allowing for improvement to be encouraged																			5
A controversial issue																			2
A mechanism of control allowing for punishment and hence to be boycotted																			2

47.   In sixteen countries decision-making about the data to be included in the reporting systems and indicators to be generated are made at the managerial level based on the needs of the main users. In eleven countries, it involves formal consultation with the main users. In seven countries, it involves formal consultation with people at the data input/generation point. Only two countries indicated that it involved formal consultation with the people to be assessed from this information (see table 18).

Table 18. Decision making in the reporting systems and indicators

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
It is made at information systems managerial level based on the needs of their main users	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■		■	16
It involves formal consultation with main users	■	■	■			■					■	■		■	■	■	■		11
It involves formal consultation with people at the data input/generation point	■		■			■							■	■			■	■	7
It involves formal consultation with the people to be assessed from this information			■			■													2

48.   Four countries indicated that there is no established mechanism of feedback to the people involved in data generation (Table 19). Twelve countries indicated there is a feedback mechanism that targets the people responsible for data input in terms of ways of improving the quality of the data or simplifying the process of data collection. The majority of countries also indicated that the feedback targets the people responsible for data input in terms of the resulting indicators. In seven countries, the feedback targets the people responsible for data input in terms of the changes induced by the resulting indicators. Only one country indicated that the feedback was intended for quality improvement purposes.

Table 19. Feedback Mechanism

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
The feedback targets the people responsible for data input in terms of ways of improving the quality of the data or simplifying the process of data collection	X		X	X	X	X			X		X		X			X	X	X	12
The feedback targets the people responsible for data input in terms of the resulting indicators	X	X	X	X	X	X			X		X		X				X		11
The feedback targets the people responsible for data input in terms of the changes induced by the resulting indicators	X		X	X	X											X	X		7
There is no established mechanism of feedback to the people involved in data generation								X				X		X				X	4
Feedback is intended for quality improvement purposes			X																1

2.4. Integration between mental health care information and somatic health information

49.   The degree of integration between mental health care information and physical health information varies. As table 20 shows, in six countries, most of the data sources available include both mental health care and physical health care related information in the same set. In seven countries, some of the different data sources available include both mental and physical health care related information in the same set. Three countries reported that there is a substantive split between sources covering mental health care information and those related to physical health care. In five countries, mental health care data sources are a separate specified set of the information system.

Table 20. Integration between mental health care and physical health information

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Some of the different data sources available include both mental health care and physical health care related information in the same set							X	X				X	X		X		X	X	7
Most of the different data sources available include both mental health care and physical health care related information in the same set	X	X	X	X											X		X		6
Mental health care data sources are a separate specific set of the information system	X								X	X	X							X	5
There is substantive split between sources covering mental health care information and those related to physical health care					X	X				X									3

2.5. Integration of information systems across different levels of care

50.   The degree of integration of information systems across different levels of care provision and settings varies as outlined in table 21. Nine countries reported that patients can be tracked inside some of the levels of care but not across them. Three countries indicated that patients can be tracked inside some clinical settings but not across them even for the same level of care provision. In one country, the patients can be tracked inside each clinical setting but not across them even for the same level of care provision. In one country, records refer to episodes and patient tracking is not possible.

Table 21. Degree of integration across different levels of care

	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovak Republic	South Korea	Spain	Sweden	Switzerland	USA	Total
Patients can be tracked inside some of the levels of care but not across them	X	X			X					X		X	X	X	X	X			9
Patients can be tracked all through their mental health care pathway	X		X						X						X		X		5
Patients can be tracked inside each of the levels of care but not across them	X					X				X					X				4
Patients can be tracked inside some clinical setting but not across them even for the same level of care provision	X			X	X														3
Records refer to episodes so it is not possible to track patients					X			X											2
Patients can be tracked inside each clinical setting but not across them even for the same level of care provision											X								1

SECTION 3 – AVAILABILITY OF INDICATOR INFORMATION

51.   Respondents were asked to update the availability of data to calculate the twelve mental health indicators already surveyed in 2005. These indicators are discussed in detail in the OECD Health Technical Paper No. 17 (Selecting Indicators for the Quality of Mental Health Care at the Health Systems Level in OECD Countries) and were reproduced earlier in this document (see Table 1).

52.   For each of the indicators countries were asked to indicate if:

- The indicator is currently collected (A)

- The indicator could be constructed from available data (B)

- A variant of this indicator could be constructed (C)

- Data for this indicator might become available in the next three years (D)

- Unlikely to become available (E)

53.   Table 22 provides a detailed summary of the responses given. The table is ranked according to indicators that are "available immediately (A+B+C)". The category "available immediately" encompasses countries that indicated that the indicator is currently collected, the indicator could be constructed from available data and/or a variant of this indicator could be constructed. The table also provides individual country responses. Table 23 summarises the final ranking of indicators in terms of availability.

Table 22. Detailed summary of responses ranked by availability

Indicators	Australia	Canada	Denmark	Finland	France	Iceland	Italy	Japan	Netherlands	New Zealand	Norway	Portugal	Slovakia	South Korea	Spain	Sweden	Switzerland	United States	A	B	C	D	E	Available immediately (A+B+C)	Not Available
MH7: Hospital re-admissions for psychiatric patients	B	A	B	B	D	A	B	D	A	B	D	A	A	D	B	B	D	C	5	7	1	5	0	13	5
MH8: Length of treatment for substance-related disorders	C	B	B	B	C	A	D	D	B	B	B	A	C	D	D	D	D	A	3	6	3	6	0	12	6
MH12: Mortality for persons with severe psychiatric disorders	A	B	B	A	E	B	B	E	E	B	D	B	A	E	A	A	D	C	5	6	1	2	4	12	6
MH9: Use of anti-cholinergic anti-depressant drugs among elderly patients	E	B	D	B	B	B	D	D	B	B	B	D	D	D	B	A	D	E	1	8	0	7	2	9	9
MH2: Continuity of visits after hospitalization for dual psychiatric/substance related conditions	E	C	B	D	E	B	E	D	D	C	D	B	D	D	D	D	D	C	0	3	3	9	3	6	12
MH4: Continuity of visits after mental health-related hospitalization	E	B	B	D	E	B	D	D	D	B	D	B	D	D	D	D	D	C	0	5	1	10	2	6	12
MH1: Timely ambulatory follow-up after medical health hospitalization	C	E	B	D	E	B	D	D	D	B	D	A	D	D	D	D	D	E	1	3	1	10	3	5	13
MH5: Case management for severe psychiatric disorders	D	E	B	C	C	D	D	D	E	D	C	C	D	E	D	D	D	E	0	1	4	9	4	5	13
MH10: Continuous anti-depressant medication treatment in acute phase	E	D	D	D	E	B	D	D	B	D	E	D	D	E	D	A	D	A	2	2	0	10	4	4	14
MH11: Continuous anti-depressant medication treatment in continuation phase	E	D	D	D	E	B	D	D	B	D	E	D	D	E	D	A	D	A	2	2	0	10	4	4	14
MH6: Visits during acute phase treatment of depression	E	E	D	D	E	A	D	D	E	D	D	B	D	E	D	D	D	A	2	1	0	10	5	3	15
MH3: Racial/ethnic disparities in mental health follow-up rates	E	E	E	E	E	C	E	E	D	B	D	E	E	E	D	D	E	C	0	1	2	4	11	3	15

A   Indicator is currently collected
B   Indicator could be constructed from available data
C   A variant of this indicator could be constructed
D   Data for this indicator might become available in the next three years
E   Unlikely to become available

