



FINAL REPORT

of a public contract with the subject:

"Organizing two conferences, a campaign for the promotion of the project, carrying out preventive examinations of diseases of social significance"

under Lot No 3

"Preventing

Reviews of Diseases of Social Importance "



**Blagoevgrad
2019**

1 About the project

The population of the cross-border area faces significant health challenges, especially in remote areas and areas of concentration of special populations. There is a clear need to improve access to primary and emergency medical care in isolated and socially disadvantaged communities in the cross-border area. The project includes activities to invest in health and social infrastructure to improve the delivery of health services, including emergency services assistance, as well as the promotion of cooperation between regional, local and health authorities and organizations in order to share resources and expertise in the field of healthcare, and the development of joint border plans and staff exchange programs and information resource from competent health structures and emergency centers in the cross-border area. The project focuses on the needs and measures to be taken to improve the provision of health services, in emergency services as well as more effective prevention of socially important diseases such as cardiovascular diseases, cancer risk, diabetes, etc., in areas with restricted access to highly specialized medical activities across the cross-border region through the introduction of mobile medical offices, mobile telemedicine equipment, and joint training of medical staff of health authorities in the emergency medical system with a focus on the use of telemedicine and joint action plans in emergency situations and protocols in crisis situations.

The target area for the project is in Blagoevgrad and Central Macedonia (Thessaloniki) respectively the territory (s) with the most deprived and isolated communities (target groups) covering 54 remote settlements on the territory of the Lagadas and Halkidona municipalities in Greece and on the territory of Blagoevgrad District comprising 14 municipalities, 96 mayoralities and 280 remote settlements (settlements).

The main objective of the project is to improve the accessibility and quality of medical services to the population in restricted areas and vulnerable populations in order to increase the capacity and effectiveness of the primary care system for better territorial and social coverage for deprived from high-quality health services and isolated communities (areas). Increasing cross-border connectivity and mobility.

The successful implementation of the project will provide mobile medical equipment for the project partners, supply of mobile units for mobile health services and specialized telemedicine equipment in remote border areas, incl. technical and laboratory equipment. Prophylactic examinations for publicly significant diseases for 500 people in cross-border areas are planned.

Project activities focus on actions that promote the quality and efficiency of services and primary value-added care services such as telemedicine and mobile health services, increased cooperation capacities, efficiency and effectiveness for emergency response in the cross- and increased access to healthcare for vulnerable groups (specific to cross-border areas) and / or residents of difficult-to-access border areas.

The expected tangible (increased capacity) and visible results (facilitated access for vulnerable groups) of the RES project in Blagoevgrad are:

Increasing the operational capacity and efficiency of the primary healthcare system, which is reflected in better territorial and social coverage:

Improving the quality and efficiency of primary health care for the most deprived areas;

Enhanced access to healthcare for vulnerable groups in disadvantaged areas with high cross-border mobility;

• Delivery of 1 pc. Mobile unit for healthcare with mobile medical equipment and apparatus;

- Delivery of 1 pc. telemedicine equipment;
- Delivery of 1 pc. car;
- Delivery of 4 information kiosks for presentation of information on primary health services in Blagoevgrad district (located in remote areas of 4 municipalities);
- Delivery of laboratory equipment for RHIs;
- Organization of 1 seminar for capacity building in the Blagoevgrad region - topic "Telemedicine" with representatives of the project partners, MHAT in the region, mayors, MH, MRDPW, Decentralized Administration Thessaloniki;
- production and distribution of promotional materials and media publications on the project;
- Training program for staff resources at the Papageorgiou Hospital for representatives of the project partners from Bulgaria:
 - 1 piece. training module on telemedicine for partners from CEMC-Blagoevgrad;
 - 1 unit of training modules on the "Emergency Response Plan"

2. Methodology

In the four municipalities where the preventive tests carried out, a total of 111 000 people live, according to NSI data. Distributed in proportion to the population of each municipality, we conducted surveys as follows:

Municipality	Number of persons	Date
Petrich	243	22-23.05.2019
Gotse Delchev	144	30.04-02.05.2019
Hadzhidimovo	45	18.04.2019
Satovcha	68	14.05.2019

In Gotse Delchev the research was conducted in the Medical Center building and in the other settlements in a mobile cabinet and ambulance. In the bone density study – doctor Popov and doctor Alexandrova, doctor Tsenov and doctor Bayrakova participated in thyroid screening, and in blood for the study of TSH, FT4, SGOT, SGPT, LDL, HDL, VLDL, TH, Vit D3, PKK, sugar, Ca, Phosphorus and Alkaline phosphatase were attended by two nurses and doctor Marzevanova. The results were then processed in the laboratory.

In each of the four municipalities there was preliminary information on the dates of the reviews and the participants were recorded in advance. This has resulted in maximum efficiency and effectiveness of the procedure. All persons wishing to conduct a survey signed a declaration of informed consent and the voluntary provision of personal data.

After the review, the contractor prepared the present report in Bulgarian and English, in which the results of the survey were presented.

The research involved:

Technical Assistants - for organizing reviews - 2

Nurses - 3 (2 for blood tests and 1 for bone density)

Doctors specialists - endocrinologist, GP, Orpheus, radiologist - Dr. Popov, Dr. Bayriakova, Dr. Tsenov, Dr. Marzevanova, Dr. Alexandrova.

10 days prior to the reviews, meetings were held with the representative of the assignor and the winners of the other two separate positions in order to coordinate the actions of the participants in order to maximize the promotion of the program and its activities.

During the reviews, the requirements for publicity and visualization will be respected according to the Interreg V-A Greece - Bulgaria 2014-2020 Guidelines

Diseases that can be detected with the study

Osteoporosis

The human bone system consists of over 200 bones, each with a precise location and function in the human body. Bone tissue is made up of: an organic portion containing predominantly proteinaceous substances and an inorganic compound composed mainly of calcium salts. The bone part of the protein part owes its elasticity and strength, and the calcium salts its hardness.

Osteoporosis is a progressive skeletal disease characterized by decreased bone mass and structural changes in bone tissue that lead to increased fragility and a consequent risk of fractures. As the process of bone loss and thinning of bone tissue progresses slowly and steadily over the years, osteoporosis is successfully called "THIRD".

Risk factors that can not be avoided:

- *elderly - it is characterized by the so-called senile (osteoporosis) osteoporosis, in which the femoral neck is the most common;*

- *Post-menopausal or early menopause (occurring 45 years of age naturally or postoperatively), with the most common type of osteoporosis being observed with fractures of the vertebrae and lower third of the forearm;*

- *presence of certain diseases - diabetes mellitus, basal disease, rheumatoid arthritis, chronic liver and kidney diseases, leukosis and others;*

- *long-term treatment with bone-damaging drugs - corticosteroids, antiepileptic drugs, thyroid hormones and others;*

- *heredity;*

- *graceful body, characterized by a fine bone structure, low height and underweight;*

- *people of the white or Asian race.*

Precautionary Avoidable Risk Factors:

- *insufficient calcium and vitamin D intake - low calcium intake leads to loss of bone and vitamin D to reduced bowel absorption;*

- *a sedentary lifestyle - the lack of physical exercise weakens the bones and accelerates the loss of minerals in them;*

- *smoking - nicotine in cigarettes suppresses the synthesis of new bone substance;*

- *excessive coffee consumption (over 5 glasses a day), cooking salt, black tea, alcohol abuse - these unhealthy habits lead to increased calcium excretion through the kidneys and loss of bone;*

- *unbalanced protein feeding - excessive or insufficient protein intake accelerates the process of bone loss;*

- *acute and chronic psycho-emotional stress - adrenaline, which is released during severe stress, extracts calcium from the bone and leads to mineral debilitation; this process can develop within weeks and even days!*

THE MOST HAPPY EFFECTS OF OSTEOPOROSIS ARE:

- *back and neck pains of a chronic nature that exacerbate at physical exercise;*

- *DEFORMATIONS of the skeleton;*

- *REDUCTION OF STAY;*

- *REDUCED working capacity;*

- *BONE FRACTURES on the skeleton (most often in the vertebral column, the bones of the forearm, and later in the femur).*

OSTEOPHENS

Osteopenia is a progressive systemic decrease in bone mass with deterioration of the bone microarchitecture and increased risk of fracture. It is due to the imbalance between the physiological processes of building and the degradation of the bone, and in the case of osteopenia, the degradation takes a pride. Osteopenia is an intermediate stage between healthy bone and osteoporosis. According to the World Health Organization, it is defined as decreased bone density and T-score between (-1) and (-2.5). T-score values above (-2.5) are already characteristic of osteoporosis. The main clinical manifestations of osteopenia and osteoporosis are bone fractures. Osteopenia is unrelated or very rarely associated with bone pain and functional impairment, usually it occurs latently.

