

SPA THERAPY & COVID-19 ON THE EUROPEAN MARKET

A study and evaluation of best practices
in European Medical spa

Interreg InnovaSPA project



THERMAUVERGNE

Carried out by the European Spas Association



Executive summary

A study and evaluation of best practices in European Medical spa

Almost half (46%) of all post-COVID programmes began more than one year prior to the survey, and the other half (44%) 6-12 months before the survey. Their duration (86% of the programs) were typically 1-2 weeks or up to 3 weeks long. Very few programmes were less than a week or longer than 3 weeks. According to information gathered from the interviews, patients who stay longer than 3 weeks in a medical spa do so because their condition is slowly improving, these patients are financing the stay out of their own pocket. Providers report that more than 2/3 of patients seek treatment 4 -12 weeks after infection and 30% more than 12 months after infection.

The post-COVID treatments are mainly prescribed by general practitioners (GPs) but 50% of the patients are private payers – in other words commercial patients. Several patients come from primary or secondary care hospitals.

The most effective therapies in post/long-COVID treatment in a medical spa facility are as follows:

PROVIDERS' TOP answers: recognised local healing waters (natural mineral, and thermal waters), bioclimatic conditions (sea climate, mountain or pelotherapy), healing peloids, physiotherapy, CO2 gas/mofette, psychotherapy.

PATIENTS' TOP answers: inhalation – aerosol therapy, physiotherapy, methods of physical medicine, natural healing waters (external or internal use), climate-therapy, natural healing peloids (fango-mud-peloids), psychotherapy.

INTERVIEW PARTNERS' TOP answers: psychotherapy, physical medicine, group activities, exercises (dry or wet activities), oxygen-therapy, inhalations (aerosol-therapy), salt (healing) cave, mofette (just in Romania).

The research provides a very good starting point and overview of the current European post-covid handbook situation and the wishes of service providers.

We believe that further research, surveys on more focused topics or in-depth interviews could provide a lot more concrete information.

In addition, a broader understanding of market opportunities and the integration of marketing aspects into the provision of information on services could also help to reach additional clinicians.

INTRODUCTION

In the first phase of our study, we wanted to find out what basic information each provider could give us about their post-covid programmes. To this end, we asked the managers/colleagues of spas in different European countries for information on the following topics by means of a short questionnaire:

- the health system in the country
- the framework and funding offered by the health system in relation to post covid programmes
- what role medical spas play in treating Long Covid/Post Covid-Syndrome Patient/Guest
- the accepted dominant symptoms that result in patients going to the specialized spa facility
- statistics on the number of cases and treatments of post-Covid patients.

The second phase of our research consisted of quantitative and qualitative research.

Component 1:

A survey was given to a selection of thermal actors with the objective to measure post Covid treatment and establish good practices concerning " SPA THERAPY & COVID " both existing and implemented in European spas, in addition to formalizing the feedback of customers who have tested these offers.

Component 2:

Direct interviews with a selection of 8 European thermal actors: FRANCE, HUNGARY, LATVIA, LITHUANIA, LUXEMBOURG, SLOVENIA, SLOVAKIA, and ROMANIA.

THEORETICAL BACKGROUND

Long COVID is a condition wherein people continue to experience COVID-19 symptoms for longer than usual after initially contracting the SARS-CoV-2 virus.

Other terms for long COVID include post-COVID, post-acute COVID, long-tail COVID, and long-haul COVID. People with long COVID may refer to themselves as long haulers. Long COVID refers to when people continue to experience symptoms

of COVID-19 and do not fully recover for several weeks or months after the start of their symptoms.

Some research suggests that people with mild cases of COVID-19 usually recover within 1–2 weeks of contracting the initial SARS-CoV-2 infection. For severe cases of COVID-19, recovery can take 6 weeks or longer.

The World Health Organization (WHO) explains that some people may experience long-term effects of COVID-19, whether they required hospitalization or not. These long-term effects may include fatigue, respiratory symptoms, and neurological symptoms. Across the world, there may be more than 5 million cases of long COVID.

The CDC note a variety of symptoms for COVID-19. They also note that the symptoms that people most commonly report in long COVID are:

- Fatigue
- Shortness of breath
- Cough
- Joint pain
- chest pain

People may also experience:

- Brain fog, wherein they find it more difficult to think clearly and focus
- Depression
- Muscle pain
- Headache
- Fever, which may come and go
- Heart palpitations, or a feeling of the heart pounding

People may also develop long-term complications that affect the organs. These complications are less common but may include:

- Inflammation of the heart muscle
- Abnormal lung function
- Severe kidney injury
- A rash
- Hair loss
- Problems with smell and taste
- Sleep issues

- Memory and concentration difficulties
- Anxiety
- Mood changes

As the COVID-19 pandemic continues, clinicians are learning more about the long-term effects of the disease on a person's overall health. Some coronavirus patients continue to feel the effects of the condition months after initial infection, and therefore experience what is known as long COVID.

The National Institutes of Health (NIH) recently announced new findings that may have relevance to our understanding of long-term COVID. Their new study states the body's immune response to infection from COVID-19 damages blood vessels in the brain, causing neurological symptoms. The damage to the brain's blood vessels results from the body's natural inflammatory response to SARS-CoV-2. Patients who have had neurological symptoms of long COVID often experience headaches, memory impairment, and brain fog.

Researchers are not certain what causes the prolonged effects of COVID-19, but some possible causes of long COVID may include:

- A reduced or lack of response from the immune system
- Relapse or reinfection of the virus
- Inflammation or a reaction from the immune system
- Deconditioning, which is a change in physical function due to bed rest or inactivity
- Post-traumatic stress

Some research indicates that the lingering problems associated with long COVID-19 may be the result of injury to multiple organs, including the lungs, heart, and brain.

METHODOLOGY

Quantitative research was carried out using questionnaires (online and paper-based) in phase 1 in February-March 2022 (N=43) and in phase 2 (N=107) in May-June 2022. The questionnaires were available in English in all cases, and in addition also in the languages of the target countries (Italian, French, Czech-Slovak, Lithuanian, Slovenian, German, Hungarian, Serbian, Croatian, Latvian) in phase 2. Out of 12 questionnaires in 12 different languages, 6 languages were

answered (those not answered being: Croatian, Hungarian, English, Lithuanian, Italian).