Table 23. Indicators ranked by availability

Indicators - Ranked by availability	Available immediately (A+ B + C)	Not Available
MH7: Hospital re-admissions for psychiatric patients	13	5
MH8: Length of treatment for substance-related disorders	12	6
MH12: Mortality for persons with severe psychiatric disorders	12	6
MH9: Use of anti-cholinergic anti-depressant drugs among elderly patients	9	9
MH2: Continuity of visits after hospitalization for dual psychiatric/substance related conditions	6	12
MH4: Continuity of visits after mental health-related hospitalization	6	12
MH1: Timely ambulatory follow-up after medical health hospitalization	5	13
MH5: Case management for severe psychiatric disorders	5	13
MH10: Continuous anti-depressant medication treatment in acute phase	4	14
MH11: Continuous anti-depressant medication treatment in continuation phase	4	14
MH6: Visits during acute phase treatment of depression	3	15
MH3: Racial/ethnic disparities in mental health follow-up rates	3	15

54.   There are three indicators that are reported as available in at least ten countries, the threshold agreed by the HCQI Expert Group:

- Hospital re-admissions for psychiatric patients (MH7)

- Length of treatment for substance-related disorders (MH8)

- Mortality for persons with severe psychiatric disorders (MH12)

55.   As reported in the first section of this paper, administrative *hospital* databases are currently the most widely available sources related to mental health care. All the 12 indicators recommended by OECD Health Technical Paper No. 17 are based on administrative data. However it seems clear that those relying on administrative data coming from outpatient settings, with the exception of substance related disorders (MH8), are more problematic across countries.

56.   The three indicators dealing with the treatment of depression (MH10, MH11 and MH6) seem to be the most challenging in terms of data availability, scoring at the bottom. These indicators require the ability to follow-up individual patients along a time period and this information is hardly recorded unless the patient can be individually identified. Only the indicator related to the type of antidepressants prescribed to elderly people at discharge (MH9) seems more promising in terms of likelihood of availability in the relative short-term. Apparently, data on prescription at discharge would be more readily available since they do not require patient tracking. It might also be due to the superior availability of inpatient data, underscoring, again, the need to improve information systems to collect data in outpatient settings at the national level.

57.   Racial/ethnic disparities in mental health follow-up rates (MH3) seem to warrant reconsideration of its suitability for international comparison. Eleven out of eighteen countries declared it to be unlikely to become available (see Table 23) and in occasions the reason supplied to back this statement was that, in their national context, making this type of information available was either considered irrelevant (Korea, Italy) or legally forbidden (Portugal, Slovak Republic). Thus, though there is no doubt about its relevance for the purpose of national monitoring of the quality of the system depending on countries' circumstances, this measure might not be helpful for the purpose of international comparisons.

CONCLUSIONS

58.   This paper provides an overview of the present mental health care information systems in 18 OECD countries with the aim to explore the possibilities for measuring the quality of mental health care and identify potential indicators to be included in OECD's HCQI set. The main conclusions that can be drawn from the information described in the previous sections can be summarised as follows:

1. The availability of data across countries is generally very good for some types of data (structure and activity) and problematic for others. In order to measure process and outcome of mental health care, data on treatment and procedures, together with mental morbidity individual data and specific mortality data would be required. Examining the figures, there is a clear need to improve information systems across OECD countries in this respect. Nevertheless, many of the countries where this type of information is not currently available are already undergoing some kind of reform along these lines, so the availability of these data can be expected to improve significantly in the short term.

2. The data sources currently most widely available across countries are hospital administrative databases, national surveys and national registries. This should be taken into account in the selection of mental health care quality indicators for the first phase of data collection.

3. The expansion of the availability of the unique patient identifier expected in the next two years would mean a real step forward in terms of ability to track patients across settings and levels of care. Strict anonymisation protocols would be required to make full use of this tool while preserving confidentiality. However, the introduction of a unique patient identifier does not seem to be evolving in parallel with the degree of development of administrative data sources at the primary care and community care levels. This can pose problems to build indicators assessing continuity of care and quality of prescription or treatment at this level. That is especially important because most of mental health care is provided out of the hospital across OECD countries.

4. The integration of information systems across different levels of care provision is low. Reinforcing this feature of information systems will be of paramount importance in order to pursue data to measure continuity of care.

5. The integration between mental health care information and physical health information is reasonably good at hospital level. This can allow for outcome indicators linking somatic and mental health.

6. The decisions about the data items to be collected are often made centrally, aiming to support planning and management and in some cases reimbursement. Data collection is mainly bottom up through administrators and health care professionals. Therefore, the shaping of information systems to allow for quality assessment at the system level should be reasonably attainable. Common problems exist with data reporting and compliance; in most of the cases, data recording is perceived as routine activity by the personnel involved, though it is often considered an additional burden. The use of this type of information for consumer's information or public accountability is infrequent across countries.

7.   Coding varies from country to country, but in general it is changing in the direction of ICD-10. This general trend should be taken into account in specifying the indicators to be collected, while contemplating the translation of the relevant codes into the other classifications in use across countries.

8.   The feasibility of measuring indicators is increasing for some of those indicators recommended in previous phases of the work in HCQI project. Hospital re-admissions for psychiatric patients (MH7), Mortality for persons with severe psychiatric disorders (MH12) and Length of treatment for substance-related disorders (MH8) should be considered as the "low hanging fruit" immediately available to start the data collection. Nevertheless, the final aim of this effort is to yield a balanced and comprehensive set of mental health care quality indicators. This set should populate the conceptual framework taking into account the type of data that is already collected in the national information systems or likely to be collected in the near future and the feasible innovations to be pursued. Populating this framework parsimoniously with a list of policy relevant, scientifically solid and feasible should be attainable in the near future in view of the trends already observed in information systems and the priority achieved by mental health in most national and international political agendas.

ANNEX 1: INFORMATION SOURCES AVAILABILITY AND USE

	Admin hospital data	Admin primary care data	Administrative community centers data	Hospital pharmacy registries	Electronic clinical records	National registries/statistics	National surveys on health care utilization	National surveys on drug consumption	National surveys on morbidity	National surveys on continuity of care	Monitoring/quality improving linked information systems	Patient safety/adverse events linked information systems	Specific mental health data information systems	Unique patient identifier
Australia	Y, A, R,O,B	N	Y					N	N, O				O,B	
Canada	Y,A,O	Y,A,Q,R,B	Y,A, R,O		Y	Y,O,B	Y,O	Y,B	Y,A,O	Y,Q,O,B		Q,S,SI,O,B	Y,O	Y,A,R,O
Denmark	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,R,S,O,B	A,Q,S,O,B	A,Q,S,O,B	Q,S,O,B	Q,S,O,B	Q,S,O,B	Q,S,O,B
Finland	A,O,B	N,A,O,B	N,A,O,B	Y,A,Q,O,B	Y	Y,Q,O,B	Y,Q,O,B	Y,Q,O,B	Y			Y,Q,S	O,B	Q,S,O
France	Y,A						Y	Y	Y				Y	
Iceland	Y,A,O	Y,O	N	A,Q,B	Q,	Q,R,B	Q	A,Q				Q	Q	Q
Italy	Y,Q,R,S,O,B	Y	Y	Y	Y	Y,Q,O,B	Y,B	Y,Q,B	Y,B	Y	Y	Y	Y	Y
Japan	A,R	A,R		A,R										
New Zealand	Y,A,Q,O,B		Y,A,Q,O,B			Y		Y	Y		Y		Y,A,Q,O,B	Y,O
Norway	A,Q,R,S,SI,O,B		A,Q,R,S,SI,O,B	O	O	O	O	O	O		O	O	O	
Portugal	Y,A,Q,R,S,O,B			Y,A,Q,S,O,B	Q,S,O,	Y,O,B	Y,O,B	Y,O,B	Y,O,B	Y,O,B			Y	
Slovak Rep	Y,A,Q,R	Y,A,Q	Definiton?	A,R	Y	A,Q	A,Q,R	A,Q	A,Q,R		Q,S,SI,B			
South Korea	R	R	N,S		N		N		N					R
Spain	N, A,Q					R,O	A,R,	A,R,O	A,R					A,R
Sweden	A,Q,O,B		A,Q,S,O,B	Q,O,B	Q	O,B	Q,O,B	Q,S,O,B	Q			Q,S,SI,O,B	Q,O,B	Y,A,Q,R,O,B
Switzerland	Y,A	R,O			R,O		O	O	O					R,O
USA	A,Q,R					O	O	O	O		Y, O,B		O,B	

