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## PUBLIC HEALTH AND HEALTH CARE

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### **Assessment of the quality of medical care provided to patients in a psychiatric hospital**

*I. B. Shikina, D. R. Davidov*

Federal Research Institute for Health Organization  
and Informatics of Ministry of Public Health of Russian Federation,  
11, Dobrolyubova ul., Moscow, 127254, Russian Federation

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Monitoring and evaluation of the quality of medical care provided to patients is essential in any medical specialty, but especially in relation to specialized care in mental health hospitals. The aim of our work is to assess the quality of specialized medical care provided to patients in the psychiatric hospital. We have examined 270 medical records and internal quality control cards of patients hospitalized from 2015 to 2019 in the Psychiatric Clinical Hospital No. 4 of the Moscow Healthcare Department (hereinafter referred to as “PCH No. 4” of MHD). The quality control of the provided medical care was carried out twice with the assessment of each studied section in the range from 0 to 1 point. Thus, it was possible to calculate the overall medical care quality coefficient with a description of the defects found in the provision of medical services. After the first control, quality coefficient appeared to be 0.86 (0.79; 0.91), and after the second one 0.95 (0.92; 0.96). During the second control, which was conducted in 2019, the medical care quality was significantly higher ( $p=0.011$ ) compared to the results of 2015–2018. The total share of detected defects in the medical-diagnostic process in a psychiatric hospital was 40.7% (and was captured in 110 out of 270 cases). The results of our study demonstrate the necessity of medical care internal quality monitoring in a psychiatric hospital, since it contributes not only to the improvement of overall quality of medical treatment, but also to timely detection and reduction of the number of defects in the medical-diagnostic process.

*Keywords:* information about medical care; internal quality control cards; psychiatric hospital.

### **Introduction**

Improving the quality of medical care is a priority task for healthcare development [1–5]. Internal quality control in medical organizations allows to assess the quality of medical care provided to patients and compare its level with previous data by monitoring,

which contributes not only to the timely detection of defects in the medical-diagnostic process but also to the reduction of risks associated with the provision of medical care. Therefore, internal quality control is an essential part of the quality management system of medical care, the purpose of which is to ensure that the medical services provided by a particular medical organization meet the requirements of current legal regulations of the health care system [2; 6–9].

According to the Article 90 of Federal law No. 323-FZ, internal quality control of medical activities was supposed to be carried out in accordance with the procedure established by the head of a medical organization<sup>1</sup>. Hence, there were no universal criteria for internal quality control, which was an obstacle to its full implementation. However, the city of Moscow adopted the Order No. 820 of Moscow Healthcare Department dated 16.08.2013 “on improving the organization of internal quality control and safety of medical activities in medical organizations of the state health system of the city of Moscow” (hereinafter referred to as the Order No. 820 of MHD), which recommended the introduction of internal quality control cards<sup>2</sup>.

In 2019, the Order of the Ministry of Health of the Russian Federation No. 381n dated 07.06.2019 “On approval of the Requirements for the organization and conduct of internal quality control and safety of medical activities” came into force<sup>3</sup>, but the internal quality control was completed by the Order No. 820 of the MHD due to the Order of the PCH No. 4 head physician.

**The aim of our study is** to assess the quality of specialized medical care provided to patients in the psychiatric hospital.

## Methodology

In the psychiatric hospital, 270 medical records and internal quality control cards were analyzed (according to Order No. 820 of the MHD) to identify possible defects in the medical-diagnostic process. The following data was studied: general information about patients, described cases of medical care received, results of the quality examination and additional data. Despite the fact that order No. 820 of the MHD became invalid due to the entry into force of order No. 381 of the Ministry of health of the Russian Federation dated 07.06.2019, filling out, collecting and analyzing internal quality control cards in the PCH No. 4 continued up to the end of the calendar year by the decision of the head physician.