Women with menopause, men over 70 years, those with genetic "tender bones" and fractures in blood relatives are at increased risk for osteopenia and osteoporosis. The low weight in childhood and in young age and the embarrassed, inadequate nutrition in adulthood predispose to osteopenia and osteoporosis. Other risk factors include sedentary lifestyle, decreased muscle activity, limited exposure to sunlight, and postural posture.

Occupational risk factors for osteopenia include smoking, increased alcohol consumption, long-term corticosteroid treatment, and anti-ulcer drugs that lower the acidity of gastric juice.

Diagnosis of osteopenia as well as osteoporosis is performed by measuring the bone mineral density of the spine and the hip bone by means of X-ray abalostimometry (DXA). In general, postmenopausal women under 65 years of age are targeted for DXA research

Diseases of the thyroid gland

The thyroid gland is a superficial endocrine organ located on the front of the neck. Its shape is often likened to a butterfly. It has two parts - left and right, and a linking thrush that is located in front of the trachea, and the two lobes float on both sides.

As a superficial organ, the thyroid gland can easily be palpated. Her palpation is done with both hands, the examining physician usually standing behind the patient and gently squeezing the lobes of the thyroid gland. By this simple method, the skilled artisan may first determine whether there is a growth of the gland. The unrivaled thyroid gland is not visible and rarely palpates its upper stretch. The gland could be diffusively enlarged or in it to establish nodes or a combination of both - a mixed body.

According to the World Health Organization (WHO), there are 3 grades that determine the degree of gland enlargement:

- Grade 0 - no goat is detected;*
- Grade 1a - the throat is palpable but not visible;*
- Grade 1b - the throat is visible and palpated only with the full extension of the head back. To this extent, the palpable nodes are included without being accompanied by an increase in the gland;*
- Grade 2 - the neck is also visible in the normal head position;*
- Grade 3 - a very large goose that can be seen from a distance.*

Adding important features to palpation of the thyroid gland is the determination of its consistency - whether it is soft, moderately dense or dense. Particularly important are these node characteristics. More rigid and cohesive nodes are more at risk for malignancy than soft, tight-elastic, and moving nodes.

A less commonly used mark in the practice, but indicative of hyperthyroid states is the detection of trill. This is a noise that creates the accelerated blood flow of the well-bled gland. It can be sensed by thyroid auriculation as the lungs and hearts are listening.

Indirect scars that speak of a thyroid problem include changes in the skin, eyes, patient's health, neuropsychic reactivity, heart rate, etc.

Three are generally the disease state of the thyroid gland:

- 1. Hypothyroidism - a condition of decreased gland function and correspondingly reduced production of thyroid hormones;*
- 2. Hyperthyroidism - a condition of elevated glandular function with secretion of a large amount of thyroid hormones;*
- 3. Structural changes - Thyroid growth with or without nodal formation. This group also includes thyroid carcinoma.*

This classification may also include conditions where there are laboratory changes in thyroid hormone levels, but with no clinical manifestations, as well as inflammatory thyroid diseases - acute, sub-chronic and chronic thyroiditis.

If structural changes of the thyroid gland can easily be detected by palpation, let's get to know the signs and symptoms that point to hyper- and hypothyroidism.

Hypothyroidism

If there are complaints of easy fatigue, weight gain, muscle cramps, more common sense of cold, weight gain, constipation, increased depression, and memory difficulties, it may be a reduced thyroid function.

In women, a leading clinical manifestation may be menstrual disorders which, in reduced glandular function, are often abundant and frequent menstruation.

The review usually impresses: delayed speech and thought activity; dry, cold and peeling skin and delayed heartbeat (bradycardia, AC <60 rpm).

Hyperthyroidism

Complaints that point to increased thyroid function include: increased sweating and intolerance to heat, tremor and general body tension, increased nervous tension, poor sleep, weight loss with constipation, diarrhea, palpitations, and in the elderly patients combined with rhythm disorders. And in this condition there may be muscle pain and general fatigue, as well as menstrual disorders in women.



From the examination, the skin becomes warm and sweaty, often referred to as "velvet"; accelerated rhythmic or non-rhythmic pulse, tremor of the hands and body. Patients are tense and with associated thyroid ophthalmopathy there may be evidence of eye projection, redness, eyelid edema, conjunctivitis, auditory disorder, and the like.

Determining the presence of such type of symptoms or scars suggests testing of TLC, as a screening method for determining thyroid function. Structural changes in the thyroid gland, established palpantly, require subsequent echographic examination of the gland.

Thyroid Stimulating Hormone - TSH, also known as thyrotropin, is part of the pituitary secretion to promote the growth and function of thyroid hormones.

The hormone in humans is a glycoprotein with 211 amino acids. The main task of the hormone is to stimulate

VITAMIN D

Vitamins are very important for the body and human health. They come from the food we consume. With vitamin deficiency in food, they can also be obtained through nutritional supplements.

The body produces vitamin D mainly by using sunlight. It can also be obtained through fish oil, eggs and liver. Like most vitamins, however, the body's excess of vitamin D is dangerous to health and life.

According to a study by the University of Copenhagen, there is a link between high levels of vitamin D in the blood and increased mortality from cardiovascular disease, heart attack or stroke.

This is the first study to establish a relationship between high levels of vitamin D and cardiovascular disease and acute conditions. So far, research has always been focused on the deficiency of this important vitamin, which causes no less damage to health.

Studies in this area indicate that too low levels of vitamin D can lead to cancer, brittle bones and a whole host of other diseases.

The new study offers monitoring of levels and maintaining their optimal reference ranges.

"If the vitamin D level is less than 50 or more than 100 nanomoles per liter, the probability of death is much higher," says Peter Schwartz, a professor at the University of Copenhagen, Denmark.

Researchers analyzed the levels of vitamin D in 247,574 people and studied their mortality risk over the next 7 years. Then again, they took blood from the participants. During this period, 16,645 of the participants died.

It appears that in patients with elevated levels of vitamin D the risk of heart attack or stroke is much higher.

In other words, vitamin D should not be either in very high levels or very low. It is good to have this vitamin between 50 and 100 nanomollars per liter. According to the study, scientists are convinced that 70 is the best number.

Many factors are responsible for the levels of vitamin D in the blood, even skin color and weight. It's hard to know exactly what the level of this vitamin in the blood is, if not specifically studied.

Blood Glucose

Blood sugar (KS) is a term used in colloquial terms, but refers to the amount / concentration of glucose in the blood of mammals in general, and in particular humans. Although this term is used not only in the colloquial language but also in a physiological context, the name "blood sugar" is not accurate, as there are always other sugars in the blood besides glucose. Because of the biological inertness of these other sugars, the body has not made sensitivity to their levels in the blood. At the same time, glucose has a signal function for metabolism - for the presence of sugar in the blood. Therefore, blood glucose is called (even in a very specialized context) "blood sugar". Glucose is transported via the bloodstream from the digestive tract to the individual body cells. It is a major source of energy for the body.

Concentration

Concentration of blood sugar is strictly regulated by the body. Under normal conditions, the K3 level is maintained between 4 and 6 mmol / l. Homeostasis maintains this level about 5 mmol, or 90 mg / 100 ml; the last conversion from one measurement unit to another is obtained because the molar mass of glucose (C6H12O6) is about 180 g / mol (180 g / mol · 5 mmol / 10). Therefore, given that the average volume of blood of the "average statistical human" is close to 5 l, [3] [2] [3], the mass of circulating glucose in the bloodstream is from 3.3 to 7.0 g. The level of glucose increases in the morning and on feeding, further being transported from the bloodstream from two to a few grams, which circulate and are gradually absorbed by the body about a couple of hours after a meal. If the body is unable to regulate blood sugar, talk about hypoglycemia - for low blood sugar or hyperglycemia - about high blood sugar. Diabetes mellitus, e.g. is a disease in which the blood is in a state of prolonged hyperglycemia and this is due to failure of regulation.

Normal values

Irrespective of the variability of feeding and fasting intervals, as well as the difference in food composition, from very carbohydrate foods to relatively poor, blood sugar is retained in remarkably precise frames - 80 to 110 mg / dl or expressed in mols - 3.9 to 6.0 mmol.