Legend

	Not availble	A	Accounting
	Available	Q	Quality/ clinical guidelines monitoring
	Available 24 months	R	Reimbursement
Y	useful for mental health quality assessment	S	Overall staff performance measurement
N	useless for mental health quality assessment	ST	Individual staff performance measurement
		O	Output measurement
		B	Benchmarking

ANNEX 2: COUNTRY INFORMATION SYSTEM PROFILES

AUSTRALIA

In Australia, the **types of mental health information available on a national level** includes mental morbidity aggregate and individual data, services utilization data, treatment and procedures data, staff and structure data. The **sources of data that are currently available** includes hospital administrative data in the form of hospital morbidity data, primary care administrative data (Medicare Benefits Data), community centres data (community mental health care minimum data set, and residential mental health care minimum data set), national registries/statistics, national surveys on health care utilization, national surveys on drug consumption (pharmaceutical benefits scheme data), national surveys on morbidity (ABS National Survey of Mental Health and Well Being) , patient safety/adverse events and specific mental health data information systems. Of the available data for primary care, administrative data is considered unusable due to the fact that clinical data (diagnosis) is not reported and not always identifiable and it contains no outcomes information. National surveys on drug consumption are also unusable due to the fact that there is no link to outcomes information. National surveys on morbidity are unusable because they are cross sectional only.

   Specific mental care data that is regularly collected and currently reported includes three main sources:
- National Minimum Data Set Community Mental Health Care. This includes information on service contacts provided by specialised public sector mental health services for patients who live in the community.
- The National Minimum Data Set Residential Mental Health Care which includes information on episodes of residential care for residents in government-funded residential mental health care services.
- The National Minimum Data Set Mental Health Establishments, which collects data on mental health spending, workforce and service mix for specialised mental health services, managed or funded by state/territory governments.

   Main purpose and audience: The main users/audience for the information provided in the data sources is government, regional and local health authorities, insurers, health services managers, heads of clinical departments, clinical researchers, clinical health professionals and the public. (Annex 1 provides a summary of the sources of data and the main uses of the data systems).

   Design Responsibility and Data Imputation: Decision making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level based on the needs of the main users; it involves formal consultation with main users and with people at the data input/generation point. There is a feedback mechanism and it is intended to provide people generating data with guidance on ways to improve the quality of the data or to simplify the process of data collection; informing them about the resulting indicators and organisational changes induced by the resulting indicators is also part of the use. Senior doctors, junior doctors, nurses, and administrative staff, are all in charge of generating the information that feeds into existing data sources. Data collection and reporting is regarded as a regular routine activity but one that does add an additional burden.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data across information systems is not a concern in inpatient care where there is complete compliance. In outpatient and community care, compliance is 60% and in primary care it is unknown.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders is ICD 10 (4 digit) in inpatient, outpatient and community care. There is no coding for primary care. For mental care procedures and interventions, ICD 10 (4 digit) is used for inpatient and outpatient care; in addition the Australian Classification of health interventions is also used for inpatient care. There is no coding for primary and community care. There is a coding modification underway with the development of a mental health interventions classification.

CANADA

In Canada, the **types of mental health information available on a nationally representative basis** includes mortality among persons with severe mental disorders, individual and aggregate mental and physical morbidity data on treatment and procedures, services utilization, staffing and human resources and organizational structure and systems data. Mental health data and information feeds into a number of areas such as for policy formulation, resource projections, management, and prevalence estimates. Normally **sources of data available** and considered useful include administrative hospital data, administrative primary care data, national registries/statistics, national surveys on health care utilization, and drug consumption. There are multiple applications of such data. For example, primary care administrative data is useful in the future projection of resource requirements for different regions and relating it to the epidemiological data. Academic researchers will find national surveys very helpful in identifying vulnerable populations and also assessing prevalence levels, morbidity levels, access to services, their impact, and quality of life.

There is **regular collection and reporting of mental health data**, which is currently reported across a number of domains. Diagnostic data and length of hospital stay is collected on an annual basis. Diagnostic data includes information on primary and secondary diagnosis at hospital inpatient discharge. Information on primary or inpatient setting medical interventions is collected both quarterly and annually. This information is mainly used for billing, systems management, and benchmarking. Readmission data on multiple unscheduled admissions to various domains of care within a given period is also collected annually and informs the existing quality of care levels. Data on co-morbidities and health service intervention is again collected annually, with the latter being used to explore resource intensity for treatments, against other data such as administrative hospital data and physician billing data from various provinces.

There are a number of mental health care monitoring programs currently underway in Canada. The "Surveillance of Mental Disorders" developed by Public Health Agency of Canada is a mental health surveillance information system. Data is to be derived from available administrative datasets, which includes hospital morbidity data, as well as physician billing data. Another area is the development of a surveillance system in psychologist's offices to assess the nature of problems, risk factors, impact, and interventions used. There is also the development of mental health and illness indicators for population surveillance. The Canadian Collaborative Mental Health Initiative has published a series of best practices for collaborative mental health care based on a review of shared care arrangements throughout Canada.

Main purpose and audience: The main users/audience of mental health data and information in Canada are the government, regional health authorities, local health authorities, health service managers, heads of clinical departments, clinical researchers, clinical health professionals, and the public audience/citizens. The Government, regional and local health authorities, and health service managers work with inpatient, administrative and physician billing data. Regional and local health authorities also

use community mental health data. Heads of clinical department mainly focus on inpatient and administrative data while clinical researchers in addition, use survey data. Reports based on aggregated data are made available to the public. (Annex 1 provides a summary of the sources of data and the main uses of the data systems.)

Design Responsibility and Data Imputation: In Canada, there is a managerial structure for mental health information, which undertakes formal consultation with main users. There is a mechanism for regular feedback in the data / information generation process and the feedback targets the people responsible for data input in terms of the resulting indicators.

Degree of integration of information across different levels of care provision and settings: There is some degree of integration of information systems across different levels of mental care provision and settings. Patients can be tracked within certain levels of care but not across them. Some tracking is possible from emergency to inpatient, and in a very limited way to outpatient care, when the outpatient setting is hospital based. Most of the data sources available include both mental and physical health care related information in the same set.

Compliance and reporting cultures: Underreporting and lack of compliance to data standards is a common problem across information systems. More than 95% of the inpatient care activity, 90% of primary care, 30% of outpatient care, and 5% of community care is actually reported at national level. However, compilation of all this data to jurisdictional level could constitute up to 90%.

There are a number of professionals including junior doctors, nurses, administrative staff, and social workers who are involved in data generation that feeds into various existing data sources. Junior doctors collect data on inpatient and primary care. Nurses collect data on inpatient, outpatient, primary care, and community care. Administrative staff collects inpatient, outpatient, primary care and community care and social workers collect information on inpatient, outpatient, and community care. Although data collection and reporting is regarded as a regular routine activity, it is also acknowledged as one that adds an additional burden of work.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system generally applied to record diagnosis of mental disorders includes ICD 9 in primary care, ICD 10 (4 digit) in both inpatient and outpatient care. DSM IV is also used for inpatient and community care. The Canadian Classification of interventions is the coding system that is generally applied to record mental care procedures and interventions. A modification to the coding system for acute hospital based care has been implemented for all jurisdictions from ICD-9 to ICD-10-CA.