In phase 1 the following 16 countries were represented:

| | | | |
|-----------------------|----------------|-------------------|-----------------|
| <i>Austria</i> | <i>France</i> | <i>Italy</i> | <i>Romania</i> |
| <i>Bulgaria</i> | <i>Germany</i> | <i>Latvia</i> | <i>Serbia</i> |
| <i>Croatia</i> | <i>Georgia</i> | <i>Lithuania</i> | <i>Slovakia</i> |
| <i>Czech Republic</i> | <i>Island</i> | <i>Luxembourg</i> | <i>Slovenia</i> |

The data received was organised and cleaned using Microsoft Excel software and then subjected to statistical analysis using IBM SPSS Statistics.

In the qualitative part of the research, a predefined set of questions were sent out (for details refer to table 1 below), complemented by personal in-depth interviews (July 2022) (N=8) with spa doctors, managers, and/or other professionals with insight into post-covid programmes in the eight countries selected. The interviews were conducted via an online platform (approximately one hour each) in English.

| Table 1: |
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| <p><i>1. What is the most common way for Long-Covid patients get to your location (own initiative or referral by a physician). Could you please describe the "usual process"?</i></p> <p><i>2a. Own initiative: What are the main motives for Long-Covid patients to choose your medical spa?</i></p> <p><i>2b. Physician referral: What are the most important criteria that qualify long Covid patients for a referral to your location?</i></p> <p><i>3. How long do long Covid patients typically stay in your location?</i></p> <p><i>4. How big is interest in the newly developed Long/Post Covid treatments? Where do most inquiries come from?</i></p> |

- 5. Are there particular long Covid symptoms, that you feel are particularly effective and/or successful with the long Covid treatment concept you have developed?*
- 6. What are the core treatment goals for long Covid patients at your location? Have you incorporated changes in the program later following your experiences?*
- 7. What are the most important treatments (balneology treatments) for long Covid patients at your medical spa?*
- 8. What alternatives do long COVID patients have in your country, if they cannot get a referral or cannot afford treatment at your medical spa.*
- 9. What else do you think could be important to help us to draw a comprehensive overview of what long Covid patients can expect at your location?*

A focussed data extraction process was applied using the recordings of the interviews concerning a set of predefined sections of information, which were then complemented by other items which were mentioned by several interviewees.

All items were documented using a structured documentation sheet. In a second step, a data synthesis process was run to develop a pattern of evidence of successful interventions in a spa environment that might be helpful for the optimization of existing and/or the setting up of new programmes.

RESULTS

Almost half (46%) of all post-COVID programmes began more than one year prior the survey, and the other half (44%) 6-12 months before the survey. Their duration (86% of the programs) were typically 1-2 weeks or up to 3 weeks long. Very few programmes were less than a week or longer than 3 weeks. According to information from the interviews, patients who stay longer than 3 weeks in medical spa do so because their condition is slowly improving, these patients are financing their treatment out of pocket. Providers report that more than 2/3 of patients seek treatment 4-12 weeks after infection and 30% more than 12 months after infection.

The post-COVID treatments are mainly prescribed by general practitioners (GPs) but 50% of the patients are private payers, in other words commercial patients. Several patients come from primary or secondary care hospitals. In more than half of the included countries there is a financial support/contribution for post-COVID patients in medical spas. In some countries medical spas do not only focus on classic balneological therapeutic entities but provide medical rehabilitation programmes as well.

Europe's unique attractions and medical services in spas and health resorts using natural remedies are an effective support for patients suffering from side effects and long-term ailments. Another core competence is the prevention and strengthening of the immune system.

Some specialized health resorts in Europe have treated an extremely large number of patients, but they are rather the exception. Examples are Bad Sulza in Germany that treated 2.847 patients by June 2022 and Heilsustofnun in Iceland that has treated more than 2000 patients (this health resort and spa in Iceland was the first in Europe to provide post-corona treatment services including natural remedies in their therapies).

The best cases are Slovakia, Luxembourg, Iceland where there is a strong state support and legal background. The Czech Republic, Lithuania or Slovenia have finance from the government. In some countries like Romania, Serbia, Croatia, Latvia, Germany, Italy there is special contract with regional or state health insurance companies to provide care to post Covid/long Covid patients.

An important consideration in categorising each country was the number of patients that were treated in the post-COVID programme up until the time of the survey. According to this criteria, four categories are evident: less than 50; between 51-100; between 101-300; more than 300. Here Czech Republic, Latvia, Lithuania, Romania, Slovakia and Slovenia could be categorized as 'best examples' with a high number of treated patients in this study.

The age range of the patients in a post-COVID offer has a wide spectrum covering young, middle age and senior patients. The majority of middle and elderly age groups were almost proportionally represented in the sample (N=107), but there was a limited number of young patients. The age ranges were as follows 25-34 years old (1.9%), 35-44 years old (9.3%), 45-54 years old (26.2%), 55-64 years old (27.1%), 65-74 years old (21.5%) and 75 years or older (14.0%). This was in correlation with the answers received from the providers: 86% of patients were between 41-60 years old and 12% older than 60 years old.

The dominant symptoms of the patients treated in medical spa facilities:

- PROVIDERS' TOP 5 answers: respiratory problems, musculoskeletal problems, neurological problems, cardiovascular problems, mental health problems.
- PATIENTS' TOP answers: fatigue, weakness, ache, respiratory problems, musculoskeletal problems, cardiovascular problems (problems with blood pressure), problems with concentration.
- INTERVIEW PARTNERS' TOP answers: There are several somatic symptoms: chronic fatigue, tiredness, headache, asthenia, dyspnoea, ache, loss of smell, musculoskeletal problems, motoric neurological problems, anxiety, respiratory problems, but also psychological issues such as mental health problems, sleeping disorders.