Exceptions are episodes of eating and stress; then the CP increases temporarily in the first case due to the intake of carbohydrates and in the second because of the sympathetic nervous system that prepares the body for action by providing it with energy resources. All non-consumed amounts of glucose go through the portal gastrointestinal tract into the liver, where the excess glucose is converted to glycogen, triglycerides and other substances. Glycogen is stored in the muscles and the liver. If necessary, the pancreas secretes the glucagon hormone, which performs the reverse glucose release process from the glycogen stores

Results

	Municipality			
	Gotse Delchev	Petrich	Satovcha	Hadzhidimovo
Number	144	243	68	46
Bone Density	144	243	68	46
the norm	85	130	50	24
osteopenia	50	70	17	20
osteoporosis	9	43	1	2
Thyroid	144	243	68	46
the norm	92	210	34	30
nodes	52	33	34	16
Laboratory				
the norm	144	232	63	46
High TSH	9	10	4	0
High blood sugar	17	3	1	0
High-level Vit. E.	1	0	1	3
Low Wit. E.	43	0	4	0

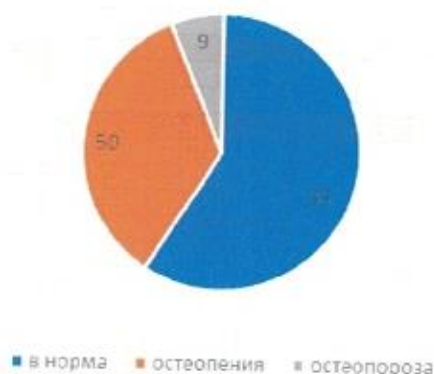
	Municipality			
	Gotse Delchev	Petrich	Satovcha	Hadzhidimovo
Number	144	243	68	46
Bone Density	100,00%	100,00%	100,00%	100,00%
the norm	59,03%	53,50%	73,53%	52,17%
osteopenia	34,72%	28,81%	25,00%	43,48%
osteoporosis	6,25%	17,70%	1,47%	4,35%
Thyroid	100,00%	100,00%	100,00%	100,00%
the norm	63,89%	86,42%	50,00%	65,22%
nodes	36,11%	13,58%	50,00%	34,78%
Laboratory				
the norm	100,00%	95,47%	92,65%	100,00%
High TSH	6,25%	4,12%	5,88%	0,00%
High blood sugar	11,81%	1,23%	1,47%	0,00%
High-level Vit. E.	0,69%	0,00%	1,47%	6,52%
Low Wit. E.	29,86%	0,00%	5,88%	0,00%



Костна плътност - Петрич

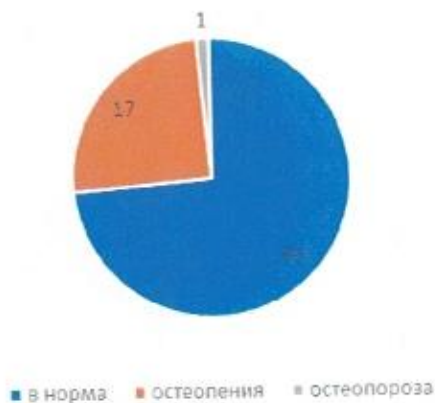


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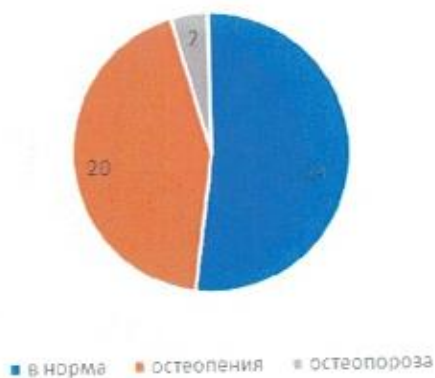




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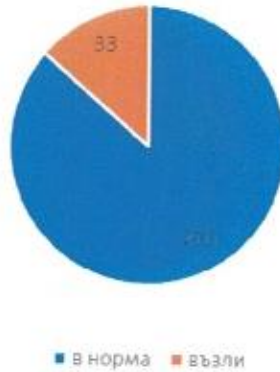


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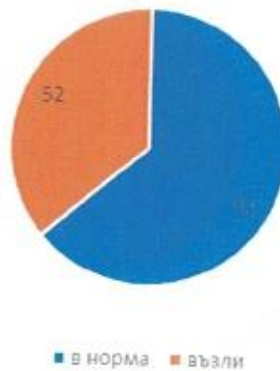