DENMARK

In Denmark, the **types of data** on mental health information that is available on a nationally representative basis includes mortality among persons with severe mental disorders, mental morbidity - aggregate and individual data-, mental and physical morbidity, services utilization, treatment and procedures, staff and structure data.

Sources of data available include administrative hospital data, administrative community centres data, hospital pharmacy registries, national registries/statistics; national surveys on health care utilization, drug consumption, morbidity, and continuity of care are also available; monitoring/quality improving linked information systems, patient safety, /adverse events linked information systems, specific mental health data information systems complete the range. A unique patient identifier is implemented across the system.

Main purpose and audience: The main users/audience for the mental health information in Denmark is government, regional and local health authorities, health service managers, heads of clinical

departments, clinical researchers, clinical health professionals, and the public. (Annex 1 provides a summary of the sources of data and the main uses of the data systems).

Design Responsibility and Data Imputation: There is a managerial structure for mental health information that undertakes formal consultation with main users, with people at the data input/generation point and with the people to be assessed from this information. There is a mechanism for regular feedback in the data / information generation process. The feedback targets the people involved in and responsible for data generation and is intended for data quality improvement purposes.

Degree of integration of information across different levels of care provision and settings: There is integration of information systems across different levels of mental care provision and settings. Patients can be tracked all through their mental care pathway. Most of the data sources available include both mental and physical health care related information in the same set.

Compliance and reporting cultures: Underreporting and lack of compliance to data standards is not a concern with regards to inpatient and outpatient care, where there is 100% compliance. There are a number of professionals including senior doctors, nurses, and administrative staff, who are all involved in data generation, which feeds into various existing data sources. Although data collection and reporting is regarded as a regular routine activity, it is seen as a device for professionals to put in a wider perspective on their daily work and a mechanism of control allowing for improvements.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders and to record mental procedures and interventions in inpatient, primary, outpatient and community care is ICD 10 (4 digit). No modifications are planned.

FINLAND

In Finland, the **types of mental health information available on a national basis** include mortality among persons with severe mental disorders, aggregate morbidity data, and data on treatment and procedures.

Sources of data that are currently available include administrative hospital, primary care and community care data, hospital pharmacy registries, national registries/statistics, national surveys on health care utilization, drug consumption, and morbidity and patient safety/adverse events. However, it was reported that administrative data in both primary care and hospital setting does not allow for mental health care quality assessment. Within the next two years, monitoring/quality improving linked information systems will be available, including the implementation of electronic clinical records and unique patient identifier.

Finland has instituted a number of **mental health care monitoring programs**. Mental health information systems are being harmonised according to European Union standards devised by two mental health indicator projects the 'MINIMUM DATA SET' and the 'MINDFUL'. There are also some local and clinical research experiences on the use of indicators not readily available and on the possibility of linking various data. An example is the use of coercion within services and readmissions to psychiatric hospitals. Finland is currently responsible for running two EU projects aimed at drafting a minimum data set of mental health indicators to be used in all European member states, and to devise a web-based information system that will enable collection of the data already available in the different member states. These projects are part of the 'Health Monitoring Programme'. This information system was drafted to cover generic and disease specific morbidity, data on social and psychological protective and risk factors, mortality (suicides), discharge from psychiatric hospitals, number of visits in community care, and use of psychotropic drugs.

Main purpose and audience: The main users/audience for the information provided in the data sources are the government, regional and local health authorities and clinical researchers. (Annex 1 provides a summary of the sources of data and the main uses of the data systems.)

Other potential uses of data systems also exist. Administrative hospital data is used for clinical research and local monitoring. Administrative primary care data is used for local monitoring of services but this is not exclusive to mental health. Administrative data from community centres is used for local monitoring purposes. Data from hospital pharmacy registries feeds into local monitoring, financial accounting, and benchmarking. Electronic clinical records are not yet in use systematically or at national level, but they are being used locally in some pockets. Data from national registries/statistics, national surveys on health care utilization, national surveys on drug consumption, national surveys on morbidity and unique patient identifier are utilized in clinical research.

At the moment, general monitoring of the patient safety/adverse events linked information systems is undertaken by the National Agency for Medicines. This agency provides statistics on medication use which is used in clinical research, financial accounting and monitoring. However, there is a national 'medicine interaction' database project underway, which will aid in future decision-making.

Design Responsibility and Data Imputation: Decision-making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level based on the needs of the main users. The process involves formal consultation with people at the data input/generation point.

Data collection and reporting is being encouraged as part of a daily routine that will enable professionals to develop a wider perspective of their daily work and institute a mechanism of control allowing encouragement of improvements. Nevertheless, this effort is also viewed as an additional burden by staff responsible for the work. There is a regular feedback in the generation process to improve quality of the data collected and finding ways to simplify the process of data collection itself; this feedback targets the people responsible for data input in terms of the resulting indicators.

Degree of integration of information across different levels of care provision and settings: In Finland, patients can be tracked inside some clinical settings but not across them, even for the same level of care. At the national level, patients can be tracked within hospital services and the patient may be tracked within hospital services in the entire country. In outpatient services, data on number of visits is recorded. Most of the data sources available include both mental health and physical health care related information in the same data set.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data across information systems is not a concern in inpatient and community care where there is complete compliance. The figures for outpatient and primary care are not available.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system generally applied to record diagnosis of mental disorders is ICD 10 (four digits) in inpatient, outpatient, and community care and ICPC in primary care. The coding used to record mental care procedures and interventions in inpatient care is ICD 10 (4 digits). There is no coding for outpatient, primary and community care.

FRANCE

In France the **types of mental health information available on a nationally representative basi**s includes, services utilization data, treatment and procedures data, staff data and structure data. Mental morbidity aggregate and individual data is available but only for people who are followed in health centres and the information will only be available starting in 2009.

Sources of data currently available and considered useful include administrative hospital data, and national surveys on health care utilization, drug consumption, and morbidity. A unique patient identifier is also available but due to privacy legislation, it is not useable. It is anticipated that within the next 24 months specific mental health data information systems will be available.

Information that is regularly collected and currently reported includes availability data, bed numbers, and number of facilities. The main uses of this information are for general statistics, planning at the regional level and follow up of indicators. It is available as part of the SAE (statistique d'activité des établissements) database. Data is also collected annually to report activity by diagnosis and by service provision and the information includes number of episodes in hospital and number of consultations. Data on personnel is available and is collected annually. There is a qualitative research questionnaire produced every four years on the organisation of care and it reports the activities of psychiatric establishments. Social demographic data, which is collected annually, includes patient characteristics by days in hospital and by treatment. With regards to international initiatives, France was part of the ESEMED project.

Main purpose and audience: The main users/audience for the information provided in the data sources is government, regional health authorities, health service managers, heads of clinical departments, clinical researchers, and clinical health professionals. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Other uses include using hospital administrative data and specific mental health data information systems for piloting of pubic interventions and evaluation of geographical disparities. National surveys on health care utilization, drug consumption, and morbidity are used for piloting of pubic interventions.

Design Responsibility and Data Imputation: The decision-making about the data to be included in the reporting systems and indicators to be generated is made at the managerial level of the information systems, based on the needs of the main users. There is a feedback mechanism and it is intended to provide people generating data with guidance on ways to improve the quality of the data or to simplify the process of data collection, inform them about the resulting indicators and organisational changes induced by the resulting indicators.

Degree of integration of information across different levels of care provision and settings: With regards to the degree of integration of information systems across different levels of mental care provision and settings there is a substantive split between sources covering mental health care information and those related to physical health care.

