

Mental Health Care System and Mental Health Expenditures in the Czech Republic

Martin Dlouhy^{1*}

¹Ph.D., Department of Econometrics, University of Economics, Prague, Czech Republic

Abstract

Background: Although the mental health care is a substantial component of the health system in the Czech Republic, there is a lack of information and research on mental health expenditures. Determining the level and profile of mental health expenditures is the first step in achieving awareness of the cost of mental illness to society.

Aims of the Study: To describe the mental health care financing and delivery system in the Czech Republic and to estimate the mental health expenditures in 2001. The paper examines expenditures with regard to structure by type of service, relative share of total health expenditures, and relative share of the gross domestic product. It also makes international comparisons of mental health expenditures between the Czech Republic and other countries.

Methods: The data discussed in this study come from the Institute of Health Information and Statistics of the Czech Republic and from the General Health Insurance Fund of the Czech Republic. Mental health expenditures are defined as expenditures on services for patients with primary or first-listed diagnoses from Chapter V, Mental and Behavioural Disorders (F00-F99), of the Tenth Revision of International Classification of Diseases (ICD-10). Different methods of allocation are used for various types of services. In addition, expenditures of sickness insurance related to mental illness are also estimated.

Results: Mental illness is diagnosed and treated in about 4% of the population. The share of mental illness on the total morbidity in the population is approximately 2%. The share of mental health expenditures on both the total health expenditures (3.54%) and the gross domestic product (0.26%) is low when compared to levels in other developed countries. Psychiatric hospitals consume 35.6% of mental health expenditures; prescribed drugs and medical aid consume 33.2%; specialized outpatient services consume 17.4%; and shares of other services are relatively low.

Implications for Health Care Policy Formulation: First, if the amount of expenditures allocated to mental health can be interpreted as an indicator of the government's commitment to mental health, then, in comparison to other developed countries, mental health has

a low priority in the Czech Republic. Second, the improved availability of data on morbidity and regular analyses of these data are needed and should yield fast and valuable results.

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Introduction

Mental and behavioural disorders are common, affecting more than 25% of all people at some time during their lives. They are universal, affecting people of all countries and societies, individuals at all ages, women and men, the rich and the poor, from urban and rural environments. They have an economic impact on societies and on the quality of life of individuals and families. It has been estimated that as many as 450 million people suffer from mental illness and that four of the six leading causes of years lived with disability are due to mental illness.^{1,2} Under these circumstances it would be a great failure of the health system of any country if it did not know the prevalence of mental illness in its population, its percentage of total morbidity in the population, and its total expenditures on mental illness. This study analyzes these questions as they relate to the Czech Republic.

A study on treated morbidity in the population in 1986 included 130,930 individuals who were physically examined and their diagnoses checked.³ This study was not only the largest but also the last comprehensive one on morbidity in the Czech Republic. It is a surprise if one considers the extensive data that public health insurance funds collect every year. The 1986 study found 2.0 diagnoses per person, from which the share of mental illness was 1.96%. Mental illness was found in 3.9% of individuals. Jaros *et al.*⁴ conducted a study that employed database of all outpatient services reimbursed by the public health insurance funds in 1996. The data included the diagnosis but not the type of provider. The percentage of mental illness in total morbidity found in that study was 1.56%; however, the authors questioned the reliability of their data. Another source of information is the data on outpatient psychiatric consultations.⁵ Psychiatrists provided more than two million outpatient consultations to 375,428 patients in 2001. If we use that number as a rough estimate of the period prevalence of mental illness, we get a prevalence of approximately 3.7% of the population in 2001. According to sickness

* **Correspondence to:** Martin Dlouhy, University of Economics, Department of Econometrics, W. Churchill Sq. 4, 13067 Prague 3, Czech Republic.

Tel.: +420-2-2409 5448

Fax: +420-2-2409 5423

E-mail: dlouhy@vse.cz

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insurance statistics, which supply data on the morbidity of the productive population, the percentage of cases with diagnoses of mental illness of the total number of cases (all diagnoses) was 1.0% in 2001.⁶ The estimates we obtained from different sources and periods are not contradictory. It seems that the prevalence of mental illness and its share in the total morbidity has been relatively stable in the last two decades. Mental illness is diagnosed and treated in about 4% of the population. The percentage of mental illness of the total morbidity in the population is about 2%.