Щитовидна жлеза Петрич



Щитовидна жлеза Гоце Делчев



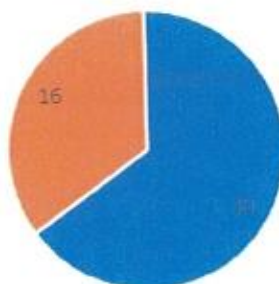


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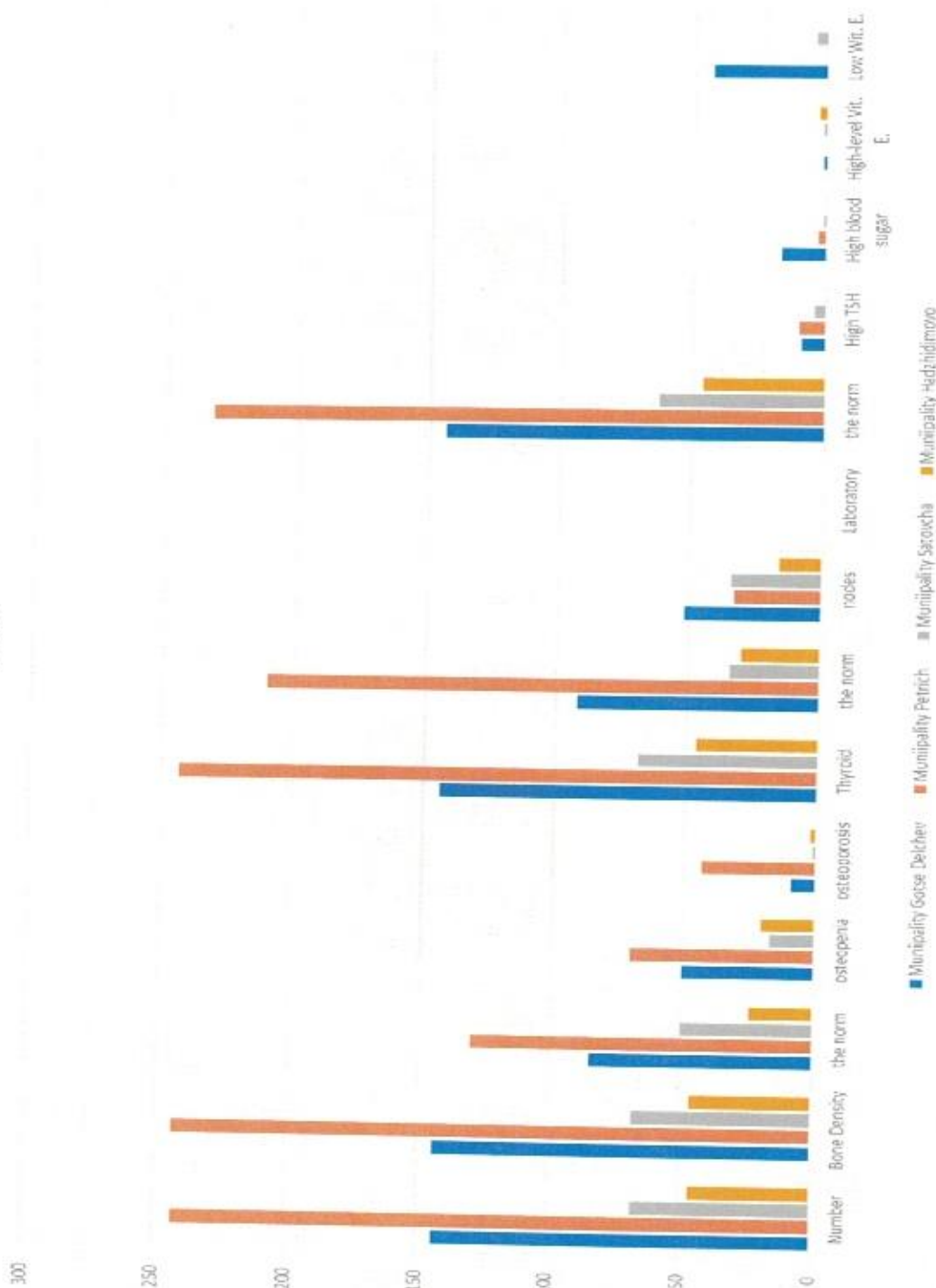
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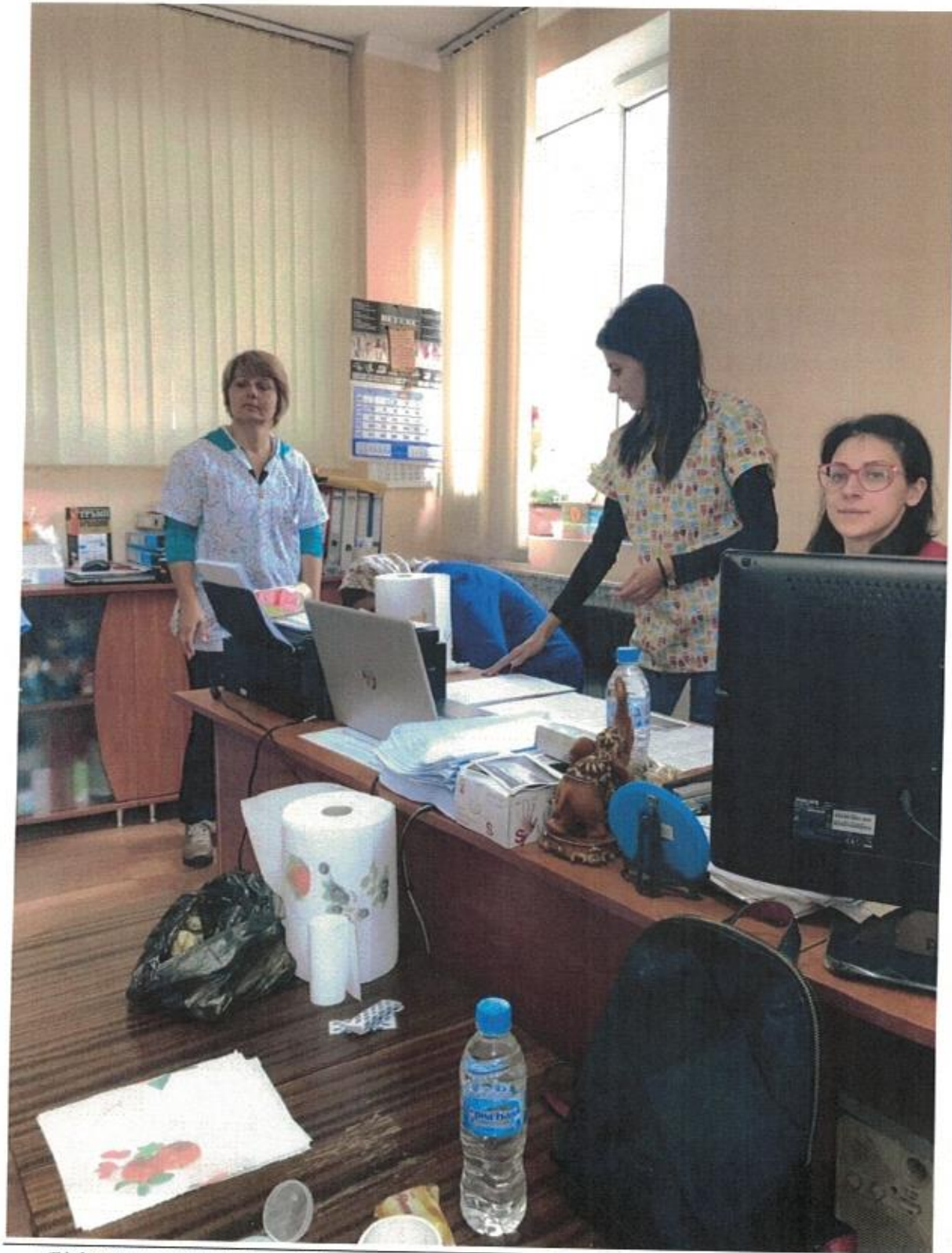