Compliance and reporting cultures: It is difficult to say what the rate of reporting and compliance is due to undervaluation and double counting. There are a number of professionals including junior doctors, nurses, administrative staff, and other workers who are involved in data generation that feeds into various existing data sources but only for inpatient and outpatient care Data collection is not regarded as a routine activity but is sometimes seen as an activity that is a price to pay to promote continuous improvement, a mechanism of control allowing for punishment and hence to be boycotted. It is also seen as an activity that adds an additional burden and a controversial issue.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system generally applied to record diagnosis of mental disorders is ICD 10 (4 digit) in inpatient and outpatient care. The Classification EDGAR (entretiens, démarches, groupes, accompagnement, réunions) is used in inpatient and outpatient care to record mental care procedures and interventions. A modification to the coding system is currently underway and the first results will be available in 2009.

ICELAND

In Iceland, the **types of mental health information available on a national level** includes mortality among persons with severe mental disorders, mental morbidity aggregate and individual data, services utilization data, treatment and procedures data, staff data and structure data.

The **sources of data** that are currently available includes hospital, primary care and community centres administrative data, hospital pharmacy registries, electronic clinical records, national registries/statistics (suicide). There are also national surveys on health care utilization, drug consumption, and morbidity. Patient safety/adverse events linked information systems, specific mental health data information systems and a unique patient identifier. Only primary care administrative data is considered useful for mental health care quality assessment. Community centres data was felt to be unusable due to the fact that information specifically on mental health problems is not accessible. Data that is regularly collected and currently reported includes, use of service, admission, length of stay, number of visits, suicides and disability. Other initiatives include the working group Nordic Council of Ministers.

Main purpose and audience: The main users/audience for the information provided in the data sources is government, regional and local health authorities, health services managers, heads of clinical departments, clinical researchers, and clinical health professional. Hospital administrative data is used for financial accounting and output measurement. Primary care administrative data is used an output measurement. Annex 2 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Decision making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at the managerial level based on the needs of the main users. It involves formal consultation with main users, with people at the data input/generation point and with the people to be assessed based on this information. There is a feedback mechanism and it is intended to the provide people generating data with guidance on ways to improve the quality of the data or to simplify the process of data collection, and inform them about the resulting indicators and the organisational changes induced by the indicators. Administrative staff is responsible for data generation in inpatient, outpatient and primary care. Data generation/input is a regular routine activity that is viewed as a device for professionals to put in a wider perspective on their daily work.

Degree of integration of information across different levels of care provision and settings: Patients can be tracked in the mental health care pathway in terms of use of services and partially about treatment although information on appropriateness of treatment or outcome is not available. There is also a substantive split between sources covering mental health care information and those related to physical health care.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data across information systems is not a concern in inpatient, outpatient, and primary care where there is 100% reporting of total activity.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders is ICD 10 (3 digit) in inpatient, outpatient and primary care. For inpatient and outpatient care, many physiatrists also use DSM IV although the diagnosis is always reported in ICD codes. There is no coding used to record procedures and interventions. There is modification to the coding system in that the medical record system in the larger hospitals and private clinics has been partially computerized. The type of registration system is under scrutiny and health authorities have called for improved registration of central information.

ITALY

In Italy, the **types of mental health information available on a national basis** includes mental morbidity aggregate data (surveys), service utilization data, treatment and procedures data (although this is not routinely collected) and structure data.

The **sources of data currently available** include administrative hospital data and national registries/statistics; national surveys on health care utilization, drug consumption, and morbidity are also available. Within the next 24 months, administrative community data, electronic clinical records, patient safety/adverse events, specific mental health data and a unique patient identifier will be established. Structure and activity data is collected on an annual basis and its main use is for monitoring of the programme Essential Levels of Care (LEA). Structure data, which is collected at the hospital, residential and outpatient level, includes the number of premises and beds. Activity data includes the number of users and days in treatment.

Main purpose and audience: The main users/audience for the mental health information provided is government, regional and local health authorities, health services managers, heads of clinical departments and clinical researchers. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: In Italy, there is a managerial structure for mental health information and it involves consultation with main users. There is a mechanism for regular feedback that targets the people responsible for data input in terms of ways of improving the quality of the data, data input in terms of the resulting indicators and in terms of the changes induced by the resulting indicators.

Degree of integration of information across different levels of care provision and settings: Some of the different data sources (hospital data) include both mental health care and physical health care related information in the same database.

Compliance and reporting cultures: Underreporting and lack of compliance to data standards is not a concern in Italy for inpatient care where there is 100% reporting. In outpatient care it is 70% and in community care 60%.

Junior doctors and administrative staff are involved in data generation that feeds into various existing data sources. Junior doctors collect data on inpatient care and administrative staff on outpatient and community care. Although data collection and reporting is regarded as a regular routine activity it is also acknowledged as one that adds an additional burden of work. Welcome as a mechanism of control allowing improvements to be encouraged, It is also seen as a mechanism of control allowing for punishment and hence to be boycotted.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: To record diagnosis of mental disorders Italy uses ICD 9 and DSM IV for inpatient, outpatient, primary, and community care. ICD 9 is used to record mental care procedures and interventions. There is an ongoing project of a biennial adjustment of the coding system.

JAPAN

In Japan, the **types of mental health information available on a national level** include mental morbidity aggregate data, service utilization data, and staff and structure data.

At present, there are no administrative **sources of data available**. The only information that is regularly collected now is health insurance claims, which are collected monthly and used for reimbursement purposes. However, within the framework of the ongoing health information reforms, a number of national data systems will be developed and available for use by 2010. These include

administrative hospital and primary care data, and a hospital pharmacy Register. There is a continuing development of an electronic clinical record and at present approximately 20% of patient records are electronic but this information is not shared. There is no national Register for mental health disorders nor is their data on administrative community centres. There are a number of national surveys undertaken in Japan. They include a national survey on health care utilization that is conducted every three years and the most recent is October 2005 (Patient Survey). On a yearly basis, a national survey on drug consumption is undertaken on approximately 80% of the population (Social Insurance Claims Survey). The national survey on morbidity is conducted every three years and the most recent is June 2004 (National Household Survey).

A number of mental health care monitoring programs are currently underway in Japan. In the area of suicide, the government has launched an initiative to try to address the high suicide rate. Proposed measures include timely and prompt treatment, and improvements in work place mental health resources. Japan is also undertaking deinstitutionalisation and has formulated plans to reduce the number of psychiatric hospital beds and the creation of community facilities. In order to ensure continuity of care, public health centres will assume primary responsibility and will track patients.

Main purpose and audience At present, the only audience/user for the information provided in the data sources available is insurers and its main use is for reimbursement. (Annex 1 provides a summary of the sources of data and the main uses of the data systems).

Design Responsibility and Data Imputation: Responsibility for generating data and feeding it into the existing data lies with administrative staff across the four domains of care. Data collection and reporting is regarded as a regular routine activity. Decision making about the data to be included in the reporting systems and indicators to be generated are being made at the managerial level based on the needs of the main users. There is no established mechanism of feedback to the people involved in data generation.

Degree of integration of information across different levels of care provision and settings: There is no data integration of information systems across different levels of care provision and settings. Records refer to a single episode and it is not possible to track patients. Some of the data sources available include both mental health and physical health care related information in the same data set.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data across information systems is not a concern in Japan where 100% compliance is reported in the four levels of health care (inpatient, outpatient, primary, community care).

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders in inpatient, outpatient, primary and community care is ICD 10 (3 digit). To record mental health procedures and interventions Japan has a unique coding system that is used across the four domains of care. There are no planned modifications to the coding system.

NETHERLANDS

In the Netherlands, **types of mental health information available on a national level** include mental morbidity aggregate and individual data, services utilisation data and treatment and procedures data.