Determining the level and profile of mental health expenditures is the first step in achieving awareness of the cost of mental illness. The amount of financial resources allocated to mental health care can be interpreted as an indicator of the government's commitment to mental health.⁷ For example, in the European Union, the cost of mental health problems is estimated to be between 3% and 4% of the gross domestic product, of which health-care costs account for an average of 2% of the gross domestic product.¹ Although mental health care is a substantial component of health services, there is a lack of both routine statistical sources of information and disease-specific research studies on the financing and costs of mental health care. Unfortunately, estimates of the costs of mental illness are not available for many countries in the world, including the Czech Republic. Researchers in mental health miss information on mental health expenditures because the health systems do not produce disease-specific data on expenditures. Researchers try to fill this information gap by ad hoc cost-of-disease studies, but unfortunately, each study uses different methods. Thus, it is very difficult to make any sensible comparisons among countries or even identify trends in one single country. To make matters worse, reliable information is especially needed in mental health. As Frank and McGuire⁸ stated, mental health economics is like health economics, only more so: uncertainty and variation in treatments are greater; the assumption of patient self-interest behavior is more dubious; response to financial incentives is exacerbated; and the social consequences and external costs of illness are more formidable.

In the Czech Republic, there is available only one study on mental health expenditures,⁹ which estimated the expenditures for the year 1995. Compare that situation, for

example, to mental health research in the United States, where Triplett¹⁰ quotes 26 different single-year estimates of the U.S. mental health expenditures from the period 1954 to 1996. McKusick *et al.*¹¹ and Mark *et al.*¹² carried out the latest estimates of mental health expenditures in the United States. Their research shows a continuous interest in mental health on the part of American health economists, as opposed to the limited information on the subject in the Czech Republic. The objective of this study is first to describe the mental health financing and delivery system and then, therefore, to estimate mental health expenditures in the Czech Republic, their total amount in Czech Koruna (CZK), their structure by type of services, and their percentage of total health expenditures and of the gross domestic product. In addition to mental health expenditures, the expenditures of sickness insurance for mental illness are also estimated. The second objective is to make comparisons of mental health expenditures between the Czech Republic and other countries.

Method

Financing and Delivery

The Czech Republic is a middle-European country with a population of 10,272,503 inhabitants (mid-year estimate for 2001). Health care is financed through a compulsory public health insurance system that replaced a tax-financed system in 1993. Public health insurance funds are public organizations which collect insurance premiums and purchase services from providers. The health insurance market is dominated by the General Health Insurance Fund of the Czech Republic (VZP CR) with an enrolment of 69.5% of the population in 2001.¹³ Another eight health insurance funds enroll the rest of population. **Table 1** shows total health expenditures classified according to the type of financing in 2001 (Euro 1 = CZK 34.08).¹⁴ Public health insurance is the major source of financing in the country, whereas the direct role of the national and local governments and that of private expenditures are low. Total health expenditures made up 7.3% of the gross domestic product in 2001.

Sickness insurance is a part of social insurance

Table 1. Total Health Expenditures, Czech Republic, 2001

Type of Financing	Expenditures in million		Relative Share
	CZK	Euro	
Public Budgets (state and local)	13,960	(410)	8.8%
Public Health Insurance	131,136	(3,848)	82.6%
Private Expenditures	13,629	(400)	8.6%
Total Health Expenditures	158,725	(4,657)	100.0%

Source: Institute of Health Information and Statistics of the Czech Republic.¹⁴

Note: Average exchange rate 2001: Euro 1 = CZK 34.08.

administered by the Czech Social Security Administration, which is a governmental body directed by the Ministry of Labor and Social Affairs. The Administration is in charge of pension insurance (old age or disability) and sickness insurance (sickness benefits, maternity benefits, and family-member-care benefits). Sickness insurance is compulsory for all employees, but it is voluntary for the self-employed. Sickness benefits are used for an insured person who is temporarily unable to work due to illness. Medical certification is needed to claim benefits and the income of the person is taken into account in the calculation of the benefit. Sickness benefits amounted to CZK 25,574 million (Euro 750 million) in 2001.