Our research was carried out in 2 stages: 156 (57.8%) and 114 (42.2%) internal quality control cards were analyzed from 2015 to 2018 and in 2019, respectively. Primary medical documentation of the patients was evaluated by the following parameters: complaints and anamnesis, objective examination, diagnostic procedures on the main and concomitant

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<sup>1</sup> Federal Law No. 323-FZ of 21 November 2011 “On the Fundamental of Health Care for Citizens of the Russian Federation” (ed. of 06.03.2019). LAS “ConsultantPlus”. Available at: [http://www.consultant.ru/document/cons\\_doc\\_LAW\\_121895](http://www.consultant.ru/document/cons_doc_LAW_121895) (accessed: 16.12.2020). (In Russian)

<sup>2</sup> Order of the Moscow Healthcare Department of 16.08.2013 № 820 “On improving the organization of internal control of the quality and safety of medical activities in medical organizations of the state healthcare system of the city of Moscow”. LAS “ConsultantPlus”. Available at: <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=MLAW&n=18365907210872744470713> (accessed: 16.12.2020). (In Russian)

<sup>3</sup> Order of the Ministry of Health of Russia №381n. dd. 07.06.2019 “On approval of the requirements for organizing and conducting internal quality control and safety of medical activities”. Available at: <https://www.garant.ru/products/ipo/prime/doc/72589514> (accessed: 17.12.2020). (In Russian)

(clinically significant) diseases, completing the paperwork related to diagnosis of main and concomitant (clinically significant) diseases; medical-prophylactic activities and medical rehabilitation, treatment outcome, and содержание of primary medical documentation.

Internal quality control cards were filled out by medical experts with more than 10 years of relevant experience, engaged in administrative work, and also having the first or highest qualification category and academic degree. The scale of quality coefficients was interpreted as follows: from 0.8 to 1 point for the qualitatively provided medical care; from 0.6 to 0.7 for qualitatively provided care with individual defects that did not lead to deterioration of the patient's health; and from 0.5 for poorly provided medical care. In the second stage of internal quality control experts were also able to leave comments with description of defects in the medical-diagnostic process. After that, the total quality coefficient was calculated as the mean of the quality coefficients for each of the sections of the filled internal quality control card.

At the first stage, 270 medical records and 269 internal quality control cards (99.6%) were evaluated (there was no information in one of 270 cards). At the second stage we evaluated 112 out of 269 internal quality control cards (41.6% of the first). A total of 15,000 cards were filled between 2015 and 2019. For the analysis we selected 270 of them, which was 1.8% of the total, using simple random sampling. Only those cases of diseases were analyzed, which were considered complete according to the requirements of the Order No. 820 of the DZM for inpatient conditions of medical care, cases of repeated hospitalization in the first month after discharge and within three months after discharge of patients were analyzed.

The sample included internal quality control cards for patients aged 30.0 to 51.5 years with the following diseases according to ICD-10 (the number of patients is in absolute numbers, the proportion is in %): 20–29 F — 171 (63.3%); 00–09 F — 40 (14.8%); 30–39 F — 28 (10.4%); 10–19 F — 22 (8.2%); 40–49 F — 3 (1.1%); 70–79 F — 3 (1.1%); 60–69 F — 2 (0.7%); 80–89 F — 1 (0.4%).

Statistical calculations were performed in the SPSS STATISTICS 21.0 program using the median and interquartile range. The groups were compared by applying nonparametric statistics. The level of  $p$ -value  $< 0.05$  was considered as statistically significant one.

## Results

During the first stage of quality control, the median coefficient of quality of medical care ( $n = 269$ ) appeared to be 0.864 (0.792; 0.909), which allows us to judge the satisfactory level of the primary medical documentation.

At the 2<sup>nd</sup> stage, it was revealed that “there is no objective information in the anamnesis from the words of relatives” indicates insufficient interaction of treating doctors with relatives of patients. Comments were systematically omitted, which indicates that there is a formal approach when filling out internal quality control cards by medical experts.

