

# Monitoring Program of Long-Livers of the Fergana Valley of the Republic of Uzbekistan with Diseases of the Organ of Vision

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**Abstract** The aging of the Earth's population is an urgent demographic and medical and social problem that requires the provision of high-quality medical and social solutions. According to WHO forecasts, in 2050 in 65 countries of the world the share of the elderly population will be more than 30%. The demographic indicators of the Republic of Uzbekistan over the past decades indicate a progressive increase in the number of centenarians. In the Fergana Valley, the population aged 90 years and older, today is 4,118 thousand. Centenarians are characterized by the presence of several chronic diseases, which increases the need for qualified medical care and requires further improvement of monitoring of this category of citizens. Digital solutions in the field of electronic monitoring can be used to solve this urgent problem.

**Keywords** Centenarians, Monitoring, Electronic map, Healthcare organization

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## 1. Introduction

The increase in life expectancy is a global trend that determines the rapid growth in the proportion of elderly and senile people. According to WHO forecasts, in 2050 in 65 countries of the world the share of the elderly population will be more than 30%. Longevity, defined by the World Health Organization as reaching the age of  $\geq 90$  years, remains a rare phenomenon and one of the most important biosocial phenomena. Only one person out of five thousand becomes a long-liver, and they can be attributed to the biological elite.

The demographic indicators of the Republic of Uzbekistan over the past decades indicate a progressive increase in the number of centenarians. In the Fergana Valley, the population aged 90 years and older, today is 4,118 thousand (data for 2020). Social protection of the elderly in Uzbekistan is enshrined at the legislative level and is regulated by regulatory legal acts. These acts cover, first of all, the norms that enshrine the rights of all citizens, regardless of age, but are especially significant for the elderly [1]. In the State Program "Year of Attention and Care for the Older Generation" (2015) and policy documents adopted by the President, special attention was paid to further improvement of legislation, pension provision, social

support, health care, prevention of age-related diseases and sanatorium and recreational activities for the elderly [8,9].

A decent level of quality of life for an elderly person is a problem, the solution of which will have to be implemented for many more years [5].

More than 70% of centenarians have more than 4-5 chronic diseases, the procedure for examination and treatment of which has certain specifics. Knowledge of these features makes it possible to optimize preventive and medical measures, which positively affects the level of morbidity and the quality of life of centenarians.

Modern sociological research confirms that centenarians face many social, economic and medical problems. An increase in the number of centenarians leads to the need to solve medical and medical and social problems, and accordingly requires further improvement in the organization of medical care for this category of citizens, ensuring the availability of all its forms.

To date, preventive medical examination and monitoring of the condition of centenarians is one of the main stages in the rehabilitation of this segment of the population. Monitoring is carried out by systematic monitoring of the condition of individuals, rational treatment of underlying and concomitant diseases, training in self-control methods and fulfillment of medical prescriptions [5]. To ensure the unity and monitoring of the treatment and diagnostic process, it is necessary to create an exchange of adequate and complete information between doctors of medical institutions of

various levels of health care, since the existing methods of transmitting information about a patient do not always adequately reflect his condition, are difficult to formalize, and therefore arise a number of serious problems: there is a duplication of a number of services, there is no continuity in treatment and optimization of the management of a particular patient; it is difficult to carry out statistical processing and evaluation of the quality of the presented data [6].

Our republic has experience in introducing patient monitoring using electronic programs for age-related macular degeneration, glaucoma. The development and implementation of such a program for centenarians of Uzbekistan can be used to solve such an urgent problem as ensuring a decent level of quality of life for an elderly person. Цель исследования. Создание электронной программы мониторингования долгожителей Республики Узбекистан на примере Ферганской долины и оценка её эффективности.

## 2. Materials and Methods

An electronic program "Medical monitoring card of the centenarian" was developed and implemented in 413 centenarians living in the regions of the Ferghana Valley of Uzbekistan (105 - Andijan region, 222 - Fergana region and 86 - Namangan region).

The program has sections: the first section of the card is the passport section, where all the basic data about the patient is filled in, this part of the card is filled in by the family doctor or nurse.

In the second section, the family doctor reflects the data of the patient's life history and condition, complaints, risk factors that the patient has (in a separate tab there is a list of risk factors and the main factors of occurrence and progress), concomitant diseases of the body and the organ of vision. Based on the data obtained, the family doctor can determine the risk group for diseases. In addition, the map has a section where examination data and data from laboratory research methods (for concomitant diseases) are stored. There is a tab where a preliminary diagnosis is set (with a date). And also a section where the family doctor indicates the date and volume of the conversation on a healthy lifestyle, risk factors for the disease and preventive measures, etc.