When asked how they perceived their health in general (scale 1-6: 1=very bad and 6=very good) at the time of completing the questionnaire, the calculated mean value was 3.57 (median 4.0; Std. deviation 1.318; Variance 1.738), which falls between fairly bad and fairly good. The vast majority of respondents gave a rating of 4 or 5, meaning that they reported fairly good and good conditions, 21.5% indicated bad health in general.

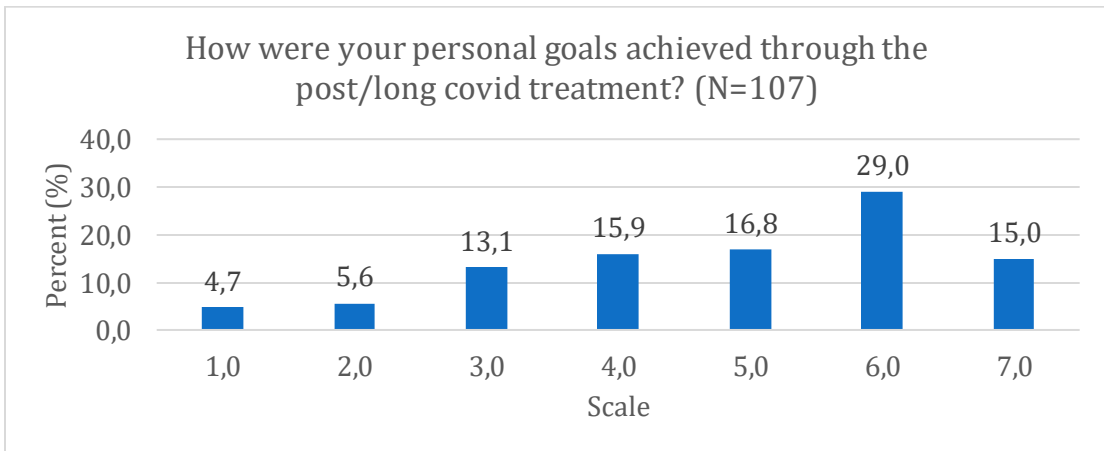
The symptoms from COVID-19 moderately and above disrupted the patients' work (Mean=6.15, Median=6) and family life (Mean=6.234, Median=7). The patients' social life/leisure activities were mainly disrupted (Mean=6.514, Median=7). The research found that for many workers (patients in working age), the coronavirus and subsequent post-COVID symptoms caused limitations in their ability to work. This meant that they had to be away from work for longer periods of time, and their income reduced as a result. The reasons for not being able to work were not only due to illness, but also weakness, concentration problems, difficulty breathing or lack of physical fitness.

Further research on the relationship between post-COVID illness and work or absence from work may provide more precise information.

The respondents had to give answers on a 0-10 scale (0=not at all; 5=moderately; 10=extremely) regarding seven different areas connected to the quality of their life. The results show that improvement in quality of life and well-being after COVID-19 (or post/long covid) requires the most action. The responses on the scale show that the averages are moderate in their opinion for the need for intervention. Responses to this question were analysed by cross-tabulation analysis.

| <i>Cross-tabulation analysis - Descriptive Statistics</i> | | | | |
|-----------------------------------------------------------|-------------|--------|----------------|----------|
| | Mean | Median | Std. Deviation | Variance |
| My quality of life | 5.51 | 6 | 3.06 | 9.37 |
| My well-being | 5.46 | 6 | 3.05 | 9.33 |
| My efficiency | 5.24 | 5 | 3.10 | 9.60 |
| My mobility | 5.18 | 5 | 3.16 | 9.99 |
| My daily activities | 5.17 | 5 | 3.02 | 9.12 |
| My pain | 5.12 | 5 | 3.20 | 10.26 |
| My social contacts | 4.64 | 5 | 3.17 | 10.05 |

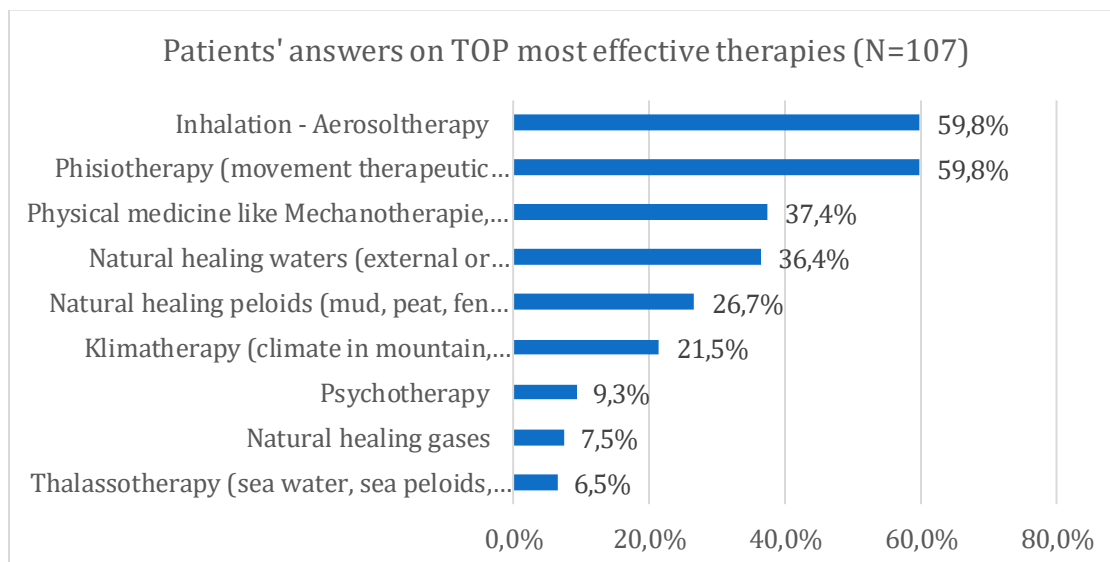
How were your personal goals achieved through the post/long covid treatment? The patients' goals achieved 'a little better than expected' result. However, in the figure we see that 29% of the respondents gave the answer: 'better than expected'. In total, 23.4% rated the treatment as 'worse than expected'.



