

## Inpatient Care for Elderly Psychiatric Patients

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### Abstract

**Background:** The mental healthcare reform and the reduction of overall hospital capacity in Russia has caused a shortage of beds in psychiatric inpatient institutions. However, the high unmet need for inpatient psychiatric care among elderly patients is well-recognized. In this regard it became necessary to evaluate the effect of the mentioned reform on inpatient care for this patient group.

**Goal of the Research:** To examine the possibilities of utilizing the diminishing bed fund in psychiatric care for elderly patients.

**Materials and Methods:** This study is based on the data from the reports produced by Moscow psychiatric hospital #13 on treated patients older than 60 in 2016 - 2017. Additionally, clinic-epidemiological research of a 20% sample of inpatients has been conducted.

**Results:** It was demonstrated that despite the reduction of the bed fund in 2017, quantitative and age-sex composition of the group of treated patients older than 60 did not differ from the similar group of patients treated in 2016. The study has shown that this appeared to be possible due to reduction of length of stay in the hospital (by 10% on average) as well as due to a decreasing number of patient re-admissions (from 43,9% in 2016 to 35,4% in 2017). It is also important to mention that in 1/3 of the cases the hospitalizations of elderly patients were due to social problems. The results of the clinic-epidemiological study which confirmed clinical accuracy of the reported data, revealed that the percentage of elderly patients hospitalized for affective disorders is extremely low which does not correspond to known data on the increase in the frequency of depression in the old age. Furthermore, the study revealed a significant number of schizophrenia cases with notably late onset that again raises a question about the age of onset specific to schizophrenia.

**Conclusion:** The results of the study indicate the necessity for continued research (including economical) in order to optimize the functioning of the city psychiatric hospitals.

**Keywords:** *Late Age; Psychiatric Care; Mental Disorders*

### Introduction

It is well known that during the last few years there was a steady growth of the elderly population. In present the number of people aged 65 and make up 14% of Moscow population. It is also stated that general incidence among people aged 61 - 75 is two times higher and in people older than 75 - six times higher than in people of working age. In elderly only 16,7% of men and 18,2% of women consider themselves healthy. The demand for specialized inpatient care (including psychiatric care) in elderly people is 1,5 - 3 times higher than in people of working age. In this light mental healthcare for elderly people becomes the vital challenge for healthcare management. Among mental disorders in geriatric patients dementia is the most important. Dementia is not only the cause of disability but it also becomes a reason for severe social and financial family burden as ill relatives need constant care and treatment [1,2]. Non-organic mental disorders (schizophrenia and related disorders, depression, which is more frequent in elderly) also retain their importance [3].

### Goal of the Research

Considering constant decrease in the number of psychiatric beds in Moscow during the last few years, it is important to find out how the rest of the beds' fund for the elderly mental patients is used now.

### Materials and Methods

The research has been conducted in Moscow psychiatric hospital #13 (further referred to as PH#13). There were more than 2,000 beds in the past and the number of patients treated per year was 14,000, but now there are 700 beds in the hospital, and the number of patients treated per year is twice lower.

We analyzed data on patients  $\geq 60$  years old who have been treated in the hospital in 2016 and 2017. Two data sources served as material: annual reports from hospitals and results of clinic-epidemiological analysis of a 20% sample of patients of the same age. The viability of the latter was dictated by the necessity to receive reliable data on patients' mental state, the reasons for hospitalization, used treatment and its results as well as patients' social characteristics. On the other hand, clinic-epidemiological research allows verifying data from hospital reports.

The main instrument for hospital reports is a "Statistical card of the patient discharged from psychiatric or narcological hospital". This document should be completed by the doctor and it contains 52 items with detailed information about patient's demographic and social characteristics, his previous hospitalizations, diagnosis, dates of admission and discharging, therapy and its outcomes.

A dedicated patient evaluation roadmap was developed for the clinic-epidemiological research, using the vast experience in long-term epidemiological studies of the National Mental Health Centre of Russian Academy of Medical Sciences. A Database in Microsoft Access which contained all items of the mentioned roadmap has been created. All patients have been examined by the group of psychiatrists from PH#13 who possessed sufficient clinical experience and interest in scientific research. In order to provide all participants of the study with remote access to the database we used the Dropbox cloud storage.