Next, the family doctor sends the patient to a primary health care specialist (including an ophthalmologist), who examines the patient without duplicating the available data in the card, but takes them into account. The specialist fills in a part of the card with general or special research methods, if necessary, additional research methods and laboratory data (attaches). They fill in the card tab with the established diagnosis: form, stage, compensation, how compensated, comorbidities, complications, etc. All data are presented in a tabular form that is easy to fill in, which reflects the history of the change in diagnosis, this allows you to trace the clinical course of the disease and the adequacy of the doctor's actions. To reflect the full diagnosis, its formation, a separate

screen tab has been developed.

If the health care specialist himself is confident in the diagnosis, then he determines the method and regimen of treatment for the patient, the tactics of management, and the timing of re-examinations. Indicates the date and volume of the conversation (on lifestyle correction, informs the patient about his disease, risk factors, methods of treatment, the importance of adherence to the treatment regimen and visiting a doctor, the need for dynamic monitoring, etc.).

If a specialist needs additional research methods to establish a diagnosis and conduct treatment, then the PZZ ophthalmologist sends the patient, along with a card, to advisory centers, polyclinics or a specialized healthcare unit (SPZ) to provide qualified assistance. The map has a tab to indicate which, missing research method needs to be performed (for example, OCT, angiography, etc.). Without duplicating the existing data, additional research methods are carried out, which are also (with the indication of the date and interpretation of the data) attached to the section of the map reserved for research or laboratory data.

In the institution, the patient is given the necessary diagnostics, the final diagnosis is made, the type and method of the necessary treatment, the timing of its implementation, the regimen, scheme, dosage, etc., are also determined, as well as recommendations for further tactics and timing of observation, if necessary, consultation of related specialists (for which there is a separate tab).

After carrying out all the necessary manipulations, the doctor of the specialized health care unit (SZZ) indicates in the card all the necessary information for the family doctor of the PZZ (what was done, what further tactics, the timing of repeated examinations, types and methods of monitoring functions, etc.). And so continuously, between doctors there is a monitoring of the centenarian and the provision of medical care. Thus, in one card all the information about the centenarian is summarized, which makes it possible to avoid duplicating research methods and actions. The map clearly shows the dynamics of the process of managing a centenarian: when the diagnosis was made, what treatment was carried out, the transition from stage to stage, at what time it was observed, the results of the studies, when he applied to the PZZ, and when to the PZZ, etc. According to the map, it is possible to conduct an expert assessment of the timing of the detection of the disease, the adequacy and timeliness of the treatment and diagnostic process and clinical examination, and the competence of doctors. For the convenience of the user, all data is located on the corresponding sections-tabs, which are combined into a single program. According to the map, it is possible to conduct an expert assessment of the timing of the detection of the disease, the adequacy and timeliness of the treatment and diagnostic process and clinical examination, and the competence of doctors.

Thus, all information about the patient is summarized in one card, which makes it possible to avoid duplicating research methods and actions. The map clearly shows the dynamics of the process of managing a centenarian: when

the diagnosis was made, what treatment was carried out, the transition from stage to stage, at what time it was observed, the results of the studies, when he applied to the PZZ, and when to the PZZ, etc. According to the map, it is possible to conduct an expert assessment of the timing of the detection of the disease, the adequacy and timeliness of the treatment and diagnostic process and clinical examination, and the competence of doctors. All data is presented in an easy-to-fill tabular form and combined into a single program.

### 3. Results and Discussion

An analysis of the implementation of the card over the course of 1 year and an assessment of the quality of monitoring showed that monitoring of centenarians and successive actions between specialists from various levels of health care led to the fact that the work of a family doctor and a nurse (patronage) was specified, the actions of a family doctor and an ophthalmologist and others were streamlined and coordinated. narrow specialists, duplicating methods of research were reduced by 30%, the condition of long-livers improved by 3.5 times in compensation for existing diseases, in 89% it was possible to stop the progression of diseases. According to the map, it is possible to conduct an expert assessment of the timing of the detection of the disease, the adequacy and timeliness of the treatment and diagnostic process and clinical examination, and the competence of doctors.

### 4. Conclusions

The electronic program "Medical monitoring card of a centenarian" allows you to improve the quality of monitoring of centenarians, as it summarizes all the information about centenarians in the Fergana Valley of Uzbekistan, and allows you to avoid duplicating research methods and actions. The map clearly shows the dynamics of the process of managing a centenarian: when the diagnosis was made, what treatment was carried out, the transition from stage to stage, at what time it was observed, the results of the studies, when he applied to the PZZ, and when to the PZZ, etc. The created electronic program enables specialists to obtain integrated information about the centenarian and the possibility of further monitoring the course and outcome of general and eye diseases of the centenarian. The map makes it possible to conduct an expert assessment of the timing of the detection of the disease, the adequacy and timeliness of the treatment and diagnostic process and

clinical examination, and the competence of doctors.

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