There is a significant relationship between the respondent's health status and how his/her personal goals were achieved through the treatment. The better health they reported, the better they achieved their personal goals during treatment. There is a significant inverse relationship between the respondents' health status and how these complaints affected him/her at the end of the stay. The better their health status, the less these factors affected them during the treatment period.

The most effective therapies in post/long-COVID treatment in medical spa facility:

- PROVIDERS' TOP answers: recognised local healing waters (natural mineral, and thermal waters), bioclimatic conditions (sea climate, mountain or pelotherapy), healing peloids, physiotherapy, CO₂ gas/mofette, psychotherapy.
- PATIENTS' TOP answers: inhalation – aerosol therapy, physiotherapy, methods of physical medicine, natural healing waters (external or internal use), climate-therapy, natural healing peloids (fango-mud-peloids), psychotherapy.



- INTERVIEW PARTNERS' TOP answers: psychotherapy, physical medicine, group activities, exercises (dry or wet activities), oxygen-therapy, inhalations (aerosol-therapy), salt (healing) cave, mofette (just in Romania).

| | | Natural healing waters (external or internal use) | Natural healing peloids (mud, peat, fen peat) | Natural healing gases | Klima-therapy (climate in mountain, forest clima, cave) | Thalasso-therapy (sea water, sea peloids, sea climatic conditions) | Phisio-therapy | Physical medicine | Inhalation - Aerosol-therapy | Psycho-therapy |
|--------------|-------|---------------------------------------------------|-----------------------------------------------|-----------------------|---------------------------------------------------------|--------------------------------------------------------------------|----------------|-------------------|------------------------------|----------------|
| CZECH-SLOVAK | n=49 | 26 | 16 | 6 | 11 | 3 | 22 | 16 | 42 | 1 |
| FRENCH | n=17 | 6 | 10 | 0 | 0 | 1 | 10 | 3 | 9 | 8 |
| GERMAN | n=8 | 3 | 0 | 0 | 0 | 1 | 6 | 4 | 6 | 0 |
| LATVIAN | n=16 | 1 | 2 | 0 | 8 | 1 | 14 | 5 | 3 | 0 |
| ROMANIAN | n=3 | 3 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 0 |
| SLOVENIAN | n=14 | 0 | 0 | 0 | 2 | 1 | 11 | 11 | 2 | 1 |
| SUM | N=107 | 39 | 28 | 8 | 23 | 7 | 64 | 40 | 64 | 10 |

In Europe many climatic health resorts are situated by the sea and high mountain ranges (Germany, France, Baltic countries, Netherlands; Bulgaria, Romania, Slovenia, Slovakia etc). These health resorts have to meet many conditions, for example it must be proven that the climatic conditions have an extremely positive effect on human health and well-being according to expert opinions of health ministries. Carbon Dioxide water baths represent a method used for the prevention and treatment of cardiovascular diseases in some spa resorts in Romania, Czech Republic, Slovakia, Hungary, Italy, Germany. Carbon Dioxide water baths increase arteriolar blood flow in the skin, the vasodilator effect being directly proportional to the carbon dioxide concentration in the mineral bath. Mofettes are natural post volcanic gas which contain concentrations of 90-98% CO₂ with cutaneous vasodilator effects, increasing cerebral and muscle blood flow (Romania, Czech Republic). The CO₂ gas has a dilatation effect on the peripheral blood vessels, thus enhances blood circulation in the muscles and connective tissues

It is important that patients not only receive the treatments listed in the post-COVID package, but also receive treatments according to their individual needs – depending on the patient’s severity of the disease. Individual needs and requirements should be determined and planned by a specialist – medical doctor. The treatment goal should be to reduce their symptoms in the first week.

It is also very important and appreciated by patients if there is a follow-up (e-mail or phone) after their stay and that they feel that the treatment staff are genuinely interested in their health and their improvements.

INTERVIEW RESULTS:

Data extraction

Structured evaluation of the recordings of 8 in-depth interviews revealed the following pattern of typical/successful long Covid programmes in 8 best practice facilities in 8 different countries.

Qualitative interviews with the European thermal health facility actors in FRANCE; SLOVAKIA; LITHUANIA; HUNGARY; LATVIA; LUXEMBOURG; SLOVENIA and ROMANIA

In the qualitative part of the research, a predefined set of questions was sent out, complemented by personal in-depth interviews that were conducted (July 2022) (N=8) with spa doctors, managers, and/or other colleagues or professionals with insight into post-covid programs in the eight countries selected.

In FRANCE; LITHUANIA; LUXEMBOURG; SLOVENIA and ROMANIA interview partners represented were from a medical spa or a rehabilitation center and in LATVIA, HUNGARY; SLOVAKIA they were represented by the country.

The interviews were conducted via an online platform (approximately one hour each) in English.

France:

Interview partner: *Nathalie NEGRO, Responsable du Centre Nutritionnel in Brides-les-Bains Cedex*

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| Medical treatments are prescribed by a medical doctor - these are covered 65% by the health insurance, but mini-cures are not prescribed, and these are paid by the patient (out-of-pocket). People can read articles in journals or magazines about the treatment, TV reports can be seen - so the marketing is strong. |
| Stay: 3 weeks with balneotherapy, or 6-9 days private patients |
| Main symptoms: dyspnoea, cough, tiredness, neurologic symptoms, smell problems, problems with concentration, headache, musculoskeletal problems |
| Age group: different - young and old as well, but the most of them average 40 years old (working population) |

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| Experience: At the beginning a consultation with spa medical doctor, psychologist or physiotherapist is made, so the therapy is created depending on the symptoms. There are specific workshops for different symptoms, to give the right solution for the problems. The quickest changes are in smell and breathing. Tiredness is treated with balneotherapy treatment. There are group treatments in swimming pool (hydro kinesiotherapy) - however there are patients are afraid of doing the therapy, because of tiredness. They are advised to just do short periods and then repeat. |
| Speciality: Patient follow up (e-mail - questionnaire, or telephone call) 6 months after the therapy to ask them how they feel and give advice, if it is needed. Patients appreciate this. |
| Treatments: same as in respiratory tract or Rh treatment grid PLUS interviews/consultations, sports activities, workshops, breathing trainings, meditation |
| Start: 2021 July |

Hungary:

Interview partner: *Prof. Dr. Zoltán SZEKANECZ, Medical University of Debrecen*

Post-COVID programmes are mainly in hospitals (these programmes are financed by the insurance system) and in a few medical spas (4 spas were mentioned). Outpatient treatments are provided if the patient lives close to the hospital, otherwise there is inpatient treatment – this is privately financed by the patients. In spas there are different programs, which are not just for the post-COVID patients (musculoskeletal diseases, respiratory problems), and these are combined for the post-COVID patients and take 7 days or 14 days.