Mental health care includes outpatient care provided by general practitioners, psychiatrists, and psychologists, as well as inpatient care provided in general hospitals and psychiatric hospitals. It also encompasses day care, emergency anti-alcohol services, alcohol and drug counseling, and crisis intervention services. The key component of mental health care in the country is the outpatient care delivered by psychiatrists in private practice and in outpatient departments of general and psychiatric hospitals. Outpatient care is financed by a fee-for-service system, but with tight ceilings put on the volume of services and expenditures. There is no gate-keeping, so a patient can visit a psychiatrist without a referral from a general practitioner. In 2001, there were 762 outpatient practices in psychiatry, both independent and hospital based, with 589 psychiatrists (in full-time equivalents), which accounted for 5.7 psychiatrists per 100,000 inhabitants.⁵ The number of psychiatrists in the outpatient sector is growing, with 501 psychiatrists in 1996. Psychiatrists in outpatient practices provided 2,149,371 consultations in 2001, which accounted for 21 consultations per 100 inhabitants, or 3,649 consultations per psychiatrist yearly. The consultations were provided to 375,428 patients. The services are highly concentrated in the capital, Prague, where 11.4% of the population lives but 25.1% of consultations is provided. This statistics may be a sign that the health insurance funds failed in the contracting policy. Psychologists and general practitioners are the other two providers that provide outpatient care for patients with mental illness.

Acute inpatient mental health care is delivered in psychiatric departments of general hospitals or in psychiatric hospitals; long-term mental health care is delivered in psychiatric hospitals only. Patients with mental illness are not supposed to be admitted to other long-term care institutions. There were 33 inpatient psychiatric departments in general hospitals, with 1,554 beds (1.5 beds per 10,000 inhabitants) and 142 physicians (in full-time equivalents) in 2001. Psychiatric beds made up 2.3% of total bed capacity in general hospitals. The average length of stay in the psychiatric department was 23.0 days. In 2001, there were 21 psychiatric hospitals with 10,139 beds (9.9 beds per 10,000 inhabitants) and 461 physicians (in full-time equivalents). The average length of stay was 78.6 days.⁵ In 1996, there were 1,420 psychiatric beds in general hospitals and 10,281 beds in psychiatric hospitals, so inpatient capacities appear relatively stable. The reimbursement of hospital care is based

on a simple per-case system with an expenditure ceiling, which means, in reality, financing by historical budgets.

Data and Methods of Allocation

Estimates of national health expenditures are produced by the Institute of Health Information and Statistics of the Czech Republic (UZIS CR), which is a governmental organization under the Ministry of Health of the Czech Republic. The Institute produces annual estimates of national health expenditures that are derived from a variety of sources and which categorize health expenditures by the type of financing and the type of provider. Estimates of disease-specific expenditures are not provided. In this study, mental health expenditures are defined as expenditures on services for patients with primary or first-listed diagnoses from Chapter V, Mental and Behavioural Disorders (F00-F99), of the Tenth Revision of International Statistical Classification of Diseases and Related Health Problems (ICD-10). Although it is known that individuals with comorbidities cost more, the contribution of comorbidities to health expenditures is ignored. The problem of this limitation extends far beyond this type of analysis. We exclude expenditures on illnesses that are partially a consequence of mental health conditions (for example, cirrhosis of the liver as a consequence of alcohol dependence). In an ideal case, the estimates of mental health expenditures should be compatible with the official figures produced by national health statistics, and the method of allocation should be general and simple and should allow for regular yearly estimates. Unfortunately, the national health information systems are not designed for this type of research, and many trade-offs have to be made.

From nine Czech health insurance funds, the General Health Insurance Funds of the Czech Republic is the best source of information on the public health insurance system. The Fund produces various analytical studies published in its own bulletin "Zpravodaj VZP CR", and it issues annual reports and yearbooks. The enrollment which has reached 69.5% of the population gives a guarantee of representativeness. Using a pragmatic view of these facts, we first estimated the mental health expenditures of the General Health Insurance Fund, and then made a final estimate with an assumption that the other insurance funds had the same structure of expenditures. Mental health expenditures from public budgets and private expenditures were not allocated due to the lack of disease-specific data. The study also excluded social institutions outside the health sector as well as indirect costs of family members, which are the primary caregivers of people with mental illness. The data used in this cost-of-illness study for the allocation of expenditures come from the Institute of Health Information and Statistics of the Czech Republic (UZIS CR) and from the General Health Insurance Fund of the Czech Republic (VZP CR).