### Results and Discussion

It was determined that 6,444 patients with 1,941 people older than 59, were admitted to the PH#13 in 2016. Therefore, the number of elderly makes up 30,1% of all admissions. It is important to emphasize that 592 elderly patients were admitted twice in the same year, so the exact number of individuals of the same age treated in 2016 was 1,349. The significant percentage of these patients (43,9%) was admitted twice during the year. The average duration of hospitalization per patient in this group was 75,8 days.

In 2017 6,437 patients were admitted to PH#13, and 1,861 among them were older than 59. Therefore, the number of elderly patients makes up 28,9% of all admissions. 487 elderly patients were admitted twice at the same year, so number of individuals of the same age treated in 2017 comprised 1,374. The significant percentage of these patients (35,4%) was admitted twice during the year. The average duration of hospitalization per patient in this group was 68,9 days.

The table 1 contains data on elderly patients hospitalized in PH#13 in 2016 and 2017.

The most important point that has caught our attention while comparing the data in table 1 was their similarity. Even absolute numbers were similar, and the differences in age group ratio and gender distribution<sup>1</sup> were minimal. Both contingents also possessed quite similar clinical characteristics (Table 2).

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<sup>1</sup>There were 31,8% men in 2016 and 33,9% in 2017

Age, years	2016						2017					
	Men		Women		Both		Men		Women		Both	
	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%
60 - 64	129	30,1	203	22,1	332	24,6	172	36,9	234	25,8	406	29,6
65 - 69	105	24,5	164	17,8	269	19,9	113	24,2	168	18,5	281	20,4
70 - 74	55	12,8	94	10,2	149	11	49	10,5	98	10,8	147	10,7
75 - 79	80	18,6	178	19,3	258	19,1	62	13,3	153	16,8	215	15,6
80 - 84	34	7,9	113	12,3	147	10,9	41	8,8	127	14	168	12,2
85 - 89	17	4	121	13,2	138	10,2	21	4,5	94	10,4	115	8,4
90 - 94	5	1,2	39	4,2	44	3,3	7	1,5	29	3,2	36	2,6
95 and older	4	0,9	8	0,9	12	0,9	1	0,2	5	0,5	6	0,4
Total	429	100	920	100	1349	100	466	100	908	100	1374	100

**Table 1:** Patients 60 and older, hospitalized in PH#13 in 2016 and 2017.

	2016		2017	
	Abs	%	Abs	%
Dementia	522	38,70	477	34,72
Alcoholic disorders	115	8,52	136	9,90
Schizophrenia and related disorders	411	30,47	446	32,46
Affective disorders	61	4,52	89	6,48
Other	240	17,79	226	16,45
Total	1349	100,00	1374	100,00

**Table 2:** Main Diagnosis\* in patients 60 and older, hospitalized in 2016 and 2017.

\* All cases of organic dementia in elderly were classified as "Dementia"; and all cases of schizophrenia, schizoaffective psychoses and schizotypal disorder were classified as "Schizophrenia and related disorders".

Almost the same number of patients hospitalized in 2016 and 2017, as well as the similar demographic and clinical characteristics of both groups indicate that the demand for inpatient psychiatric care for elderly psychiatric patients is constant, and this demand is still being met, despite the reduction in the number beds.

From the above data, it can be seen that in 2017 two factors changed: the length of stay in the hospital and the number of repeated hospitalizations. The average duration of hospital stay decreased by approximately 10%: from 75,8 to 68,5 days. The number of rehospitalizations also dwindled significantly: from 43,9% in 2016 to 35,4% in 2017. It is possible to confidently state that just these two factors allowed to hospitalize the same number of patients in 2017.

The analysis of the data acquired during clinic-epidemiological research requires special attention. Table 3 contains basic characteristics of the examined group.

