

Authors' opinion

## Is it time for transition from the subject-based to the integrated preclinical medical curriculum?

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**Abstract:** In the 60s of the last century, a number of new universities in the world began to apply an integrated program of medical education, the cornerstone of which was problem-oriented education. Thus, the Flexner model of higher education adopted by that time in most countries of the world, with its characteristic segregation of teaching of the theoretical and clinical disciplines, which had ceased to satisfy the needs of modern healthcare, was gradually replaced by a new system that put the student in the center of the educational process and opened the way to active methods of teaching being focused on the end result – training of graduates whose qualifications most fully satisfy the needs of society.

Over the half-century history of its existence, this system has been adopted by most medical universities in different countries of the world, in many of which it has undergone significant modifications in accordance with the needs of national educational standards. Many medical universities in Russia and other countries of the former Soviet Union showed interest in this system, some of the medical faculties of our country accepted certain elements of it. However, up to date no integrated preclinical medical education program has been applied in any of the Russian universities. Hereby we are undertaking an attempt to analyze the reasons and assess the possible perspectives for the transition of medical universities in Russia to teaching of fundamental and biomedical disciplines using the integrated curriculum.

**Keywords:** integrated curriculum, medical education.

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### Introduction

The rapid development of medical knowledge and changing conditions for the functioning of the national health care system dictate the need to review existing medical educational programs. When the medical curriculum is becoming more and more applied, preclinical departments have to look for more flexible approaches to teaching of their disciplines in accordance to the needs of clinical departments and the requirements of practical health care to make medical education outcome-based from the very first day of its implementation. For a long time, medical education was focused on the acquisition of professional knowledge and skills, while currently this approach may no longer be considered sufficient, as modern graduates also require an ability to communicate, collaborate, develop logical constructions and obtain the skills to do research and conduct scientific discussions. In various universities in the world, these aspects are integrated into the goals of educational programs [1-3].

The Flexner's reform of medical education, launched at the beginning of the 20<sup>th</sup> century, suggested a disciplinary model of teaching in preclinical years of medical curriculum, after which the

students passed exams in fundamental and biomedical subjects and only then they went on to study clinical medicine. Despite the positive features of Flexner's reform, such as enhanced requirements to the proficiency of applicants, utilization of scientific achievements in medical education, teaching of clinical medicine at the patient's bedside, this model soon began to impede further development of medical curriculum due to its strictly unified standard, passive teaching methods, fragmentation and isolation of knowledge obtained in preclinical departments, focus on hospital medicine rather than a healthcare system that would satisfy the needs of modern society [4-6].

From the late 60-ies – beginning of the 70-ies of the last century, problem-based learning and an integrated medical curriculum were started at the medical faculties of the newly established universities, such as McMaster University in Canada and University of New Castle in Australia [1, 7, 8]. The decisive role in the success of these truly revolutionary transformations that began to unveil in the medical education was played by two outstanding medical teachers: John Hamilton, who headed the committee on medical education, and Howard Barrows, the founder of problem-based learning at McMaster University.