Allocation of Expenditures by the Type of Service

The expenditures of General Health Insurance Fund of the Czech Republic according to type of health provider served

as a basis for calculations are presented in **Table 2**. Since the data are classified according to type of health provider, it means that, for example, the category “general hospital” includes all types of services provided by a general hospital. As a multiple-product firm, the hospital provides acute inpatient care as well as primary and specialized outpatient care, long-term care, and medical transport. The separation of institutional and functional aspects of health-care services is essential to health accounting making international comparisons.¹⁵ The Institute of Health Information and Statistics collects data on the structure of hospital incomes and costs, so we know the share of hospital income coming from inpatient care and makes up 52.26% of hospital income.¹⁶ The national data on the hospital admissions⁶ classify 1.45% of patients within Chapter V, Mental and Behavioral Disorders, of ICD-10. The allocation per case estimates that 0.77% of hospital income comes from inpatient care of patients with mental illness. Hospital income was preferred to hospital cost in the calculations on the grounds that hospital income methodologically corresponds with the expenditures of a health insurance fund. An allocation per day could be used as an alternative method of allocation. A DRG system, which is under development, could provide better estimates in the future. The ICD-10 codes for all admissions in specialized hospitals, including psychiatric ones, are also available nationally.¹⁷ The allocation per case is used to calculate the share of mental health with an assumption that a share calculated from the national data is identical to that of the population enrolled in the General Health Insurance Fund of the Czech Republic. National data on the ICD-10 codes for admissions in the long-term care institutions, which are also available, show that no patient with a mental or behavioral disorder (F00-F99) as a first-listed diagnosis was hospitalized in these facilities in 2001.¹⁷ This finding coincides with the principle that patients with mental illness should not be admitted to these institutions.

Specialized outpatient care is reimbursed by the fee-for-service system. The List of Services sets the relative point values for each service, whereas the monetary value of a point is agreed upon nationally between health insurance funds and health providers. For the outpatient mental health care provided by psychiatrists and psychologists in both private practices and outpatient departments of hospitals, the number of services in relative point values is known.¹⁸ The monetary value of point was CZK 1 (Euro 0.03) in the year 2001 (Bulletins of the Ministry of Health, Nos. 13/2000 and 6/2001), so the expenditures could be estimated by a simple multiplication. Note that we calculated the expenditures on outpatient mental health care by the type of service; thus, the number cannot be compared with the total expenditures of the General Health Insurance Fund on specialized outpatient care classified by the type of provider (**Table 2**).

General practitioners are paid by capitation. Unfortunately, the capitation payment system does not provide detailed information on the practitioners’ workloads and the diagnoses of patients they treat. We assume that a general practitioner is in the best position of all other physicians to see the pattern of morbidity in the population. Therefore, we

used the share of mental illness in the total morbidity of the population as a proxy for estimating the share of work devoted to mental health care in a general practice. For a rough estimate, we used the value 1.96% from the study of UZIS CR.³ As previously discussed, the share of mental illness in total morbidity is relatively stable, so using older but reliable estimates seemed reasonable. The monetary value of drugs and medical aids prescribed by general practitioners is available and, similarly, 1.96% of it is allocated to mental health.

For expenditure categories, “balneology” and “drugs and medical aids prescribed by specialists,” mental health expenditures are directly available.¹⁸ In the category “dental care,” it is assumed that no mental health care is provided. For category “medical emergency services,” the total number of emergency interventions (e.g., ambulance rides, helicopter flights) and the causes of interventions are known at the national level.⁶ According to the statistics, 4.28% of interventions were provided for mental patients or drug addicts. Again, we suppose that the same pattern holds for the General Health Insurance Fund and we allocate the expenditures per intervention. Detailed information on the categories of convalescent homes, medical transport, services provided for patients abroad, and services classified as “other services” was not found. Those services are not allocated, but their percentages of the total expenditures are negligible (2%).