The median quality coefficient at the 2<sup>nd</sup> stage of control ( $n = 112$ ) in the hospital was 0.955 (0.917; 0.958). A detailed description of the identified defects is presented in tables 1–5.

The main defect in describing the section “complaints and medical history” was “there is no objective information from relatives” ( $n = 7$ , 70.0% of responses, 77.8% of observations, provided that the respondent had the opportunity to leave several comments

in the section). In total, medical experts recorded 10 defects in 112 maps (8.9%), which indirectly demonstrates a decent level of description of the section.

*Table 1. Defects identified in the section “diagnostic measures for major and concomitant (clinically significant) diseases” (in absolute numbers, in %)*

Comments in the section	Number of responses	Share, %	Percentage of observations, %*
“the patient receives lithium salts. there is no control of the level of lithium in the blood”	1	3.3	3.4
“there are no medical consultations of individual ‘narrow’ specialists”	10	33.3	34.5
“there were no recommendations on the rehabilitation”	1	3.3	3.4
“not fully implemented” (there is no detailed pathopsychological testing)”	4	13.4	13.8
“there is no inspection by all specialists”	5	16.7	17.2
“not fully implemented”	9	30.0	31.0
Total	30	100.0	103.3

Note: \*the respondent has the opportunity to leave some comments in the section.

*Table 2. Defects identified in the section “making a diagnosis of the main and concomitant (clinically significant) diseases” (in absolute numbers, in %)*

Comments in the section	Number of responses	Share, %	Percentage of valid responses, %
“the major syndrome is not specified”	4	1.5	20.0
“there is no detailed record of the medical commission for changing the diagnosis”	4	1.5	20.0
“medical commission with justification was not carried out”	12	4.4	60.0
Total	20	7.4	100.0
System missed	250	92.6	–
Total	270	100.0	–

Comments of medical experts to the section “objective examination” were extremely rare, probably because in 99.3% of cases this section was not properly filled in.

In a third of the exposed cases the defect in the section “diagnostic measures for the main and concomitant (clinically significant) diseases” was “there are no medical consultations of individual ‘narrow’ specialists” (n = 10, which is 33.3% of responses and 34.5% of observations). In 17.2% of internal quality control cards, there was no medical examination by all specialists. It should also be noted that there is no standardization of defects:

from the narrow defect “no control of lithium in the blood” to the general and vague defect “not fully implemented” (table 1).

*Table 3. Defects detected at the 2<sup>nd</sup> stage of quality control in the section “treatment and prevention measures, medical rehabilitation” (in absolute numbers, in %)*

Comments in the section	Number of responses	Share. %	Percentage of valid responses. %
“prescribing neuroleptics without correction at discharge”	9	3.3	21.4
“rehabilitation activities are not completed”	3	1.1	7.2
“do not meet the standards”	11	4.1	26.2
“psychiatric rehabilitation was not carried out”	8	3.0	19.0
“rehabilitation was carried out formally”	2	0.8	4.8
“rehabilitation activities were not fully implemented”	9	3.3	21.4
Total	42	15.6	100.0
System missed	228	84.4	–
Total	270	100.0	–

*Table 4. Defects detected at the 2<sup>nd</sup> stage of quality control in the section “treatment results” (in absolute numbers, in %)*

Comments in the section	Number of responses	Share. %	Percentage of valid responses. %
“treatment result was achieved partially”	18	6.7	75.0
“result is not achieved”	4	1.5	16.7
“lethal outcome”	2	0.7	8.3
Total	24	8.9	100.0
System missed	246	91.1	–
Total	270	100.0	–

The most frequently detected defect during the second stage of control in the section “registration of the diagnosis of the main and concomitant (clinically significant) diseases” was the item “medical commission with justification was not carried out” (n = 12, 60.0 %) (table 2). It also was noted that 250 (92.6 %) internal quality control cards out of 270 — defects in this section were not described.

