

ANALYSIS AND EVALUATION OF ANNOUNCEMENT OF MEDICAL WORKERS AND ITS AUTOMATION

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According to the World Health Organization, infections associated with the provision of medical care are one of the leading causes of death and complications of hospitalized infections worldwide. The hands of medical personnel are a major factor in the transmission of pathogens associated with the provision of medical care. The observance of the rules of hand hygiene by medical workers is one of the most important measures to prevent the spread of hospital strains of infection among staff and patients. To address the need for additional training of health workers in hand hygiene when caring for patients, it is necessary to determine their level of knowledge regarding the prevention of infections associated with the provision of medical care and hand hygiene.

We have developed a software product that allows for the evaluation and analysis of medical questionnaires on the prevention of infections associated with the provision of medical care. This allows you to conduct a survey in a short period of time, as well as reduce the complexity of such an analysis manually.

The aim of this study is to create a software package that would allow for automated assessment of the knowledge of nurses about the prevention of hand hygiene in the performance of professional duties. The main objectives of the study are: the development of a questionnaire on the prevention of hand hygiene; analysis of software for automation of the survey; the development of a software system for assessing the knowledge of paramedical personnel; the introduction of a software package into medical facilities and a survey of paramedical personnel; analysis of the results of the questionnaire.

To automate the assessment of knowledge and data collection, a web application has been developed for medical personnel. The .NET core has been chosen as the platform for the web application. During development, most of the required application components can be downloaded as separate modules via the NuGet batch manager. This reduces the number of redundant dependencies and the overall size of the finished product. Also, a project based on .NET Core can be easily transferred to the cloud. Microsoft Azure already supports the deployment of .NET Core projects in both Application Services and virtual machines. .NET Core allows small projects to get all the benefits of an enterprise-class platform, while providing convenient and development tools, as well as an inexpensive infrastructure. Also, a .NET Core-based project is best suited for computational and analytical tasks.

With the help of automated software, questionnaires of the average medical personnel of the institutions of Kharkov (Ukraine) were conducted. Analysis of the results of testing showed that in the treatment and prevention

institutions in which the study was conducted there were clearly developed rules for the treatment of hands based on existing regulatory documents. Seminars on hand hygiene are held in hospitals. The majority of respondents know the algorithms for washing and hygienic hand antiseptic, less than half know the sequence of actions for surgical treatment of hands.

The results of the questionnaire survey of nurses showed that during the training of nurses to the rules of hand hygiene, special attention should be paid to the prevention of catheter associated diseases, including providing healthcare workers with moisturizing creams, emphasizing the proper implementation of all stages of hygienic and surgical hand treatment; it is necessary to strengthen control over the uninterrupted provision of hospital departments with alcoholic antiseptics and liquid soap and review the norms of nurses' loads to ensure the possibility of quality medical care for patients.

Based on the results of the questionnaire, it is possible to organize trainings, the amount of information provided will depend on the knowledge gaps of the respondents. The program of such trainings will focus on the most complex issues and tasks, the answers to which the respondents most often made mistakes in the questionnaires. This will save time for staff training and improve the skills of health workers.

The program complex has been developed, which allows conducting an automated survey of medical staff and greatly simplify its analysis. It was established that in the treatment and prophylactic institutions in which the research was conducted, there are well-defined rules for hand treatment, based on existing normative documents. In-patient training courses on hand hygiene are conducted. The majority of respondents know the algorithms of washing and hygienic hand antiseptic, less than half know the sequence of actions in the surgical treatment of hands.

An expert system was developed and implemented that allows individual recommendations to be based on conclusions on hand hygiene in medical institutions, as well as general statistics and recommendations for the administration of a hospital to eliminate the inadequate level of knowledge and possible factors that hinder the issue of hand hygiene.

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