In the sickness insurance system, there were 84.9 cases notified per 100 insured persons with an average duration of 28.9 days in 2001. There were 1.02 cases per 100 insured persons classified as having mental illness, with an average duration of 55.8 days. These numbers mean that the period prevalence of mental illness in the productive population is 1.0%, and that 2.46% of days paid by the sickness insurance due to inability to work were caused by mental illness. The percentage of mental illness is relatively low, as respiratory diseases accounted for nearly half of the causes of inability to work. Sickness benefits also depend on the income of the insured person, but the calculation assumed that mental illness was spread equally among various income groups. The total sickness benefits amounted to CZK 25,574 million (Euro 750 million) in 2001, from which CZK 628 million (Euro 18 million) is estimated by a per-day allocation as the expenditures on mental illness.

Results and Discussion

The number of persons with diagnosed and treated mental illness is about 4% of the population. The share of mental illness on the total morbidity in population is about 2%. It seems that the prevalence of mental illness and its share of total morbidity has been relatively stable during last two decades.

We were able to allocate 98% of total health expenditures. The mental health expenditures of the General Health Insurance Fund of the Czech Republic (**Table 2**) were estimated to be CZK 3,169 million (Euro 93 million). The total health expenditures of the Fund, excluding

Table 2. Mental Health Expenditures of the General Health Insurance Fund of the Czech Republic, 2001.

Type of Provider	Expenditures by Type of Provider		Allocation Method	Mental Health Expenditures		
	CZK Million	Euro Million		CZK Million	Euro Million	Percentage of Total Mental Health Exp.
Dental care	5,062	(149)	No mental health care assumed.	0	(0)	0.00%
General practitioners	4,359	(128)	Morbidity in population.	85	(2.5)	2.70%
Specialized outpatient care	9,282	(272)	The number of points claimed by psychiatrists and psychologists is multiplied by the monetary value of point.	552	(16)	17.43%
General hospitals	39,805	(1,168)	Per case. Admissions classified F00-F99 are multiplied by the share of hospital income from inpatient care (52.26%).	305	(9.0)	9.62%
Specialized hospitals, (incl. psychiatric hospitals)	2,673	(78)	Per case. Admissions classified F00-F99 made up 42.26%.	1,130	(33)	35.64%
Long-term care institutions	2,340	(69)	No admission within F00-F99 as a first-listed diagnosis.	0	(0)	0.00%
Balnology	1,817	(53)	Mental health expenditures available.	19	(0.6)	0.61%
Convalescent homes	61	(1.8)	Not allocated.	0	(0)	0.00%
Medical transport	951	(28)	Not allocated.	0	(0)	0.00%
Medical emergency service	571	(17)	Per intervention.	24	(0.7)	0.77%
Prescription drugs and medical aid	21,786	(639)	Prescriptions of outpatient psychiatrists and general practitioners.	1,053	(31)	33.23%
Treatment abroad	7	(0.2)	Not allocated.	0	(0)	0.00%
Other	778	(23)	Not allocated.	0	(0)	0.00%
Total expenditures	89,492	(2,626)	Not applicable.	3,169	(93)	100.00%

Source: Institute of Health Information and Statistics,⁶ and elaboration by the author.

Note: Average exchange rate 2001: Euro 1 = CZK 34.08.

administrative costs, private travel insurance, and some other costs, reached CZK 89,492 million (Euro 2,626 million) in 2001. The share of mental health expenditures is thus 3.54%. Using this percentage to allocate all expenditures of health insurance funds (CZK 131,136 millions; Euro 3,848 million, including administrative and other costs, we found that mental health expenditures from public health insurance would be CZK 4,644 million (Euro 136 million). To estimate the share of mental health expenditures of the gross domestic product, we further assumed that the same distribution of disease expenditures holds for public budgets and out-of-pocket payments, although we are aware that it is a major assumption. Mental health expenditures were, in this case, CZK 5,621 million (Euro 165 million). This is 0.258% of the gross domestic product. Adding the sickness insurance expenditures on mental health, you got 0.287% of the gross domestic product. Approximately one-third of total mental health expenditures (35.6%) was spent on care in psychiatric hospitals; one third (33.2%) was spent on drugs and medical aids; specialized ambulatory care consumed 17.4% of mental health expenditures; and relative shares of other services were low.

