

Towards the rational use of medicines

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BACKGROUND: Rational use of medicines remains to be one of the most challenging problems in health systems worldwide [1, 2]. ABC/VEN-analysis has been recommended for use by the World Health Organization (WHO) and has been used in health care practice globally since 1981. It represents the simple and effective method of analysis of medicine expenditures, identifying priority groups of medicines, the use of which, when improved, may provide the greatest clinical and economic impact. ABC analysis provides an accurate and objective picture of budget expenditures on medicines. VEN-analysis helps to prioritize between various medicines in their selection for procurement and use within a drug supply system [3–5].

OBJECTIVE: To assess the impact of introduction of evidence-based principles in the practice of medicine procurement and use on budget expenditures on medicines of a multidisciplinary health facility for the period of four years (2011–2014).

METHODS: ABC/VEN analysis was carried out in a multidisciplinary health facility with over 1000 beds (an average number of beds for three years), which is responsible for provision of care to the population of about 1.4 million people. The analysis was carried out on the basis of information on medicine expenditures for 4 years: 2011 (1st year), 2012 (2nd year), 2013 (3rd year) and 2014 (4th year). When assigning VEN categories of medicines we used expert method: assignment of categories was carried out by clinical pharmacologists after reviewing all available evidence on effectiveness, safety and cost-effectiveness compared to other drugs in this group. In 2013, we implemented educational intervention, including detailed discussion of the results of the ABC/VEN-analysis for the years 2011-2012 from the standpoint of evidence-based pharmacology and recommendations for medicine procurement. In 2014, we delivered training workshop for the heads of clinical departments on evidence-based principles in clinical pharmacology and rational use of medicines.

RESULTS: Medicines expenditures of the studied health facility for the year 2014 were less than for the year 2013, which was the important decrease reversing the trend of increasing medicines expenditures of the last three years: 2011 - 59,868,963 roubles; 2012 - 85,324,084 roubles, 2013 - 107 303 390 roubles, and 2014 - 74,416,692 roubles. The number of International Non-proprietary Names (INN) of medicines used in 2014 was 519, which was the highest number for the four years of the study: 2011 – 429 INN, 2012 – 432 INN, 2013 – 513 INN, and 2014 – 519 INN. Nearly 40% of the funds spent in 2014 on medicines have been used for Vital medicines: 2011 - 26%, 2012 - 39%, 2013 - 25%. Expenditures on Non-essential medicines in 2014 were about the same as in previous years - 14% of total medicine expenditures: 2011 - 16%, 2012 - 13%, 2013 - 15%. However in absolute numbers (roubles) expenditures on non-essential medicines decreased compared to the years 2013 and 2012: 2011 – 9,428,135 roubles, 2012 – 11,129,388 roubles, 2013 – 15,578,325 roubles, 2014 – 10,616,023 roubles.

Expenditures on solutions for infusion (sodium chloride, Ringer's solution, dextran, glucose, hydroxyethyl starch) decreased as compared to the year 2013, but still remained high, thus indicating on the abuse of parenteral methods of drug administration. The portion of expenditures on isotonic sodium chloride solution and hydroxyethyl starch in 2014 decreased compared to the year 2013. We found a positive trend in the structure of expenditures on antibacterial agents: in 2014 expenditures on fluoroquinolones decreased nearly fivefold compared to 2013, expenditures on cephalosporins also decreased, but not so dramatically. However, there was a significant increase in expenditures on carbapenems, more than twofold compared with the year 2013. In 2014 we noted a twofold decrease in expenditures on medicines affecting blood, including antithrombotic agents, hemostatics and antianemic medicines, as compared to the values of the year 2013. In 2014 there was also a decrease in expenditures of cardio-vascular medicines, medicines affecting nervous system, alimentary tract and metabolism.

CONCLUSIONS: Introduction of evidence-based principles through educational interventions at a multidisciplinary health facility resulted in a number of changes towards more rational medicine use. Regular educational interventions for practicing physicians and heads of clinical departments of health facilities that promote rational prescribing are needed.

Keywords: Rational use of medicines, ABC VEN analysis, multidisciplinary, health facility

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