As seen from the data comparison in table 1 and 3 that ratio of men and women is practically the same (in the last group the number of men makes up 30,4%). With regard to the age, the group examined by clinic-epidemiological method, appeared to be older: the patients aged 60 - 64 comprised less than 15%, as the reporting data reveal about a quarter of such cases. It is possible to expect that because of

Age, years	Men		Women		Both	
	Abs	%	Abs	%	Abs	%
60 - 64	19	22,35	21	10,77	40	14,29
65 - 69	26	30,59	36	18,46	62	22,14
70 - 74	9	10,59	28	14,36	37	13,21
75 - 79	14	16,47	43	22,05	57	20,36
80 - 84	9	10,59	34	17,44	43	15,36
85 - 89	3	3,53	24	12,31	27	9,64
90 - 94	4	4,71	8	4,10	12	4,29
95 and older	1	1,18	1	0,51	2	0,71
Total	85	100,00	195	100,00	280	100,00

**Table 3:** Patients 60 and older, data of the clinic-epidemiological research.

this, relative frequency of the main diagnoses in the group examined by clinic-epidemiological method may vary. Table 4 confirms it. In the group in question almost half of the patients had organic dementia whereas in reported data these diagnoses comprise only one third of all cases. Thus, a proportion of functional disorders in the examined group appeared to be lower. It may either indicate insufficient sample representativeness of the group examined by clinic-epidemiological method or mean that the ratio of diagnoses depends on the age differences in the discussed groups.

	Men		Women		Both	
	Abs	%	Abs	%	Abs	%
Dementia	40	47,06	88	45,13	128	45,71
Alcoholic disorders	11	12,94	4	2,05	15	5,36
Schizophrenia and related disorders	12	14,12	61	31,28	73	26,07
Affective disorders	2	2,35	11	5,64	13	4,64
Other	20	23,53	31	15,90	51	18,21
Total	85	100,00	195	100,00	280	100,00

**Table 4:** Main diagnoses in the group of clinic-epidemiological research.

Verification of the expressed assumptions not only confirmed the latter, but also demonstrated almost a complete match between the concrete indicators in hospital reports and the data of clinic-epidemiological research. Corresponding data are provided in the table 5.

	60 - 69		70 - 79		80 and older	
	Report	Epid	Report	Epid	Report	Epid
Dementia	24,6	24,5	67,6	65,9	93,0	80,7
Alcoholic disorders	15,5	8,8	5,2	0,0	0,3	0,0
Schizophrenia and related disorders	50,7	37,3	21,4	20,9	5,3	10,8
Affective disorders	6,2	2,9	4,9	2,2	1,2	1,2
Other	3	26,5	1,0	11,0	0,3	7,2
Total	100,0	100,0	100,0	100,0	100,0	100,0

**Table 5:** Frequency of the main diagnoses in dependence on patients' age (in %) according to the hospital reports and clinic-epidemiological research.

As we see, proportion of the main diagnoses in each age group pretty much coincides both in reports' and epidemiological data. Dependence of these indicators on patients' age looks evident. Particularly illustrative is the analysis of the dynamics of the indicator which reflects frequency of dementia. As it is known dementia may start even before 60. According to the hospital reports, in 2016 13,01% of patients aged 50 - 59 were hospitalized with Alzheimer's disease, which is a rarity for this age group. However, in the next age group (60 - 69 years old) there are 25% patients with dementia. After 70 years 2/3 of hospitalized patients have dementia, and among those older than 80, dementia becomes the only reason for hospitalization. These data clearly illustrate that as the population constantly ages the problem of dementia becomes more and more meaningful.

Table 6 contains nosological structure of hospitalized aged patients with dementia.

	Abs.	%
Alzheimer's disease	141	29,56
Vascular dementia	164	34,38
Other specified dementia*	147	30,82
Dementia non-specified	19	3,98
Light cognitive disorder	3	0,63
Organic amnestic syndrome	3	0,63
Total	477	100,00

**Table 6:** Frequency of dementia in different patients hospitalized in 2017.

\*: Dementia in Pick's disease, Creutzfeldt-Jakob disease, Huntington's disease, Parkinson's disease, HIV diseases, and other specified diseases.

Now we'll move to the analysis of patients with functional mental disorders. For such an analysis data of clinic-epidemiological research have been used.

Analysis of schizophrenia cases included in the data base discussed are of a great interest. Their total number was 73 people (26,1% of the sample). As it was expected, these cases were divided in two groups: with "typical" and late (after 50 years old) onset of the disease. Wherein cases with late onset composed almost third part of the whole group (27 people, 31,7% of the group). And herewith half of them (14 patients) got ill before 60 years old and 13 - after 60, including 4 people with the onset of the disease after 80. We should underline once more that all these patients were examined by the researchers in person, and the majority of them - by the consultants - Professor Rotstein and PhD Ryakhovsky. The data provided certify once more that increase in life expectancy forces to revise notion about the typical age for schizophrenia onset. This issue was discussed in detail in one of our previous articles [4].