Skoda *et al.*⁹ found that mental health consumed 2.52% of health expenditures of the General Health Insurance Fund of the Czech Republic in 1995. Of that amount, 18% was spent on outpatient care and 82% on inpatient care. However, the study concentrated only on core mental health services (psychiatry, psychology) and completely excluded all other types of health services (e.g., general practice or drugs), and it therefore underestimated mental health expenditures. The results of the study cannot be considered as a complete estimate of mental health expenditures, and consequently, the results of our study have to be higher.

International comparisons of disease-specific expenditures are difficult, as studies employ different methods and definitions and face many country-specific issues. Nevertheless, international comparisons can offer basic benchmarks and trends over time. Hodgson and Cohen¹⁹ found that 9% of allocated personal health expenditures in the United States in 1995 were for mental disorders. Mental health expenditures were in third place, after expenditures on circulatory and digestive diseases. Mark *et al.*¹² estimated that mental health expenditures made up 7.8% of total personal health care and government public health spending in the United States in 1997. About one-third of mental health expenditures were spent on hospital care. Triplet¹⁰ quoted the results from other studies, which estimated the mental health expenditures in England, for 1992/93, as 16.6% of net public expenditure; in Canada, for 1993, as 11.4% of total direct health care costs, and in Australia, 1993/94, as 8.4% of total health system costs. Meering *et al.*²⁰ analyzed health-care costs in the Netherlands, for 1994, and estimated that all mental disorders covered 28.4% of the health-care budget that could be allocated to diagnostic groups.

The estimate of mental health expenditures in the Czech Republic is low in comparison to the expenditures above-mentioned developed countries. The changes in allocation formulas do not change this general finding. Three possible

explanations account for such low mental health expenditures in the Czech Republic. The first explanation is that people with mental illness are overlooked and marginalized by the health system and also by the society as a whole. Stigma prevents people to seek mental services, or if they seek such services, they urge physicians not to use codes for mental illness. If the amount of expenditures allocated to mental health can be interpreted as an indicator of government's commitment to mental health, then, in comparison to other developed countries, mental health has a low priority in the Czech Republic. The second explanation lies in different definitions and, above all, in different price levels. The third explanation assumes that we underestimated the role of general practitioners in mental health. General practitioners diagnose and treat some mental illnesses (e.g., dementia, depression), which are thus not treated by psychiatrists. The allocation based on the morbidity, which was used in this study, underestimated expenditures in this expenditure category.

International comparisons of the structure of mental health expenditures by the type of service are, due to varying definitions, even more problematic. For example, the main difference in the structure of mental health expenditures in the Czech Republic, in comparison to those structures estimated in U.S. studies,^{12,18} lies in the relatively high expenditures on prescription drugs. In the Czech Republic, the share of prescription drugs and medical devices made up one-third of mental health expenditures; meanwhile, both U.S. studies reported values less than 10%. This finding does not necessarily mean a dissimilarity in the real structure of services; rather, it can be explained to a large extent by the different definitions and price levels of the two countries. For example, the price of labor is relatively much lower in the Czech Republic (paid in domestic prices) in comparison to the price of drugs (paid in international prices). Therefore, prescription drugs made up a larger share of the mental health expenditure in the Czech Republic than it did in the U.S.A.

We found that the estimation of mental health expenditures is possible only if some strong assumptions are made in the process of allocation. The databases of health insurance funds are potentially very rich information resources; nevertheless, these resources are not used for cost-of-illness studies. Improved availability of data on morbidity and ongoing analyses of these data are needed and should yield fast and valuable results. It is also important to understand that mental health expenditures and sickness benefits for people with mental illness are only the tip of the iceberg. Patel and Knapp²¹ pointed out that, in England, the costs of mental illness outside the health sector were almost seven times higher than the costs of the National Health Service. The issue of indirect costs of mental illness has not been systematically addressed in the Czech Republic at all.

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