The **sources of data that are currently available** and considered useful include hospital administrative data (RIVM1), primary care administrative data (RIVM2), community centres data, hospital pharmacy registries, national health care utilisation surveys, national drug consumption surveys, national morbidity surveys, monitoring/quality improving linked information systems, patient safety/adverse events linked information systems and other specific mental health data information systems. Unique patient

identifier data is currently available but not considered useful due to privacy concerns. Within the next two years data from national registries/statistics (DIS) will be available.

Main purpose and audience: The main users/audience for the information provided in the data sources is government, regional and local health authorities, insurers, health services managers, heads of clinical departments, clinical researchers, clinical health professionals and the public. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Decision making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level based on the needs of the main users. There is a feedback mechanism and it aims to inform the people generating the data for quality improvement of the data and simplifying the processes of data collection. Senior and junior physicians, nurses, administrative staff and psychologists are responsible for providing data to the existing data sources. Data collection and reporting are regarded as adding an additional burden to regular health care activity.

Degree of integration of information across different levels of care provision and settings: There is integration of information systems across different levels of mental care provision and settings. In principal patients can be tracked all through their mental care pathway, but for privacy concerns, personal information is encrypted in this dataset (DIS). Mental health care data sources are separate from the physical health data information systems.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data across information systems is a common problem across information systems. In inpatient, outpatient and community care, total activity relevant is reported at an estimated 75-80%. In primary care there is no reporting.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders and to record mental care procedures and interventions is DSM IV (DIS) for inpatient, outpatient and community care. ICD 9 (translated from DSM data) and LADIS (landelijke aldohol en drugs informative system) is also applied for inpatient and outpatient care. Primary care is coded according to ICPC standards.

NEW ZEALAND

In New Zealand, the **types of mental health information available on a national level** includes mental morbidity aggregate data (diagnosis data), mental morbidity individual data, mental and physical morbidity individual data, services utilization data, staff data (provider arm only) and structure data.

The **sources of data that are currently available** and considered useful includes hospital administrative data, community mental health teams data, national registries/statistics, national survey on morbidity, information systems linked to monitoring/quality improving and specific mental health data information systems; a unique patient identifier is in use. Within the next two years, it is expected that a national survey on drug consumption will be available. Data is regularly collected for the DHB Mental Health Service profile and is used for benchmarking.

Main purpose and audience: The main users/audience for the information provided in the data sources are government, regional and local health authorities, health services managers, heads of clinical departments, clinical researchers, and the public. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Decision making concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level based on the needs of the main users. There is a feedback mechanism that aims to inform the people generating the data about the

resulting indicators. Nurses and administrative staff are in charge of generating the data that feeds into existing data sources in both inpatient and community care.

Degree of integration of information across different levels of care provision and settings: Patients can be tracked through inpatient care, community mental health teams, and emergency services and through a small number of NGO's via a unique patient identifier. There is a substantive split between sources covering mental health care information and those related to physical health care; mental health care data sources are a separate specific set of the information system.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data across information systems is not a concern in inpatient care where there is complete compliance. In community care (clinical and NGO) compliance is 85%. In primary care there is no reporting.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders and to record mental care procedures and interventions is ICD 10 (4 digit) and DSM IV for inpatient and community care. A coding modification is currently underway to ICD 10 (6th edition).

NORWAY

In Norway, the **types of mental health information available on a national level** includes mental morbidity aggregate data, services utilization data, treatment and procedures data, staff data and structure data.

Sources of data that are currently available include hospital administrative data, hospital pharmacy registries, electronic clinical records, national registries/statistics (suicide), national surveys on health care utilization, drug consumption, and morbidity, monitoring/quality improving linked information systems, patient safety/adverse events linked information systems, and specific mental health data information systems. Within the next two years, it is expected that a national survey on continuity of care and a unique patient identifier will be available. Other initiatives in terms of mental health care monitoring include:

- Data from psychologists and psychiatrists in the private sector

- As part of the Norwegian "Escalation Plan for Psychiatric Health":

    – Census of all patients under treatment under specialist mental health services

    – Community mental health services and municipalities expenditures

    – Survey on user experience and patient satisfaction with mental health care services.

Data that is regularly collected and currently reported includes waiting times for consultation, involuntary admissions, data on patients with schizophrenia and ADHD having an individual plan of care, duration of untreated psychoses, patient-satisfaction in inpatient and outpatient care and primary care physician satisfaction with psychiatric services.

Main purpose and audience: The main users/audience for information provided in the data sources includes government, regional health authorities, local health authorities, heads of clinical departments, and public audience/citizens. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Decision making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level based on the needs of their main uses; it involves formal consultation with main users. There is a feedback mechanism targeting the people responsible for data input in terms of ways of improving the quality of the data or simplifying the process of data collection; the feedback also targets the people responsible for data

input in terms of the resulting indicators. Senior doctors, junior doctors, nurses, administrative staff, and other workers are responsible for generating the data across all four domains of care. Data collection and reporting is regarded at the generation point as a regular routine activity that allows professionals to put in a wider perspective of their daily work; it adds an additional burden but it is regarded as a price to pay to promote continuous improvement.

Degree of integration of information across different levels of care provision and settings: Patients can be tracked inside each clinical setting but not across them even for the same level of care provision. Mental health care data sources are a separate specific set of the information system which does not cover primary care.

Compliance and reporting cultures: Compliance and reporting for inpatient care is 80%, 89% in adult outpatient care, and 85% in children and adolescent outpatient care.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders is ICD 10 (3 digit) and ICD 10 (4 digit) in inpatient and outpatient care and ICPC in primary care. The coding used to record mental care procedures and interventions is ICD 10 (3 digit) and ICD 10 (4 digit) in inpatient and outpatient care, ICPC in primary care and no coding is used for community care. Two coding modification are currently underway – the development of procedural codes and the development of case-mix systems for mental health care, which are being considered for implementation in the reimbursement data system.

PORTUGAL

In Portugal, **types of mental health information available on a national level** include mental morbidity aggregate data, services utilization data, staff data and structure data.

The **sources of data that are currently available** include administrative hospital data, hospital pharmacy registries, national registries/statistics, and national surveys on health care utilization, on drug consumption, on morbidity, and on continuity of care. These data sources are felt to be useful for mental health care quality assessment. Within the next twenty-four months, specific mental health data information systems and a unique patient identifier will be available.

There is **regular collection of mental health data**, which is used for national and regional service and statistical purposes. The information collected includes number of beds, admission, discharges, length of stay, day-hospital attendance, number of day-hospital sessions, number of outpatient visits and home care visits.

Main purpose and audience: The main users/audience for the information provided in the data sources are government, regional health authorities, health service managers, heads of clinical departments, clinical researchers, and clinical health professionals. Government and health authorities use the data for administrative and statistical purposes. Health service managers and clinical department heads use it for the same purposes, but they also use it for clinical purposes. Clinical researchers and health professionals use pharmacy, statistical and clinical data. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: In Portugal, there is a managerial structure for mental health information which makes decision on data collected and indicators reported based on the needs of their main users. There is no established mechanism of feedback to the people involved in the data generation.

Degree of integration of information across different levels of care provision and settings: There is some degree of integration of information systems across different levels of mental health care provision and settings. Patients can be tracked inside some of the levels of care but not across them. The use of

services can be tracked within inpatient, outpatient and day-patient units. Administrative data, pharmacy registries, and national statistics/surveys data include both mental and physical health care related information in the same set.