In a quarter of cases of detected defects in the internal quality control cards, with the 2-level control section “medical-prophylactic activities, and medical rehabilitation” there were such comments as “does not meet standards” (n = 11, 26.2 %) and the “prescribing neuroleptics without correction at discharge” (n = 9, 21.4 %) (table 3). Summing up the results, it turned out that a total of 15.6 % (n = 42) of patients had defects in treatment and rehabilitation process carried out in hospital conditions.

The most common defect in the section “treatment results” was that “treatment result was achieved partially” (n = 18, 75.0%). This may indicate that patients with a mental disorder were discharged untreated, and that, probably, in the future, this will lead to their rapid re-hospitalization (table 4). In 16.7% of cases, the planned result of treatment was not achieved at all.

More than the half of the defects in the section “registration of primary medical documentation” are related to the item ‘issued in a timely manner, reasonably, in accordance with the clinical and functional characteristics’ (n = 77, 50.3% of responses, 56.2% of observations). The second most common defect was “the prescribing drugs is not justified” (n = 25, 22.7% of responses, 23.1% of observations). The third and the fourth ones are, respectively, “the medical history was not filled in for three or more days” and “lack of joint examinations with the head of the hospital department” (n = 19, 17.3% of responses, 17.6% of observations and n = 18, 16.4% of responses, 16.6% of observations, respectively) (table 5).

*Table 5. Defects detected at the 2<sup>nd</sup> stage of quality control in the section “registration of primary medical documentation” (in absolute numbers, in %)*

Comments in the section	Number of responses	Share, %	Percentage of observations, %*
“the prescribing drugs is not justified”	25	22.7	23.1
“multiple defects”	11	10.0	10.2
“inaccuracies in the design of the title page”	17	15.5	15.7
“no catamnestic information”	2	1.8	1.9
“the drug was prescribed without a decision of the medical commission”	2	1.8	1.9
“the diagnosis was incorrectly indicated in the direction of psychoneurological dispensary”	1	0.9	0.9
“there is no consent to treatment or to the processing of personal data”	5	4.5	4.6
“lack of joint examinations with the head of the hospital department”	18	16.4	16.7
“the medical history was not filled in for three or more days”	19	17.3	17.6
“the patient receives lithium salts”	10	9.1	9.3
Total	110	100.0	101.9

Note: \*the respondent has the opportunity to leave some comments in the section.

Further, we compared the coefficients of internal quality control cards for the period from 2015 to 2018 and 2019 (156 cards of patients (57.8%) from 2015 to 2018 and 114 (42.2%) of patients in 2019), before and after the start of the work of the department of quality control and safety of medical care, which is a new division of “PCH No. 4” of MHD.

The median quality coefficient on the 2<sup>nd</sup> level of analysis for the period from 2015 to 2018 was 0.86 (0.79; 0.91). The median quality coefficient on the 2<sup>nd</sup> level of analysis in 2019 appeared to be 1.0 (0.90; 1.00). The quality coefficient at the 2<sup>nd</sup> level of control for the 2019 was significantly higher than for the period from 2015 to 2018 (the Mann-Whitney test,  $p = 0.011$ ) indicating that the united quality and safety of medical care control department in the “PCH No. 4” of MHD proved to be efficient and that the detection of defects in medical-diagnostic process has improved.

## Discussion

Internal quality control contributes to improving the quality and safety of medical treatment provided in a medical organization [2; 3]. Ongoing monitoring of the quality coefficient of medical care using internal quality control cards allows you to make timely management decisions and hastily eliminate the identified defects in the medical-diagnostic process [10–12]. The use of internal quality control (hereinafter referred to as IQC) in psychiatric practice is still poorly researched and described. In our study, for the first time in the examination of the quality of psychiatric care with constant monitoring, IQC cards were used.

To discuss our results, we found works where the analysis of defects in the medical-diagnostic process in other medical areas was performed using other methods for evaluating primary medical documentation. Thus, several studies [13–15] indicate that in a versatile hospital, the frequency of defects in the medical-diagnostic processes reaches a level from 65.5 to 96.2%, which is consistent with the results of our study.