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Results

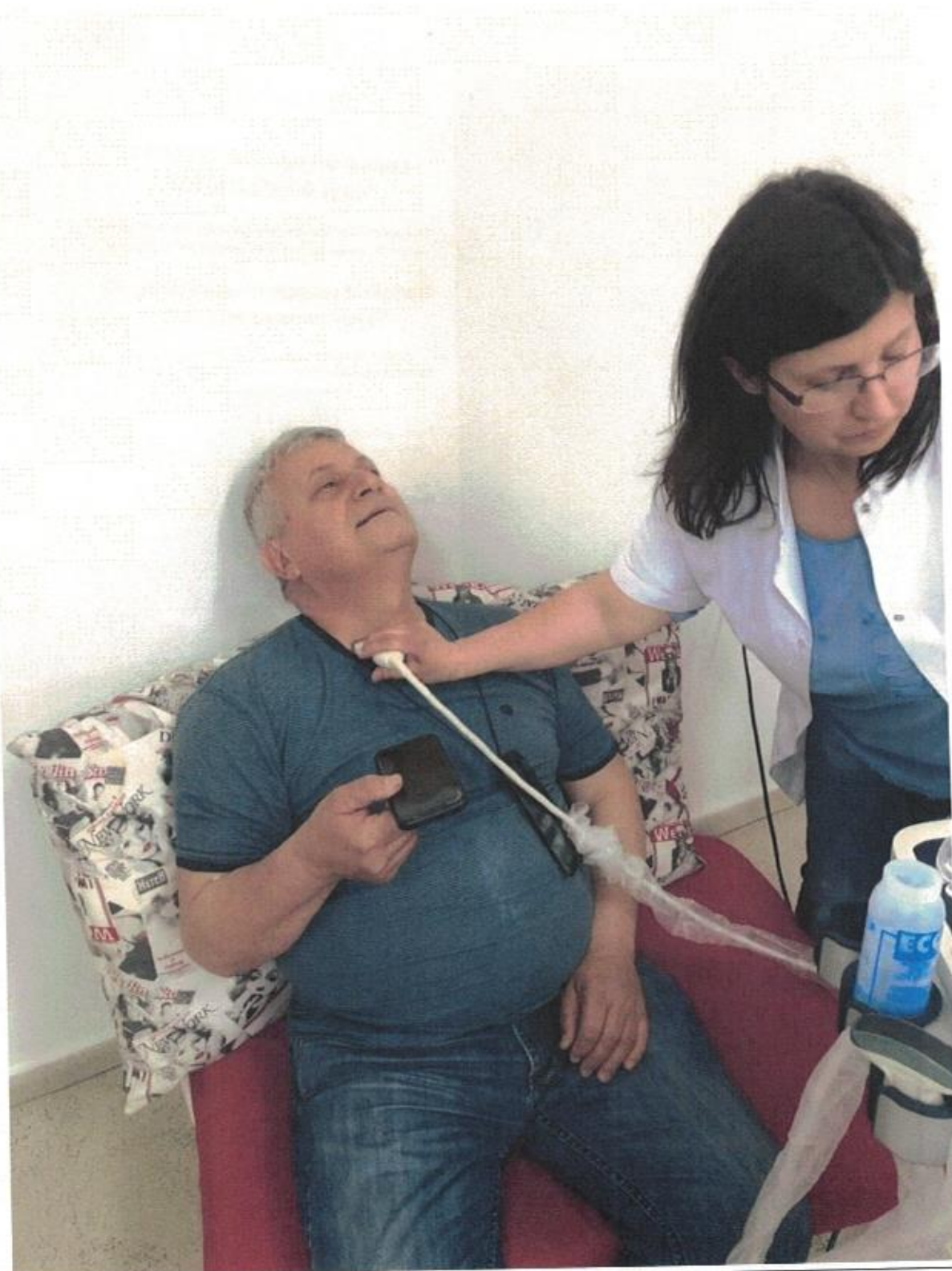




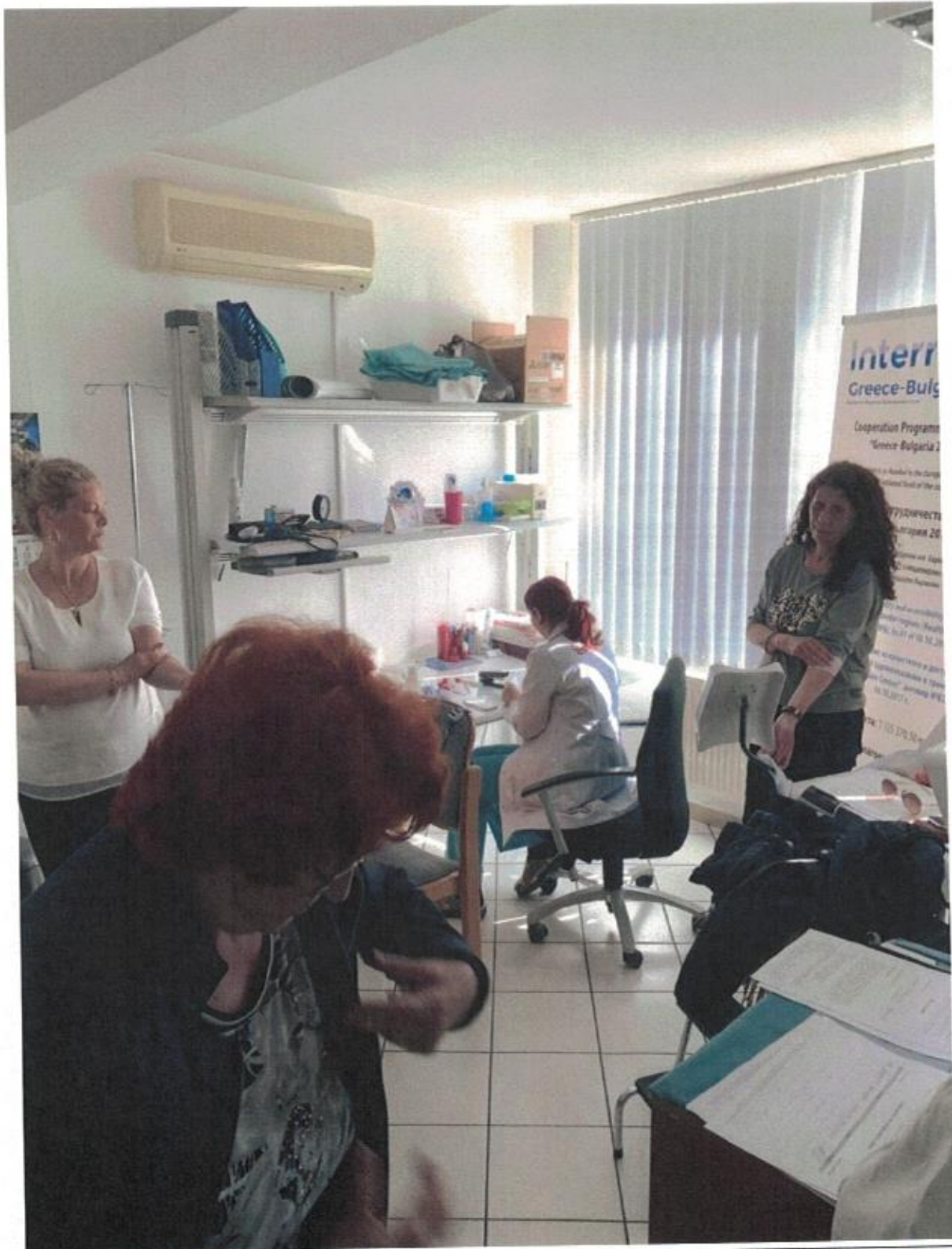




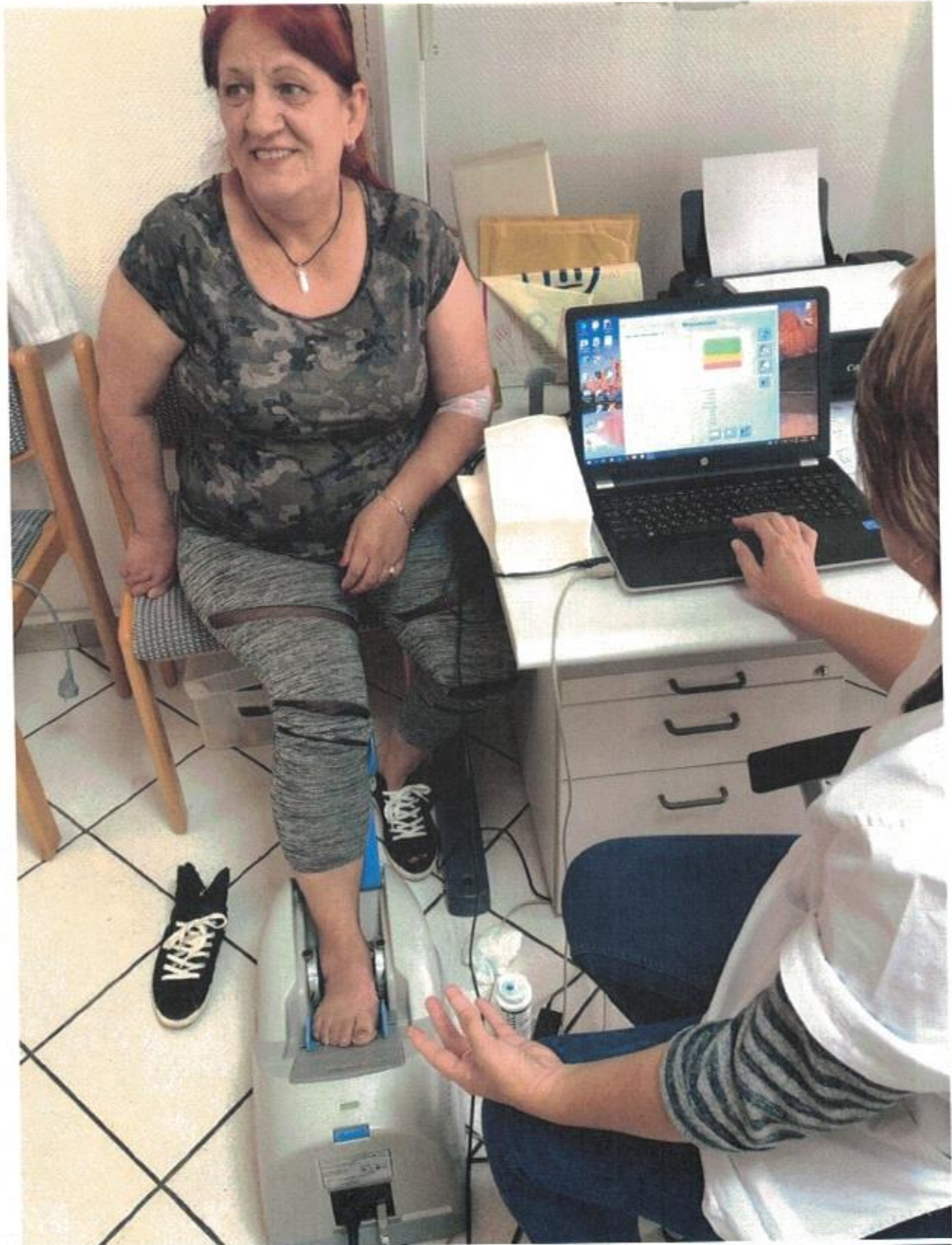


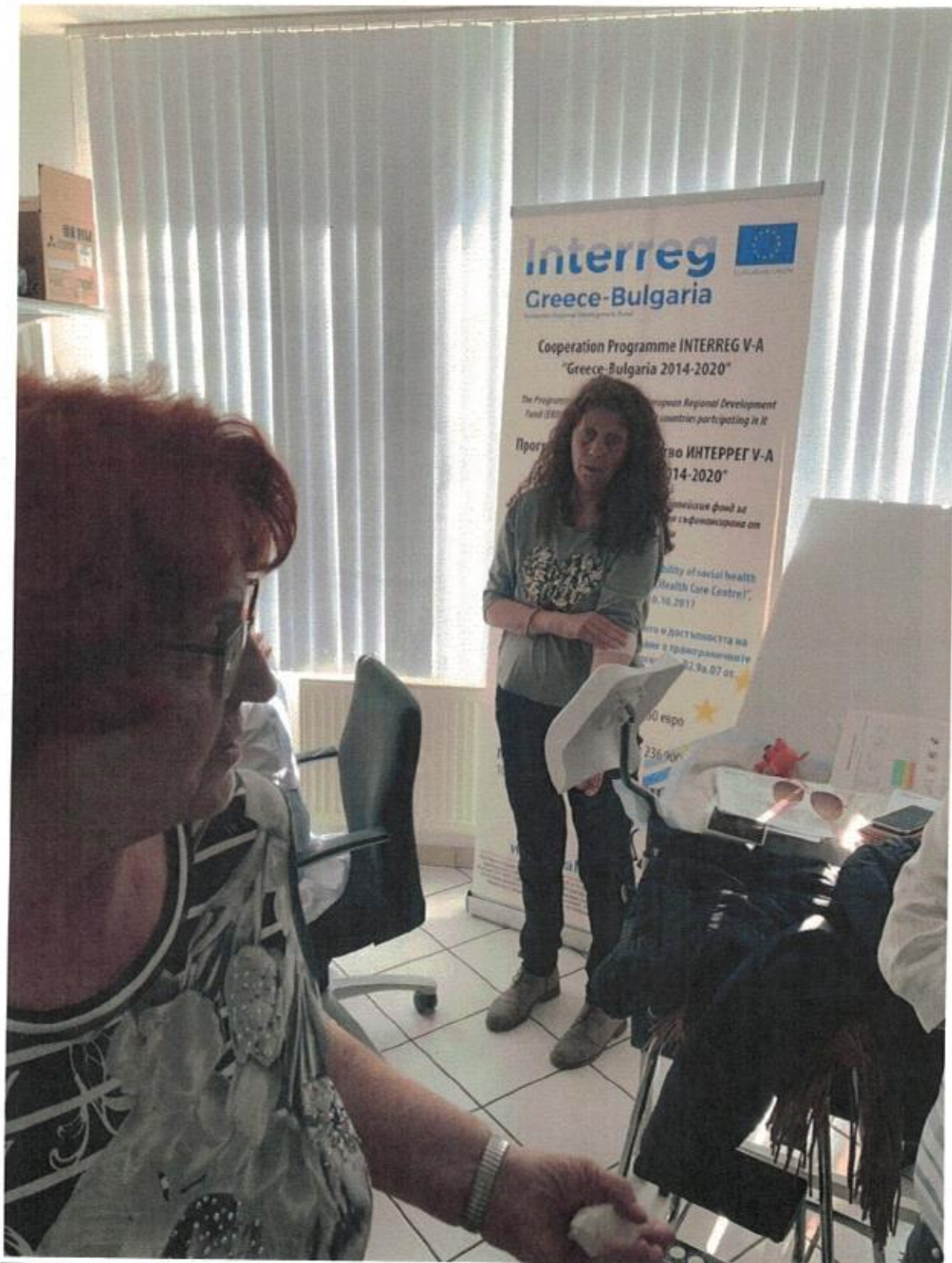


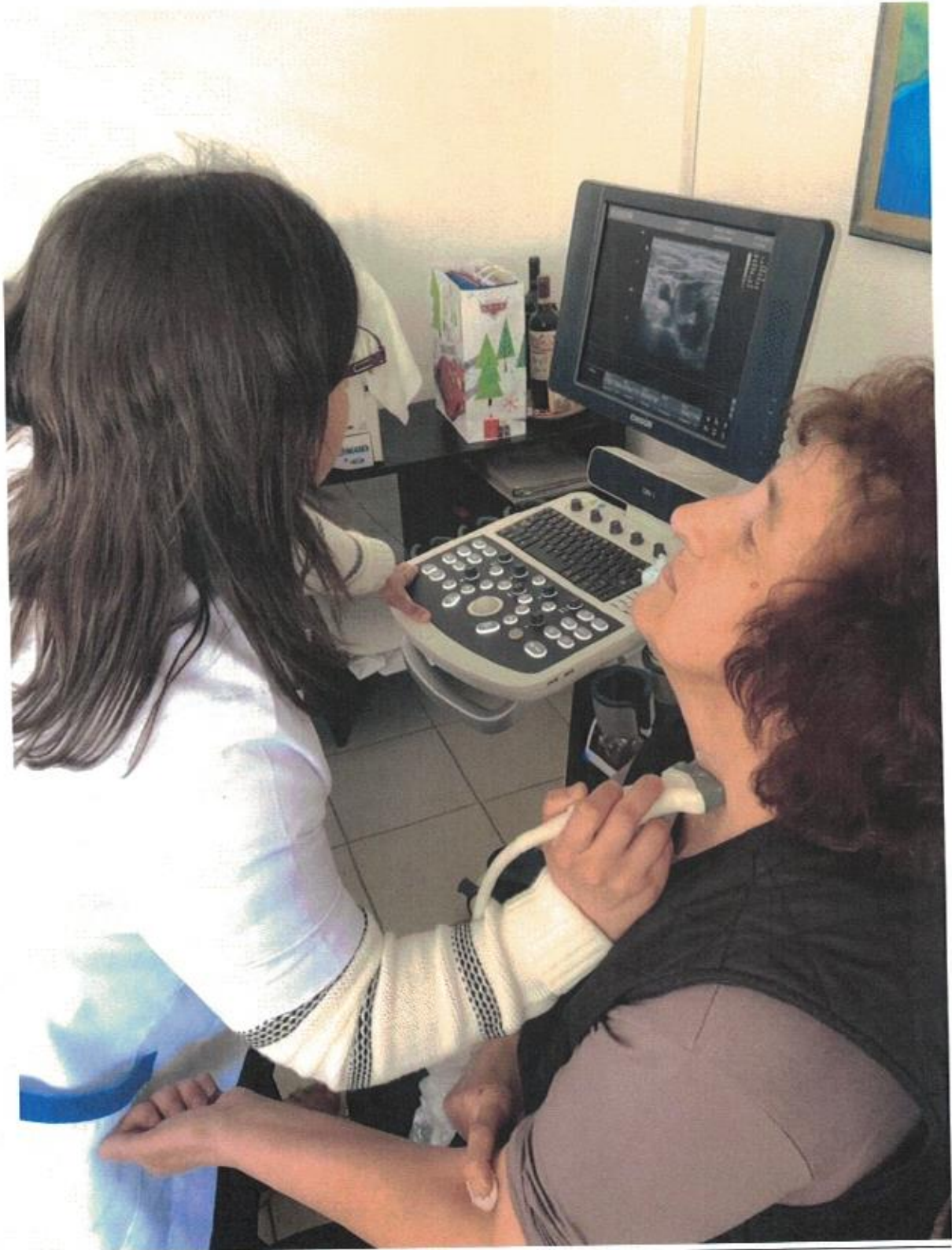