Main symptoms: cough, breathlessness, lung inflammation, dyspnoea, loss of smell.
Treatments: treatment for upper respiratory system, physical activities (all the 4 spas have different protocols)

Latvia:

Interview partner: *Gunta USPELE, Health Travel Latvia*

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| 2 possible ways to get to the spa: 1. Post-COVID patients are sent by a doctor to undertake a post-COVID treatment; 2. Commercial Patients (private payers) |
| 1. Covered by the national health insurance fund; 2. Private payers (There are cases, when a patient has a covered treatment package, but he/she can buy extra treatments out-of-pocket) |

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| It is medical rehabilitation program, not spa. Duration: average 10 days (7-14 days) - Resort rehabilitation center Jaunkemeri (not SPA, but special hospital). In some case patients stay 3 months (private) |
| The patients have the opportunity to choose the rehabilitation center (there are 5 of them, plus 3 medical spas). Difficult cases do not have the option of choosing, those patients are referred to the best centres. |
| Main symptoms: respiratory problems, cardiovascular diseases, neurology, musculoskeletal problems |
| Experience: There are different therapies - individualized, what is the best for the patient. Surprisingly many private payers in the system. 50%-50% of state-funded post-Covid/Long-Covid therapy with an estimated budget of 3 million euros per year. |
| Treatments: mineral waters (drinking and bath), other natural resources like mud, climate therapy, occupational therapy, physiotherapy, speech therapy, psychotherapy, halotherapy, etc... |

Lithuania:

Interview partner: *CEO of Egles Sanatorija Edgaras BRIEDYS, Chef Doctor Arvius Balcius*

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| 2 possible ways to get to the spa: 1. Post-COVID Syndrome - hospitalized patients, some of them from intensive care units (16-18 days stay); 2. Commercial Patients (8-9 days) (private payers) |
| 1. Covered (0-18 days) by the national health insurance fund; 2. Private payers |
| Main symptoms: tiredness, dyspnoea, weakness, respiratory problems, cardiovascular diseases, mental health problems, neurology, musculoskeletal problems, sleeping disorders, organic insomnia |
| Age group: different - young and old as well (the symptoms are the same) |
| Experience: Treatment goals are to reduce negative symptoms - depending on the severity of disease (personally adapted during the first appointment with the physician). The procedures are the same, only intensity varies according to the client's condition - it is not the patient's choice. After 7 days the majority of patients get better (and after 18 days of stay there are nice changes). The patients receive different (individual) treatment - prescribed by the doctor. Exercise helps. It is important if the patient understands the usefulness of the treatment. If any treatment or part of it is bad for the patient, the treatment is skipped. |
| Treatments: 5 areas - physiotherapy, natural factors (mineral waters, mud etc.), massage with vibre elements, adapted natural factors, psychotherapy. Other integrated treatments: climate therapy, CO ₂ gas, mofette, kinesiotherapy, psychotherapy, halotherapy, 'RESPI CARE' |

Luxembourg:

Interview partner: *Chef rheumatologist and Psychologists of Therme Mondorf and CEO Mr. Carlo DIEDERICH*

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| Patients with problems are transferred by the gatekeeping system. Multidisciplinary aspects: specialist, psychotherapist see the patient. |
| Average stay: 3 weeks |
| Main symptoms: dyspnoea, insomnia, musculoskeletal problems - joint/muscle pain, tiredness, loss of taste and smell, panic respiratory problems |
| Experience: Loss of self-confidence is the main problem! Patients do not trust their bodies. Individual consultations and some individual treatments. Group treatment and mobilisation is the most important (wet and dry training). Consultation with psychologist. We can also refer to the therapy as lockdown recovery. It's not just pain that needs treatment. |
| Treatments: inhalation, physical training, individual physiotherapy, taste training, consultation with psychologist, thermal water, fango, mud, peloids (On average, each patient has 55 treatments (plus 3 doctor's appointments) in the 3 weeks), nutritional consultation |
| Start: 2021 August The pilot project of the Ministry of Health started in August 2021 and ended with good results in December 2021, so that from January 2022 outpatient and inpatient care after the Covid and long-term Covid illness will be financed by the state health insurance. |

Romania:

Interview partner: *Iuliana MANOLACHI, Chef Cardiologist Covasna, Rehabilitation centre Mofetta,*

Translation: Iulianan TASIE-ANA, Hotels and Board Member ESPA

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| Some patients go to resort directly as a part of prevention (preventive packages) - they do not have big or complex health problems. 50% of the patients come by already knowing the resort. After the population learned about post-Covid treatments, we were able to attract a large majority of new target groups. Many are also interested in the topic of prevention. This was not the case before Covid19. |
| 14 days stay |
| The treatments can be performed both on the basis of health insurance and by purchasing treatment packages by patients. Financed by the government: 6-10 days up to 100% |
| Main symptoms: fatigue, myalgia, respiratory problems, mental health problems, cardiovascular diseases, neurology, musculoskeletal problems |

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| Experience: Asthenia is the most important, plus 30-40% of the patients have loss of taste and smell and the majority of them is psychically affected because they cannot recover. Consultations, early advice, lifestyle change is important. Activity combined with asthenia and treatment to increase the blood circulation. Guide package. |
| Treatments: mofette, mineral waters, fango, mud, peloids, climate therapy, seawater, thalasso, salt water inhalation, oxygen therapy, respiratory gymnastics, baths with iodine mineral water, baths with bicarbonate water with sulphur |
| Start: 2020 September |

Slovakia:

Interview partner: *Dr. Janka Zalesakova, President Slovak Spas Association*

SLOVAKSPAS, climate health resorts were the FRIST IN THE EU with accepted full paid post corona programs - more than 20 medical spas are involved

The dominant symptoms to send patients to the specialized medical spa facility:

- A. Respiratory problems
- B. Cardiovascular diseases
- C. Mental health problems
- D. Neurological problems
- E. Musculoskeletal problems.