Proportion of patients hospitalized with affective disorders was extremely small (4 - 6% of all mentally ill). All of them suffered with depression or anxiety, and mania cases were absent.

As it is known, prevalence of depression is extremely high. By some estimates it reaches 200 cases per 1000 of population and in elderly may even higher [5]. So, it turns out that a very small proportion of patients suffering from depression receives inpatient care.

From this group we have selected cases containing word "depression" in clinical diagnosis or even used as a syndrome. The whole number of such cases made up 39 (5,8% from all examined patients). Only in one case depressive disorder was qualified as "mild". In 12 cases depression was estimated as "moderate", and in 6 cases diagnosis sounded like "Schizophrenia, defective condition, sub-depressive syndrome". There were two cases with diagnosis "Dementia non-specified, with depressive symptoms". The remaining 18 cases (in fact in a half of patients) presence of the severe depression was emphasized, including psychotic symptoms.

In our article "Epidemiology of Depression" [6] we pointed out that during the period of hospital psychiatry (before 1916) prevalence of depression was approximately 1,5 cases per 1000 population (0,15%). We also emphasized that for depression known at that time (the

most severe, called in our article “hospital’s”) prevalence has not changed so far, though the prevalence of depression nowadays reaches up to 20% of population. These data show that contemporary city mental hospital still provides care just for this severe category of patients suffering with depression. It would be possible to explain by the fact that patients with mild depression do not need hospitalization. However, experience of the gerontological department of National Mental Health Centre disproves this assumption: in 2018 the reasons of hospitalization in 45,6% cases were due to the mild depression. In most cases depressive patients were hospitalized for the adjustment of the appropriate therapy due to the therapeutic resistance.

Considering the above it was interesting to analyze the reasons for hospitalization of elderly patients into the PH #13. Clinic-epidemiologic data were used for this analysis. It appeared that the most frequent reason for hospitalization was worsening of mental state (40,36% of all cases). The second in frequency was patients’ helplessness (22,14%), and the third one - being dangerous for themselves or to others (15,0%). The other reasons for hospitalization were requests from relatives or other social problems (10,71%). Other reasons (for example patient’s returning from the general hospital) comprised 5,7% of hospitalizations. And at last in 3,2% cases information was absent. Thus, somewhat more than in a half of cases (58,21%) hospitalization was caused by the real clinical indications (worsening of the condition, danger for themselves or others, necessity in the adequate treatment). In one third of the cases the reasons of hospitalization were not clinical, but social.

## Conclusion

According to the detailed research of D. Melik-Gusseinov [7], a system of psychiatric care of Moscow needs 3,100 beds. The number of officially registered Moscow inhabitants in 2017 comprised 12,331,226 people [8]; by non-official data Moscow population may count 15 million people [9]. For the comparison we may indicate that population of Israel in 2017 was 8,712, i.e. twice less. Wherein this country has 3,500 beds “for mental patients’ hospitalization”. Apart from this there are 24851 beds in geriatric departments, the majority of which (20999) are situated “in the departments of long-term geriatrics (geriatric department for patients who need care and those suffering with amnesia)”, and 3852 beds - “in the departments of active geriatrics (rehabilitation geriatrics, geriatric department for the severe patients, maintenance treatment, subacute geriatrics, long-lasting artificial ventilation, tuberculosis” [10]. As we can see, this system of psychiatric care has rather essential beds fund and clearly defines the purposes of its parts. Situation when with us more than 40% psychiatric beds are used for patients’ care only, looks insufficiently rational. Even that circumstance when number of patients pay for their stay at the hospital does not justify such use of hospital beds. Note by the way that only 60% of patients, hospitalized by social reasons paid for their stay.

It is possible to think that the results of present work indicate on expediency of further research including economic ones. It is quite possible that organizing specialized departments for care of helpless patients may not only vacate psychiatric beds for the treatment and diagnostic care, including depressive patients, but also will prove to be economically justified.

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