Compliance and reporting cultures: Compliance and reporting for inpatient care is 100% and 90% for outpatient care; in primary care, only 10% is reported and no reporting is occurring in community care. There are a number of professionals including senior and junior doctors, nurses, and administrative staff involved in generating the data. Nurses and administrative staff are responsible for inpatient care and senior and junior doctors, and administrative staff for outpatient care. Data collection is regarded as a device for professionals to put in a wider perspective their daily work but it is considered a controversial issue that adds an additional burden.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding systems applied to record diagnosis of mental disorders include ICD 9 in inpatient and outpatient care and ICPC for primary care. There is no coding for community care. For the recording of mental care procedures and interventions ICD 9 along with NHS tables of procedures coding is used in inpatient and outpatient care. ICPC is used in primary care and there is no coding for community care. There is currently a reform underway (2007-2008) that includes a redefinition of the mental health information system, and a migration to ICD 10, although the requirements of DRG payment system continue to rely on ICD 9 CM coding support.

THE SLOVAK REPUBLIC

In the Slovak Republic, **types of mental health information on a nationally representative basis** is available for mortality among persons with severe mental disorders, mental morbidity aggregate and individual data, mental and physical morbidity individual data, service utilization data, treatment and procedures data, staff and structure data.

The **sources of data currently available** include administrative hospitals and primary care data, and hospital pharmacy registries. A number of national registries exist which contain statistics for severe mental disease/suicide, health care utilization, drug consumption, morbidity, and care continuity. There are two linked information systems - a monitoring/quality improvement system and a patient safety/adverse event system. Of the data that is available, only the administrative data related to hospital and primary care is thought to be useful for mental health care quality assessment. In the next two years, it is anticipated that electronic clinical records system will be in place, which will be useful for quality assessment.

Mental health care data is regularly collected and currently reported in a number of domains. A record of every patient hospitalised in a psychiatric in-patient facility is currently collected and forwarded on a monthly basis to the NNCZI. This is then used by the Ministry of Health for statistical findings and for management purposes.

A number of reports are produced annually that provide data on mental health care. These reports are used for statistical and demographic reporting, and for management purposes within various government ministries such as the Ministry of Health, Ministry of Labour, and the Ministry of Social Affairs and Family. They include psychiatric outpatient and inpatient facilities, and intentional self-injury.

The Slovak Republic is involved in a number of international health initiatives. For the last decade, the National Health Information Centre has cooperated with the EMCDDA, developing a national information system on drug addiction. Information on drug utilization is collected as part of this program and is used for monitoring and management of health services. An indicator designed to assess treatment demand collects information on patients with addictions treated in various health care establishments across the country. A pilot program on case management is underway in the district of Michalovce /East-Slovak.

Main purpose and audience: There are multiple users/audience of the data including government, insurers, regional and local health authorities, managers, heads of clinical departments, clinical researchers, clinical health professionals, and the public. The type of mental health information that users utilize varies according to their domain of work. A network comprised of psychiatric care institutions collects and makes available data on drug and alcohol addiction, workplace issues, treatment type, number of patients, primary diagnosis, age groups, social status, employment, education, family status, and discharge information. A mechanism exists where government, health professionals, organizations, and researchers can request and access specific information. Information that can be of use to the public is made available on the internet and through publications. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Data collection and reporting is a regular routine activity that is seen as a mechanism to develop a wider perspective among professionals and to promote improvements. Decision making about the data to be included in the reporting systems and indicators to be generated are made at a managerial level and based on the needs of the main users. The senior doctor or head of services is responsible for overseeing the generation of data that can feed into the existing data sources. This process involves formal consultation with users and with people at the data input end. There is a regular mechanism available for feedback, which targets the people responsible for data input in terms of ways of improving the quality of the data or simplifying the process of data collection and targets.

Degree of integration of information across different levels of care provision and settings: Patients can be tracked inside some of the levels of care but not across them. Some of the data sources available include both mental health and physical health care related information in the same data set.

Compliance and reporting cultures: Compliance and reporting for inpatient care is 100%, and 90% for outpatient care and primary care.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system generally applied to record diagnosis of mental disorders is ICD 10 (3 digit) in inpatient care. ICD 10 (4 digit) is also used in inpatient, outpatient and primary care. There are no foreseen modifications of the coding system. For procedures and interventions ICD 10 (3 digit) is used for outpatient and primary care and ICD 10 (4 digit) for inpatient care.

SOUTH KOREA

In South Korea, **types of mental health information available on a national level** includes mortality among persons with severe mental disorders, mental morbidity aggregate data, services utilization data, treatment and procedures, staff data and structure data. Individual data on mental morbidity linked or not to physical morbidity individual data is not available.

Sources of data that are currently available includes administrative hospital, primary care and community centres data, national surveys on health care utilization and morbidity; electronic clinical records and a unique patient identifier are available.

Mental health care data that is regularly collected includes morbidity of psychiatric illness via the Epidemiological Survey of Psychiatric illness, data on mortality rates due to psychiatric disease and suicide, and statistics on medical service.

Main purpose and audience: The main users/audience for the information provided in the data sources includes the government, local health authorities, and insurers. Government and local health authorities use the community care data while insurers use inpatient, outpatient and primary care sources.

Annex 1 provides a summary of the sources of data and the main uses of the data systems. Administrative data is not currently useful for quality monitoring because it does not include enough clinical items.

Design Responsibility and Data Imputation: Decision-making responsibility concerning the inclusion of data items in the reporting systems and the indicators to be generated involves consultation with main users only in community care. There is no established mechanism of feedback to the people involved in data generation. Administrative staff is solely in charge of generating the data that feeds into existing data sources across the four domains of care. Data collection and reporting is regarded at the generation point mainly as a regular routine activity and a mechanism of control allowing improvements to be encouraged.

Degree of integration of information across different levels of care provision and settings: Patients can be tracked inside some of the levels of care including inpatient, outpatient, and primary care but not across them. Some of the different data sources available include both mental health care and physical health care related information in the same set.

Compliance and reporting cultures: Compliance and reporting for outpatient and primary care collectively is 95.3%. Underreporting and lack of compliance to standards for data across information systems is a concern in inpatient care where only 5% is reported.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders and procedures and interventions is ICD 10 (4 digit) in inpatient, outpatient and primary care. There is currently no coding used for community care. There are no coding modifications anticipated.

SPAIN

In Spain, the **types of mental health information available on a national level** include service utilization data, treatment and procedures data, staff data and structure data.

The **sources of data that are currently available** include hospital administrative data (though this excludes psychiatric and long term hospitals); Administrative hospital data is used to study unjustified clinical variability. Data that is regularly collected and currently reported includes a hospital discharge register (CMBD) collected annually. National surveys on health care utilization, drug consumption, and morbidity are available; the national morbidity survey is collected biannually and the European "health barometer" (consumer satisfaction and use of services) is collected annually. There are also several national registries/statistics on mortality and morbidity. A unique patient identifier is in place. Electronic clinical records are only available at the regional level. Primary care and Community centres administrative data is only available at the regional level; and the same holds for patient safety/adverse events linked information systems.

Main purpose and audience: The main users/audience for information provided in the data sources includes government, regional health authorities, health services managers, heads of clinical departments, clinical researchers, clinical health professionals, and the public. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Decision-making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level based on the needs of the main users and in consultation with them. Data collection and reporting is regarded as a routine activity, a device for professionals to put a wider perspective on their daily work and a price to pay to promote continuous improvement. Senior doctors, junior doctors, nurses, and psychologists are in charge of generating the data that feeds into existing data sources in inpatient care.

Degree of integration of information across different levels of care provision and settings: There are regional variations regarding the degree of integration of information systems across different levels of care provision and settings. In some regions there are cumulative case registries and patients can be tracked all through their mental health care pathway; in other regions patients can be tracked inside each of the levels of care but not across them and also there are regions where patients can be tracked inside some of the levels of care but not across them. Most of the different data sources available include both mental health care and physical health care related information in the same set.