RECOGNISED BY MEDICAL EXPERTS/STATE AUTHORITY:• Balneotherapy (healing waters, healing peloids, healing gases) • Climate-therapy (climatic conditions mountain,caves,forest) • Physiotherapy • Ergotherapy • Physiatriac treatments as thermotherapy, mechanotherapy, electrotherapy, hydrotherapy, light-therapy • Psychotherapy • Speech therapy • Diet therapy • Health education

Slovakia - ITB Medical Destination Awards Winner 2022

Medical tourism with new skills/competences and updated forms of treatment that help reduce the suffering of long-term and post-Covid patients and even mitigate the risk factors that lead to serious health problems such as:: Obesity prevention and spine schools with educational programs have been implemented in recent years through the well-aimed work of the Slovak Spas Association and Health Resorts. Mental health prevention programs have been launched in the past year, particularly for people at risk for chronic stress leading to burnout. This exemplary development and implementation in health tourism in connection with the national health system, also in financial terms, is exemplary in Europe. The complexity of developing new health programs in Slovakia,

training of professionals, following the medical results by research and thus also convincing decision-makers from health insurance companies and the Ministry of Health is a good example for everyone involved in health tourism.

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| Prescription/referral by a general practitioner or doctor-specialist (list of indication spectrum that are financed by the insurance system is part of the law). Each spa has according to natural healing resources recognised specific indication spectrum |
| If the patient has several symptoms, the dominant symptoms are important to send patient to the particular/specific spa with indication spectrum that suit to main healthy problems. |
| 3 weeks fully paid spa therapy in five indications groups are possible: respiratory diseases, cardiovascular diseases, neurological diseases, musculoskeletal disease, psychiatric diseases |
| Big interest. Patients come from the health care system. There is also possibility for self-payers (stay app. 10 days) |
| Main symptoms: respiratory problems as dyspnoea, cough, low oxygen saturation, neurological symptoms as motoric and sensory disorders, cardiovascular problems as blood pressure disorders, peripheral arteriopathy, postural tachycardia, palpitation, breath shortness, also chronic fatigue, sleeping disorders, tiredness, cognitive problems, anxiety and depression |
| Experience: the first most important issue is to motivate the patients (group activities, special talks about the health problems and reasons). Different therapy for different age groups. Explanation and evaluation of the treatment is important. Special testing the physical and psychic condition and health status of the patient before and after the treatment. |
| Treatments: natural local healing resources for internal and external use, aerosol therapy, climatic conditions suitable for treatment (natural pelotherapy and mountain climatic conditions) physiotherapy individual and in group, hydro kinesiotherapy, massage, oxygen therapy, nordic walking, – psychotherapy, education, whole spectrum of physical therapies as electrotherapy, light therapy, ultrasound... in each case individual spectrum prescribed by medical doctor according to actual health status |
| Start: 2020 October for self-payers and from May 2021 paid by health Insurance companies |

Slovenia:

Interview partner: *Dr. Branko SIBANZ, Terme Dobrna, Chef Doctor and Virologist*

The Slovenian Spas have prepared 12 programs based on the knowledge of conditions of COVID-19 patients. All the programs include balneotherapy and are targeted mainly on respiratory, cardiovascular, psychological, neurological and fatigue problems.

- Slovenian medical spas carry out all of these programs on patients who are sent on a two weeks rehabilitation.
- The years of experience we gained are ideal for applying to patients who suffer from severe post COVID-19 problems.

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| 3 possible ways to get to the spa: 1. Post-COVID Syndrome - hospitalized patients, ill, cannot get home (30-60 days stay); 2. Long-COVID Patients - got ill with little problems (14-21 days stay); 3. Commercial Patients - telephone or email reservation, many of them having long-COVID (information on web sites) |
| 100% covered by the Ministry of Health - Through a public tender, some health resorts have been accepted as partners in the health system for post covid / long Covid treatments. Also Privately paying patients |
| Main symptoms: musculoskeletal problems, poor condition, fatigue, concentration disorders, insomnia, cardiovascular problems |
| Experience: different (individualized) treatments are good - these depend on the patient's condition. At the beginning passive treatments and inhalation is prohibited in the beginning! |
| Treatments: inhalation, breathing exercises, thermal mineral baths, workout, massage, mud, group workouts, drinking treatment |
| Start: January 2021 |

Iceland (no video interview, just written answers to the questions):

Interview partner: *Heilsustofnun Spa and Clinic, CEO Poriri HARALDSSON and Margrét GRIMDOTTIR, Director of Nursing*

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| Post-covid patients are most often referred by their primary care physician, few referrals are from cardiologists and pulmonologists |
| The National Health Insurance Agency in Iceland payed fully for post-covid treatments at the 3 rehabilitation centers from 2020 until end of 2021. Today their co-payment is the same for post-covid treatments as for other rehabilitation treatments at Heilsustofnun. Everybody should be able to get a referral to us from their medical doctor if there is a valid medical reason. Others are taken care of by their primary care physician with outpatient physical therapy for example. |
| Stay: always 4 weeks with possibility of 1-2 weeks extension. |
| Main symptoms: The unusual physical and mental tiredness with worsening after exertion, headache, sleep problems, anxiety. |

Experience: The core treatment at Heilsustofnun for our post-covid patients with unusual fatigue (almost everyone) is to teach them pacing; they learn to manage their physical, mental, social and emotional energy. Today less cardiac rehabilitation and more relaxation therapies are used for these patients. There is a specially trained physiotherapist who supervises the treatment for all post-covid patients, most of them are able to take mild exercise tolerance test upon entering the program and again before discharge. They also fill out questionnaire about physical, mental and social health (HTL), in addition to questionnaire about sleep and fatigue

Treatments: Pacing, various water treatments (water gymnastic, floating, kneipp, hot and cold tubs, swimming, various water exercises, sauna, steam bath), organized relaxation times with guidance lying on a floor and/or in a lazy-boy chair, massage, meditation.