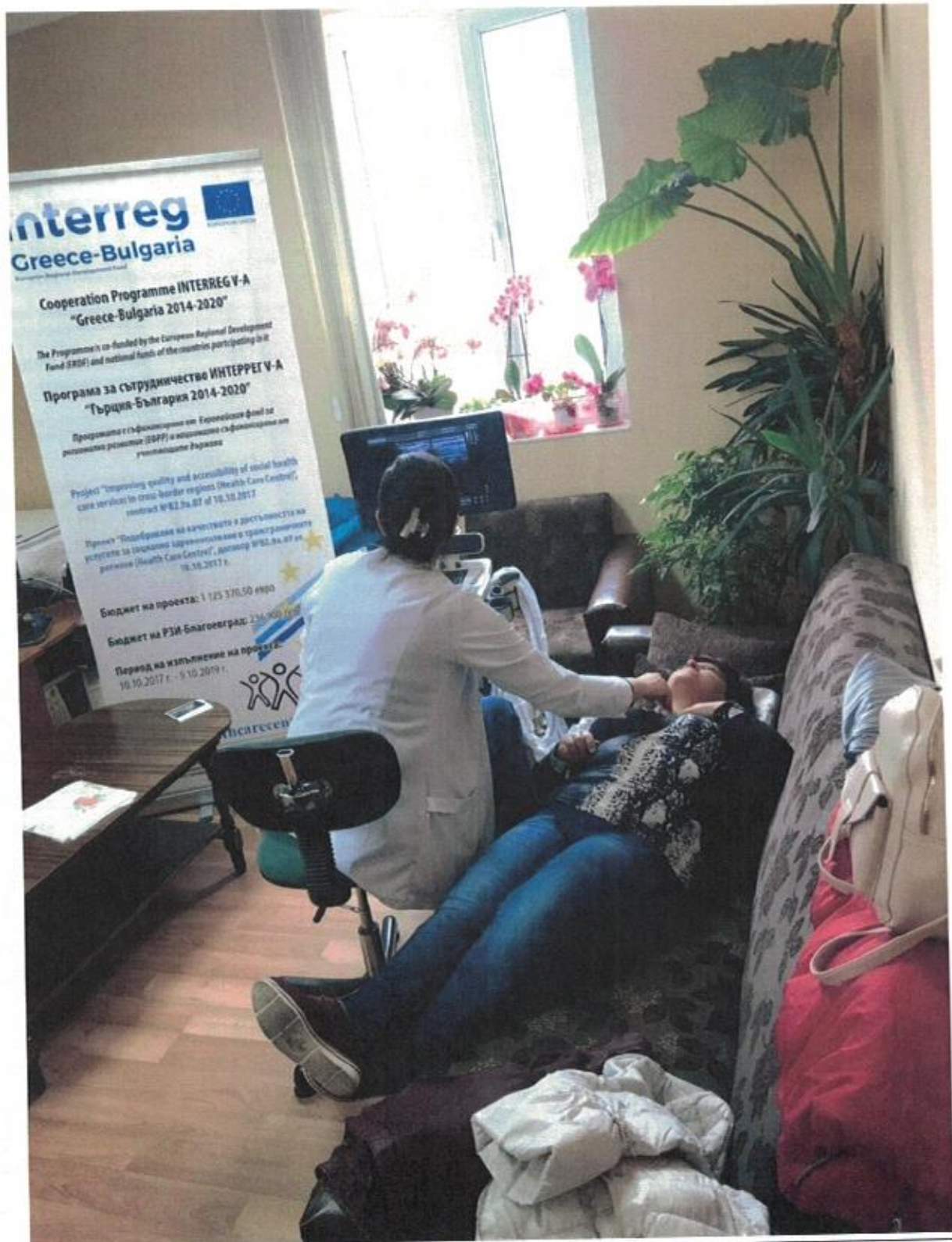




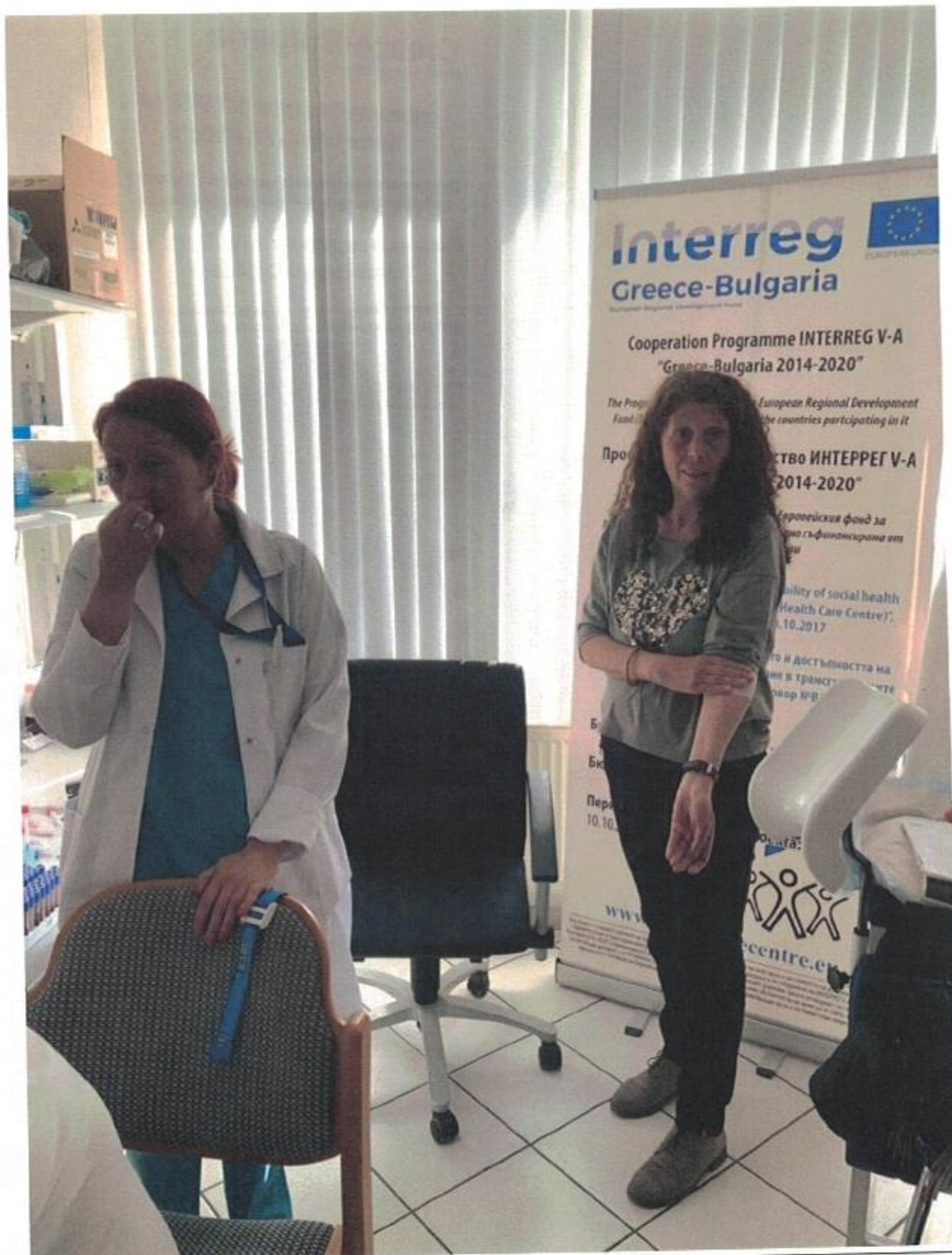






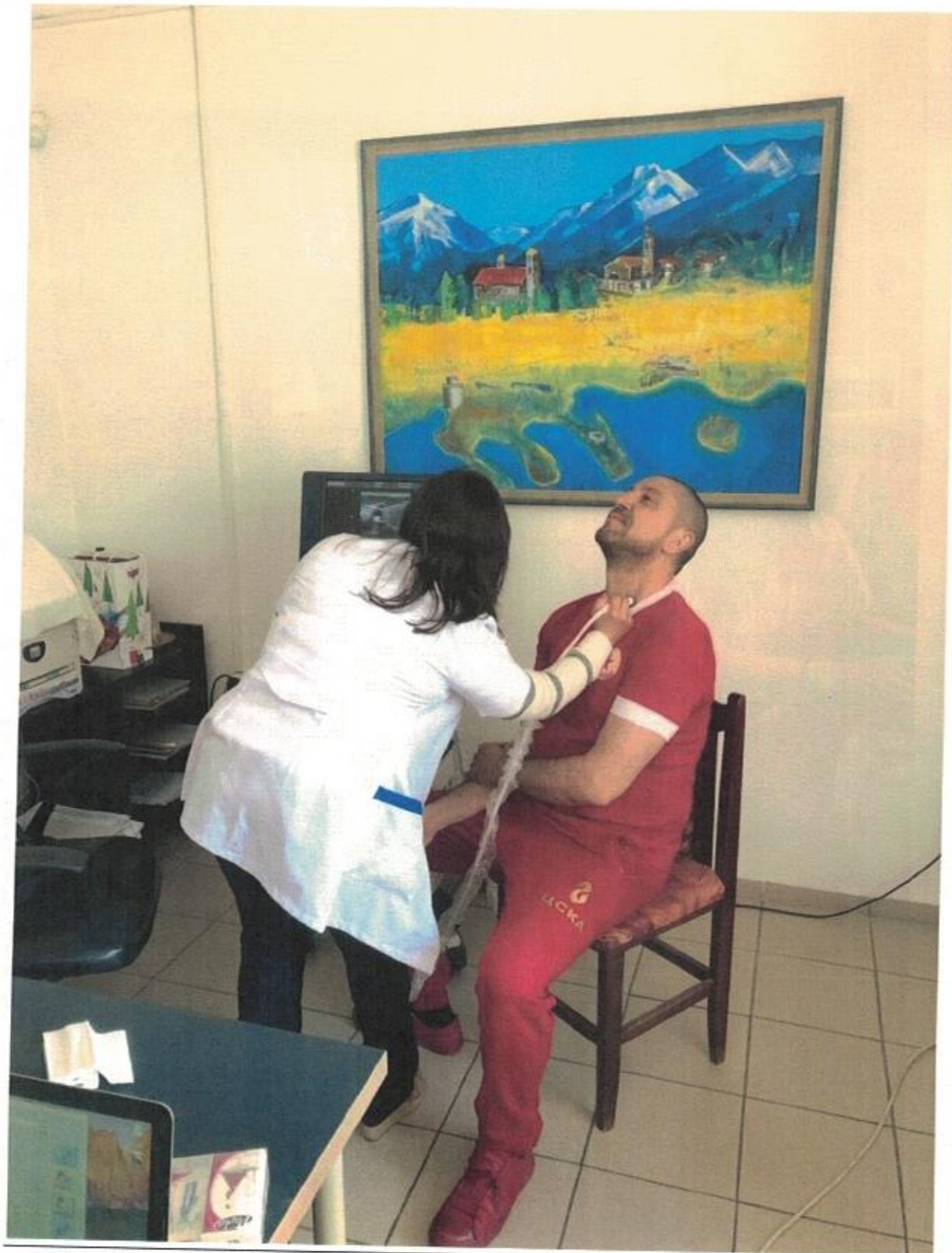




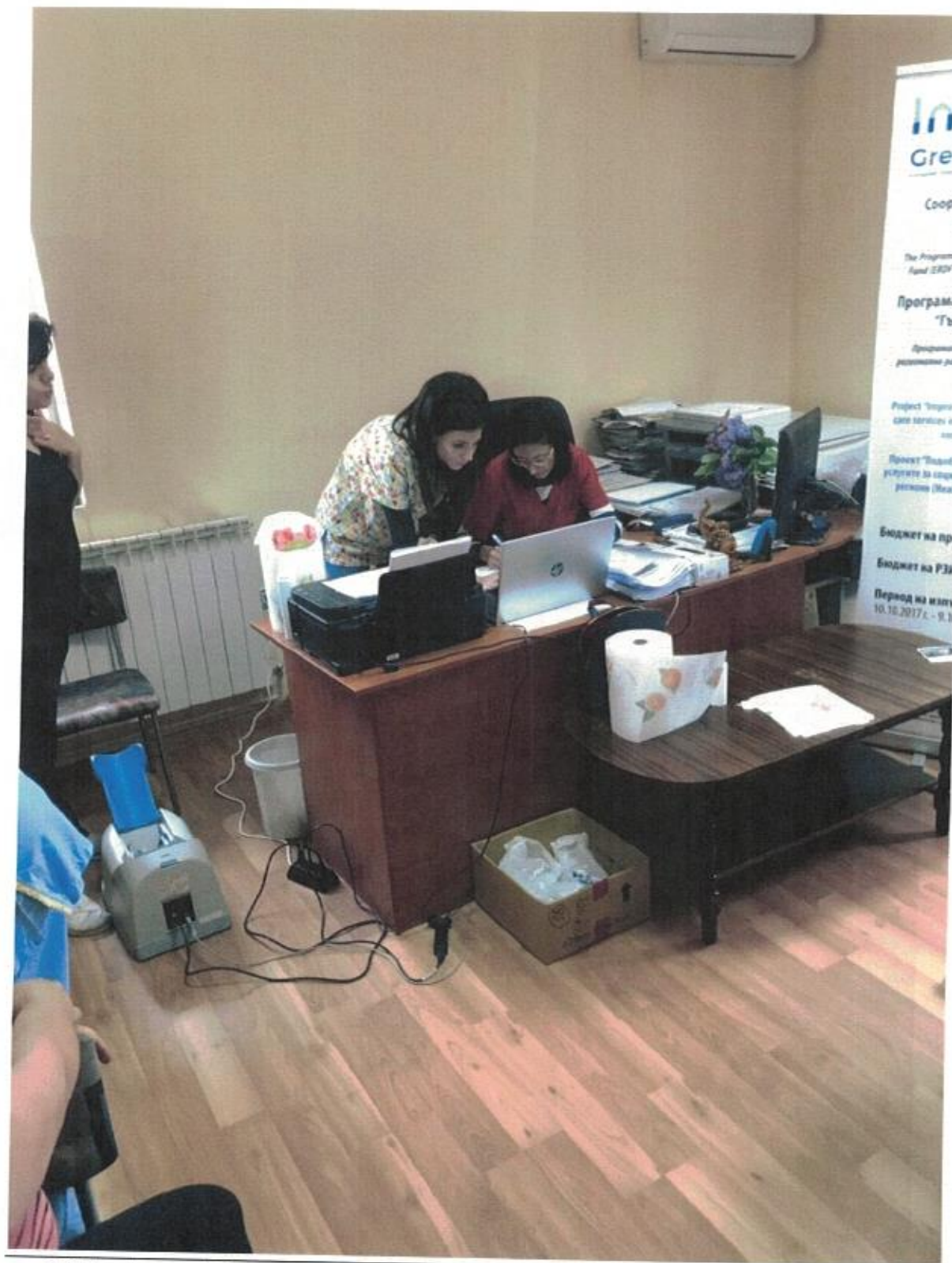






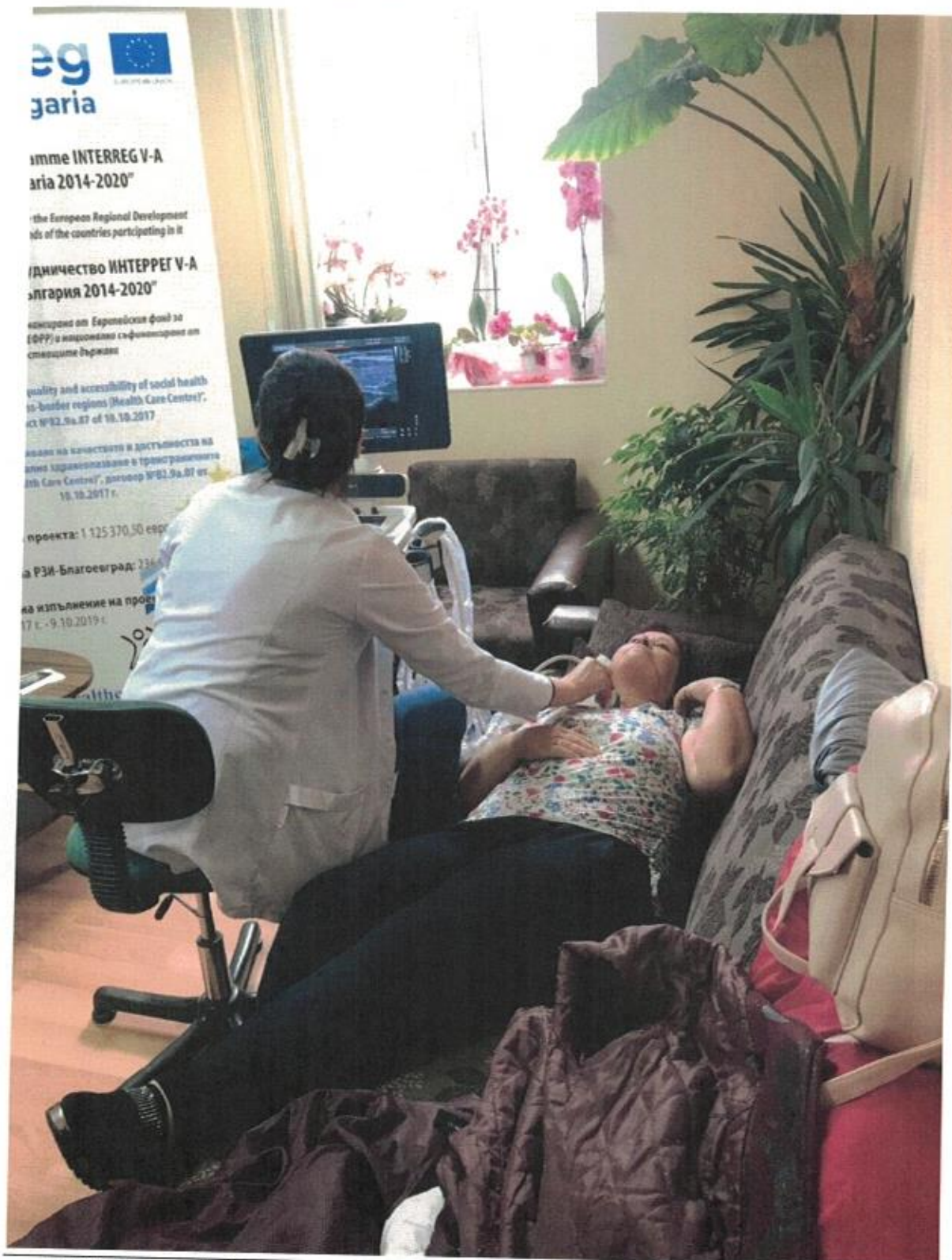






This document was created in the framework of Project №82.9a.07 dated 10.10.2017 "Improving the quality and accessibility of social care services in the cross-border regions (Health Care Center)", financed under the INTERREG VA Cooperation Program "Greece -Bulgaria 2014-2020 ", co-financed by the ERDF and nationally co-financed by the participating countries. The entire responsibility for the content of this document lies with the RHI - Blagoevgrad and under no circumstances can it be considered as reflecting the official opinion of the European Union, the Participating States, the Managing Authority and the Joint Secretariat.





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