Kapiton A. M., doctor of pedagogical sciences,
associate professor of the department of computer
and information technologies and systems,
Yalova T., applicant
National University «Yuri Kondratyuk Poltava Polytechnic»

APPLICATION ANALYSIS
MODERN LABORATORY INFORMATION SYSTEMS

Modern diagnostics requires the use of standard approaches that are accepted in Europe and the world. The introduction of electronic document management requires standard formalized protocols. The aim of the study is the authors' desire to pay attention to an alternative method of diagnosis, which has become scientifically sound and continues to improve due to the development of modern approaches and information technology, which consists in video recording and analysis of motor patterns of the newborn over time. Today, the problems of digitalization of all spheres of life, especially medicine, are especially relevant. Thus, without the use of modern hardware and software to address particularly pressing issues related to delayed child development, it is impossible to unambiguously indicate the functional insufficiency of its central nervous system, when it is possible to note a significant lag in any area: physical, cognitive, behavioral, emotional, social, compared to norms, or even in several at the same time [3]. The task of identifying newborns at risk of developmental delay and possible adverse effects on the functioning of the child's nervous system requires modern diagnostic methods that promote early intervention that can minimize morphological disorders and maximize the potential of infants, which is not possible without the use of modern software.

The scientist watched with the naked eye the babies in the intensive care unit, when the newborns were free from care manipulations and moved without extraneous stimulation only due to the impulses of their nervous system. Later, a control group of premature babies was selected. As a result of these observations, the professor began to distinguish between different types of movements. General movements (CM) of a twisting nature (writhing) are traced from birth to full-term infants and are present until the end of the second month after birth. Then gradually there is a new type of CM, which were called Prechtl "fidgety", which literally translates as "capricious, twisted", meaning the accelerated nature of these movements and increase their amplitude, but the fluidity and elegance of these movements is normal, concentration attention limits or completely stops them. CM "fidgety" reach full expression in 3-4 months, and then gradually decrease at the end of the fifth month in both full-term and premature infants (adjusted age), giving way to postural control and antigravity reactions. CMs of infants with a high degree of prematurity looked different: they had a limited synchronous repertoire, all the muscles of the limbs and torso contracted and relaxed almost simultaneously. Cerebral palsy is traditionally diagnosed at about 2 years of age, while a qualitative assessment of general movements according to the Prechtl method provides an opportunity for early diagnosis at 5 months of age. There are two specific features of general movements that reliably predict the threat of cerebral palsy: a constant model of limited-synchronized movements, which continue even with third-party distraction, and the absence of "fidgety" movements [2]. Classical methods of neurological examination can reveal the real state of the baby's nervous system, but they lack the ability to make a specific prediction of the neurological outcome [1, 3].

Specialized software designed to automate clinical diagnostic laboratories is called "laboratory information system" (LIS). LIS is an information system specially created to automate the work of the diagnostic laboratory. When using a computer in laboratory medical research, a certain diagnostic algorithm is included in the program. A database of diseases is created, where each disease corresponds to certain symptoms or syndromes. In the process of testing, using the algorithm, a person is asked questions. Based on his answers, the symptoms (syndromes) that are most consistent with the disease are selected [3]

Therefore, a standardized neurological approach (taking into account age), which fully takes into account the different age properties of the nervous system, which continues to develop, should be important in the neurological examination of infants and children, using the latest advances in information technology, including modern technical and software. It should be noted that the issue is quite relevant, especially in today's conditions.

That is why it is necessary to focus on the use of modern technologies to address the pressing issues raised by the authors. Prospects for further research in this area are determined by the digitalization of the diagnosis of functional insufficiency of the central nervous system, especially for young patients.

Literature

1 Prechtl's Method on the Qualitative Assessment of General Movements in Preterm, Term and Young Infants
URL: https://general- movements-trust.info/content/53/53/manual
2 General movement assessment as a method of developmental neurology: new paradigms and their consequences
URL: https://pubmed.ncbi.nlm.nih.gov/11769272/
3 Early diagnosis of cerebral palsy
URL: https://laesus-de-liro.livejournal.com/410347.html