Start: 2020 August

One good example is also from Georgia, winner of Innovation Awards 2021

Treatment at Post COVID Health Center includes a course of rehabilitation at Georgian balneal resorts

The EVEX hospital center provides complete laboratory, instrumental diagnosis and timely detection and treatment of any possible disorders caused by infection in one area. For the first time in Georgia, Post COVID Health Center of the Caucasus Medical Center and **Sairme Resort** offer a rehabilitation course after Covid. The combination of properly selected Balneological and medical treatments completely restores the state of health. Balneotherapy is one of the most effective means of rehabilitation in after Covid period. It helps restore the microcirculation in the body, which is most impaired as a result of Covid infection. Balneological treatments are important for improving blood circulation in the body, as a result of which all organs and tissues are better supplied with oxygen or nutrients and toxins are expelled.

The Czech Republic piloted the first study about Post Corona Patient, collecting Datas and summarizing the result of patients:

The study has proved that the comprehensive spa rehabilitation program in Ensana Health Spa Hotels Marianske Lazne to be an effective therapeutic method ensuring the improvement of physical, mental, social and working capacity of the patient. There is a significant positive effect on post-covid complications, especially concerning lung functions and breathing.

The study was WINNER by ESPA Innovation Award 2021

DATA SYNTHESIS

1. Long Covid health care demand covered by national social security schemes

In most countries distinct treatment programmes for Long Covid are covered by national health insurance schemes.

1a. Characteristics of coverage

- Typically, referral from a general practitioner or some kind of gate keeping organization is required
- Programmes typically fit in the respective national system of provision of rehabilitation (and thus require 1 leading symptom for allocation to a corresponding medical specialty)
- Typically, this type of programme is scheduled for at least 3 weeks of inpatient treatment

1b. Characteristics of patients

- Most patients suffer from sequelae of severe forms of COVID-19 requiring inpatient treatment, typically in an intensive care unit
- Leading symptoms typically are a direct consequence of the acute phase (e.g., major damage to the lung structures and function, immobility, post viral fatigue)
- Patients typically lack physical power and self esteem to care for themselves and/or their convalescence

1c. Role of spas

- Spas providing this type of (rehabilitation) programmes typically run some kind of rehabilitation hospital
- Therapeutic modules relying on natural resources and/or are based on balneological concepts are often part of a programme, generally well accepted, but typically play a minor role in the therapeutic concept proper

2. Long Covid programs offered for privately paying clients

2a. Characteristics of clients/patients

- All age groups with particularly high proportion of “best agers”
- Most individuals already had received some kind of treatment covered by their respective national security system

- Symptoms are not necessarily “severe” from a medical standpoint, but typically cause discomfort from the perspective of the client
- Typically, residual symptoms as reported by clients include breathlessness, musculoskeletal aches, memory function problems, and loss of energy/fatigue
- Typical symptoms observed by doctors and therapists include pre-existing chronic conditions like diabetes, hypertension and/or autoimmune problems. Preconditioning personality traits include lack of self-esteem, perceived vulnerability, and depressive mood/mood disturbances (the latter may be a cause or a consequence of long covid symptoms).
- Objectively, the severity of symptoms is typically less pronounced (indeed, clients must be able to make a decision to buy a programme and must have sufficient intrinsic energy to organize the journey and to make their way to the spa).

2b. Characteristics of programmes

- The typical duration of a programme is 1 or 2 weeks
- Packages typically include accommodation
- The most consistent therapeutic pillar is “spa therapy”, in particular application of the natural healing resources of the respective spa (for instance, baths, mud packs, CO2 applications, radon baths, salt inhalation, massage and others).
- Light physical exercises seem to be relatively well tolerated, in particular when the “healing environment” of the spa is also included. This contradicts many notions in publications on long covid treatment concepts stating that physical exercise is often poorly tolerated but may be explained by the fact that as yet scientific communications almost exclusively report on patients suffering from severe forms of Long Covid (unlike typical cohorts in this study).
- Somatic symptoms seem to represent just one side of the coin, with the other side being probably only poorly characterized as “psychosomatic”. Strengthening of self-esteem, self-efficacy and self-confidence may play a key role to (accept and) overcome lingering long covid symptoms.
- Unprejudiced social interaction may be another key factor of a successful programme, and respective modules can easily be implemented in particular into programmes that are organized in groups of participants (starting, for instance, once or twice a week).
- It seems that many clients are not only open, but keen to understand what has been going on, how their body responds, and what they can do about it (including optimizing their lifestyle).

2c. Role of spas

- For centuries, spas have built upon their unrivalled position as centres of holistic health embracing medical, psychological, and social aspects.
- For many (if not the majority of) individuals suffering from the sequelae of COVID-19 the complex “healing environment” of a spa together with the balneological therapeutic concept of repeated regulative stimuli, and sufficient time and space to “let it happen”, may be associated with a markedly more pronounced perceived effectiveness than other, more focussed medical concepts.
- Thus spas could be a key element to fight, control and overcome the highly prevalent sequelae of the pandemic.
- Finally, typical features of the post covid syndrome, are not at all specific to long covid, but rather well known (and well documented in the literature) as typical sequelae of a wide variety of severe and/or chronic health disturbances such as myocardial infarction, cancer, various viral infections – and even menopause. What all these “conditions” have in common is that they have rarely been taken seriously by the medical profession (“don’t make a fuss – you won’t die of it”). Long Covid may therefore be key for a revival of a long-term future market without competition from other contemporary medical concepts.