According to Zhiguleva et al. (2020), defects in the medical-diagnostic process consist in a poor health records transfer between medical organizations (in 87.8% of cases), defects in collecting anamneses (in 78.4%), and shortcomings in the maintaining medical documentation (in 90.2%). In more than a third of cases, defects are systemic in nature and, hence, require organizational and managerial measures to be fixed [14].

According to Murzaliev et al. (2016), the disadvantages of providing medical care in a versatile hospital relate to the collection of anamneses, examination of patients, and provision of medical consultations [15].

Our analysis of internal quality control maps showed that there is no unified approach to describing defects. For example, when describing “diagnostic measures for the main and concomitant (clinically significant) diseases”, experts could formulate defects in various ways: give more specific (“the patient receives lithium salts, there is no control of lithium levels in the blood”) or more general comments (“not fully implemented”). We also attributed the lack of a clear definition of a completed case, which would be applicable for the analysis of specialized medical care, to the shortcomings of the Order No. 820 of MHD.

The standardization problem of descriptions of treatment defects may be caused by inaccuracies in the Order No. 820 of MHD, by the lack of clear recommendations on the description of defects and by not taking into account the specifics of medical organizations providing specialized care, including psychiatric one.

In our study, the overall frequency of defects in the medical-diagnostic process in the analysis of IQC maps for inpatient settings was 40.7% (care delivery defects were detected in 110 out of 270 IQC maps), which is consistent with the data of other authors. We be-



lieve that systematization of the IQC examination can help not only to improve its own quality, but also to provide an opportunity to perform effective, reproducible and comparable expert assessments, which, in turn, can increase the quality of medical care provided to patients in the “psychiatry” profile in inpatient settings.

Thus, constant monitoring of quality of medical care using analysis of the IQC cards helps to timely identify defects in the medical-diagnostic process that contributes to making sound organizational and managerial decisions and improving the quality of medical care to patients in the field of psychiatry.

## Conclusions

1. During the examination of the quality of medical care with the use of IQC cards, the total share of identified defects in the medical-diagnostic process in a psychiatric hospital was 40.7% (in 110 out of 270 IQC cards). In 15.6% of cases of providing medical care to patients, defects in treatment and rehabilitation measures were identified.
2. According to the internal quality control cards, the most frequently used comment in the section “treatment results” in the primary medical documentation was that “treatment result was achieved partially” (75.0%), which may indirectly indicate the ineffectiveness of the treatment course and that the patient with a mental disorder had been discharged after an incomplete course of treatment, which may lead to his re-hospitalization in the future. In 16.7% of the responses, it was noted that the planned result of treatment was not achieved at all.
3. In almost a quarter of cases, when conducting an examination of the quality of medical care using IQC cards regarding the registration of primary medical documentation, experts noted the defect “the prescribing of drugs is not justified” (n=25, 22.7% of responses, 23.1% of observations). In 17% of the responses, the following defects were found: “the medical history was not filled in for three or more days” and “lack of joint examinations with the head of the hospital department”.
4. The median quality coefficient on the 2<sup>nd</sup> stage of control in the period from 2015 to 2018 was 0.86 (0.79; 0.91), and in 2019 it became 1.0 (0.90; 1.00). Higher values of the quality coefficient in 2019 compared to the period from 2015 to 2018 (the Mann-Whitney criterion, p=0.011) indicate the effectiveness of the examination of the quality of medical care and an increase in the detection of defects in the medical-diagnostic process.
5. It should also be noted that when conducting an expert examination of medical care quality by filling out IQC cards, the comments of expert doctors were often difficult to reproduce, and some of these comments were not constructive at all, which may be due to the lack of specific recommendations for filling out IQC cards in the Order No. 820 of the MHD.

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#### Authors' information:

*Irina B. Shikina* — MD; [shikina\\_irina@mail.ru](mailto:shikina_irina@mail.ru)

*David R. Davidov* — [rew4er@yandex.ru](mailto:rew4er@yandex.ru)