Compliance and reporting cultures: Compliance and reporting for inpatient care is 100%.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders is ICD 9 and ICD 9-CM in inpatient care. ICD9–CM is used to record procedures and interventions in inpatient care. A modification is currently underway to ICD 10.

SWEDEN

In Sweden **types of mental health information available on a national level** includes mortality among persons with severe mental disorders, aggregate mental morbidity and data on individual mental and physical morbidity; data on services utilization, staff and structure is also available.

The **sources of data that are currently available** and can be used for some types of quality assessment include hospital administrative data, hospital pharmacy registries, national registries/statistics, and a national survey on health care utilization. National surveys on continuity of care are available, but only for hospital care. A unique patient identifier is also available and is considered useful for quality assessment. Data regularly collected includes diagnosis information which is collected in annual reports on a regular basis and its main use is in health planning and statistics. Data is also regularly collected at the hospital level on length of stay and involuntary admission.

Other initiatives include a register of patients who commit suicide within one month of treatment contact, care costs, the creation of a new register for involuntary care and the development of a national register of quality of care within sub specialties. International activities include the EU mental health indicator activities project.

Main purpose and audience: The main users/audience for the information provided in the data sources includes government, regional and local health authorities, insurers, and heads of clinical departments, clinical researchers, clinical health professionals, and the public. All these users make use of reports, but health service managers, heads of clinical department and other health professionals, further use statistics. Clinical researchers use statistics and data files and the public makes use of publications in the media. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Decision making responsibility concerning data inclusion in the reporting systems and indicators to be generated are made at a managerial level; it involves formal consultation with main users and with people at the data input/generation point. The feedback to the generation point targets the people responsible for data input in terms of ways of improving the quality of the data or simplifying the process of data collection; the feedback to the people responsible for data input is shaped to communicate the changes induced by the resulting indicators. Senior doctors, junior doctors and administrative staff are in charge of generating the data that feeds into existing data sources across all four domains of care. Data reporting is seen as a routine activity, but also as a device for professionals to put in a wider perspective of their daily work, and, thus, regarded as a price to pay to promote continuous improvement. However, it is sometimes regarded as a controversial issue that adds an additional burden of work.

Degree of integration of information across different levels of care provision and settings: Patients can only be tracked through inpatient care. For psychiatric hospital care, the data source includes both mental health care and physical health care related information in the same set.

Compliance and reporting cultures: Compliance and reporting for inpatient care is 95%, 30% for outpatient care and unknown for primary and community care.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: ICD 10 (3 digit) is the coding system applied to record both the diagnosis and the procedures and interventions across the four domains of care. A coding modification is currently underway with the implementation of a new register for involuntary care.

SWITZERLAND

In Switzerland, the **types of mental health information available on a national level** include services utilization data, treatment and procedures data, staff data, and structure data.

The **sources of data that are currently available** includes hospital and primary care administrative data, electronic clinical records and national surveys on health care utilization, on drug consumption and on morbidity. A unique patient identifier is in place. Within the next two years, it is expected that a monitoring/quality improving linked information systems will be available. There are also some pilot projects going on in cantonal and hospital level but the details are not available.

Main purpose and audience: The main users/audience for the information provided in the data sources are government, regional health authorities, heads of clinical departments, clinical researchers, and clinical health professionals. Government and regional and local health authorities use reports while health service managers, heads of clinical department and clinical health professionals tend to use both reports and statistics; clinical researchers make use of statistics and data files; the public uses mainly publications in the media. Annex 1 provides a summary of the sources of data and the main uses of the data systems.

Design Responsibility and Data Imputation: Data collection is regarded as a routine activity. Decision-making concerning data inclusion in the reporting systems and indicators to be generated involve formal consultation with main users. There is a feedback mechanism and it is intended to provide the people generating the data with guidance on ways to improve the quality of the data or to simplify the process of data collection; it also aims to inform them about the resulting indicators and the organisational changes induced by the resulting indicators. Senior doctors, junior doctors, and administrative staff are in charge of generating the data that feeds into inpatient care.

Degree of integration of information across different levels of care provision and settings: A project will be implemented in 2007/2008 that will allow the tracking of patients all through their mental health care pathway. Most of the different data sources available include both mental health care and physical health care related information in the same set.

Compliance and reporting cultures: Underreporting and lack of compliance to standards for data is not a concern in inpatient care where there is 95% reporting. There is no recording in outpatient and primary care.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis and procedures and interventions is ICD 10 (4 digit) in inpatient care. No coding is used for outpatient, primary and community care. There are no coding modifications underway.

UNITED STATES

In the United States, the **types of data on mental health information available on a national level** includes mental morbidity aggregate data (suicide), individual data on mental morbidity (suicide attempts), treatment and procedures data, staff data and structure data.

Sources of data that are currently available include hospital administrative data, national registries/statistics, national surveys on health care utilization, on drug consumption, and on morbidity, and specific mental health data information systems. The data currently available are not unusable for quality assessment since requires much work to develop and apply accepted standards of care with which these data could possibly be used. Data that is regularly collected and currently reported includes treatment for depression, treatment for Mental Health Problems, treatment for a Substance Use Problem and unmet Need for Treatment for Mental Health Problems. Data is also collected on a minimally adequate mental health treatment for those with DSM-IV disorder in the past 12 months. The Health Plan Employer Data and Information Set (HEDIS), is a set of performance measures voluntarily reported by the managed care industry, and was developed and maintained by the National Committee for Quality Assurance (NCQA). The State of Health Care Quality report is now produced annually by NCQA to monitor and report on performance trends over time, track variations in patterns of care and provide recommendations for future quality improvement. HEDIS was designed to allow consumers to compare individual specific health plan performance to other plans and to national or regional benchmarks. Comparability among the health plans is assured by the standard specification of measures and auditing of results. The mental health quality of care measure in HEDIS concerns specified standards of care for antidepressant medication management relating to (1) optimal practitioner contacts for medication management (2) effective acute phase treatment and (3) effective continuous phase treatment. The data are not nationally representative but increasingly non-managed care health plans are finding it advantageous to participate.

Main purpose and audience: The main users/audience for the information provided in the data sources is the government, insurers, health service managers, clinical researchers and clinical health professionals and the public.

Design Responsibility and Data Imputation: Decision making concerning data inclusion in the reporting systems and indicators to be generated corresponds to the managerial level; it is based on the needs of the main users and involves formal consultation with main users and with people at the data input/generation point. There is no regular established feedback mechanism. The feedback that does occur targets the people responsible for data input in terms of ways of improving the quality of the data or simplifying the process of data collection.

Degree of integration of information across different levels of care provision and settings: Some of the different data sources available include both mental health care and physical health care related information in the same set for comparing mental and physical conditions but not for linking records. Mental health care data sources are a separate specific set of the information system and correlates of mental health are usually analyzed using separate mental health data systems developed for the specific purpose of informing policymakers, health professionals, and provider communities.

Compliance and reporting cultures: In inpatient and outpatient care, 80% of total activity is reported at the national level. Because of the stigma associated with mental health conditions and the reluctance of some insurers to pay for mental health care in the United States it is estimated that approximately 80% of the real mental health treatment cases are actually recorded as such.

Coding systems for diagnosis and for procedures and foreseen changes/improvements: The coding system applied to record diagnosis of mental disorders is ICD 9 CM and DSM IV for inpatient and outpatient care. The coding used to record mental care procedures and interventions is ICD 9-CM in inpatient care using the AHRQ's Clinical Classification Software tool, which clusters ICD 9 -CM

diagnosis, and procedure codes into manageable clinically meaningful categories. ICD 9-CM is used for outpatient and primary care. There are no upcoming coding modifications.

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