RECOMMENDATIONS:

- To continue lobbying national health authorities and national health insurance providers for a better recognition and co-financing of thermal spa therapies for post-covid rehabilitation and long covid treatment.
- To better position European spa therapy in the rehabilitation of post-COVID patients and in the treatment of long COVID to general practitioners and gate keeping organizations for more effective prescription.
- To create personalized, tailor-made and multi-dimensional programs to treat the physical, mental and social conditions of patients.
- The results show a clear signal that promotion of prevention and health education is urgently needed. These measures should be financed significantly by Public Health.
- To underline the role of balneotherapy in the prevention of certain chronic diseases.
- To communicate the holistic health approach of thermal spa resorts in Europe based on their natural healing therapies in natural healing environments emphasizing the quality of their competent medical staff.
- Emphasizing the specifics of spa treatment: “social disintegration” (beneficial in diseases with persistent consequences), personalization of treatment, absence of iatrogenia, treatment potentially long-term, economic benefits for both patients, payers and society (related to public health policies).
- To scientifically evaluate the interest in thermal treatment of long Covid (in the absence of a randomised controlled trials which is difficult to envisage for ethical reasons, by a follow-up of cohorts) and to identify a profile of responder patients (in terms of predominance of symptoms, age of the infection, co-morbidities, history of treatments etc)
- To constitute a working group of the thermal spas involved in this service to encourage exchange and feedback, and to allow a continuous improvement of services. Positioning (in addition to the public sector) of the thermal intervention in the care path of the patients as the interface to the hospital, the aftercare centers, the city medicine.

DISCUSSION AND CONCLUSION

There are differences in funding between programmes, which affects the number of patients that can be treated and the length of the programme. In some countries, spas seem to play a major role in medical rehabilitation within their national social security systems. It can be said that the national health insurance systems finance the treatment of patients who are sent to medical spa because of a medical indication.

Given the fact that we observed an overwhelming consensus that the spectrum of symptoms long covid patients are complaining of is broad, often not well specific and typically not limited to one problem dimension (as, e.g. neurology, musculoskeletal pain, or fatigue), programmes for long Covid patients that had been implemented into existing structures of health care provision (as, for instance, rehabilitation) seem to have the advantage of a quick and successful market access at the expense of „prioritizing” the area of intervention. This means, for example, that patients referred to an orthopaedic clinic or hospital based on complaints of musculoskeletal pain may get excellent medical support for this very problem, but markedly less for other („accompanying”) problems.

It turned out that facilities which provide services within the respective national health service typically get patients “transferred” by means of a gate keeper organization (e.g. a Long Covid Centre) or service (e.g. general practitioners or outpatient clinics). This does not only play a role concerning compensation but also concerning patient characteristics. Patients who have been referred seem to suffer from more severe forms of Long Covid and/or are typically transferred soon after the onset of symptoms (or discharge from an intensive care unit).

In contrast, clients booking a programme to be paid out of their own pocket may have gone through some sort of treatment provided by the national health care system before (which may probably not have been convincingly successful from the point of view of the patient), suffer from more subtle, yet subjectively unacceptable symptoms.

Patients who pay out of their own pocket may choose to come in for treatments - in this case, it is advisable for the specialist available at the spa to examine the

patient and determine what main problems the patient needs treatment for with particular emphasis on the patients' personal demands. One of the main reasons is the different general health statuses. Our many respondents said 'bad' when they were asked about the general health status. The second reason is that the study points out that there are many different types of patients (some with chronic diseases, some are younger, others are representatives of the elderly group). The symptoms of post-COVID syndrome have a wide range, but there are similar complaints that particularly affected the patients (aches, respiratory problems, tiredness). There is a significant relationship between the respondents' health status and the fact how his/her personal goals were achieved through the treatment. The better health they reported, the better they achieved their personal goals during treatment. The better the patient's health status, the less these factors affected them during the treatment period.

Hotel services make up a large part of the package cost, which is why the prices are relatively high. In order to reach private (paying) clients, marketing strategies should be developed, not only professional descriptions, but the information on services or products should be presented to prospective clients and interested parties in the form of readable, article-like presentations.

Balneological/spa treatments

Different natural resources are available in different places and countries, as they have different natural characteristics. What they all have in common is that this type of medical approach is not normally available outside of a spa (town). It seemed therefore sensible to particularly focus on these therapeutic entities in terms of attractivity as well as perceived effectiveness for the clients.

Since natural resources differ widely between spas, post-COVID programmes are also based on different protocols and apply the environmental conditions and specificities of each country. In our study the TOP 3 most effective therapies are related directly with the dominant symptoms of the patients treated in medical spa facility (depending on the country and spa!):

- Inhalation (aerosol therapy) – e.g.: Czech Republic and Slovakia,
- Physiotherapy – e.g.: Latvia, Luxembourg, France, Slovenia, Slovakia
- Other forms of Physical medicine –e.g.: Slovenia, Czech Republic, Slovakia.
- Psychological interventions to foster self confidence
- Social interaction (therapeutic modules offered as “group therapy”).

LIMITATION

There were some limitations during the project:

Unfortunately, during our quantitative questionnaire survey, not all of the providers and contacts involved completed patient questionnaires, so the results obtained only reflect the views and patient opinions of about half of the target group. In research, there was sometimes a limitation of the time limit for the scores, which affected the lower sample element count. In the future the higher the sample size, the more robust the position can be presented to decision-makers.

Today the efficacy of a treatment approach is typically scrutinized by a particular methodological approach, the so called randomized controlled trial (RCT), where participants would be randomly allocated to 2 or more groups which only differ in terms of one particular therapeutic component (which may also be some kind of “placebo treatment”). Differences in outcomes between groups can thus be quantitatively attributed to a specific treatment component. This methodological “golden standard” is, however, extremely costly and time consuming. Therefore, most research into the effects of treatment of Covid-19 and/or its sequelae worldwide relies on so called observational studies (the very type of study that has been chosen for this study). This approach is certainly useful to draw decisions for or against particular procedures.

The research gives us a very good basis and overview of the current European post-covid patients care situation and the wishes of service providers. We believe that further research, questionnaires on more focused topics or in-depth interviews could provide a lot more concrete information. In addition, a broader understanding of market opportunities and the integration of marketing aspects into the provision of information on services could also help to reach additional clinicians.

It is important that therapies are not only used to alleviate post COVID symptoms, but that attention is also paid to the management of chronic diseases that may be affecting the overall health of patients.