



Nongovernmental Organization  
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**THE 68° GENERAL ASSEMBLY  
AND  
INTERNATIONAL SCIENTIFIC CONGRESS  
OF THE WORLD FEDERATION  
OF HYDROTHERAPY AND CLIMATOTHERAPY  
(FEMTEC)**

**THERMAE  
AND  
MEDICAL WELLNESS**

*Integration between Science,  
Economy and Tourism*



**Forte Village Resort  
(S. Margherita di Pula - Cagliari, ITALY)**

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**30<sup>th</sup> September - 4<sup>th</sup> October 2015**



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## **PREFACE**

Thermal medicine is one of the oldest forms of western therapy and, in that respect, should be considered as a traditional medicine (according to the definition of the World Health Organization).

Based on the above, the “Thermae” as an integrated set of natural resources, facilities and services, can be seen as a meeting point among different forms of medical culture to offer therapy and rehabilitation, as well as health preservation options. Indeed, a more comprehensive definition of the physical and psychic wellbeing of people calls for the acknowledgement of a deep transformation of some key words of the welfare system. For that is necessary inside the “Thermae” an integration with the “Medical Wellness”. The “scenario” is changing and we, as specialists, have a new challenges: scientific, social and economical.

It’s important also the role of patient/user who will be involved in this changing process and coordinated in the European Association of patients and users of health SPA’S.

***What happens in the world of Thermae/Wellness? How we can manage the changing process? What we have to do?***

**These are some of questions or focal points which will be presented and discussed during the FEMTEC Congress.**

In this perspective our Federation is planning a strategic cooperation also with the **Global Wellness Institute (USA)**, one of the most important Organization in this field, specially concerning the **Researches, Training, Tourism and Ecosocial Aspects**.

**The location of the Congress is at the FORTE VILLAGE RESORT (Cagliari, Italy) one of the best World’s Leading Resort, where sea water, medical services, physical treatments and leisure are completely integrated.**

***Pr. Umberto Solimene***  
**FEMTEC President**



## **SCIENTIFIC COMMITTEE**

**Belaitar M.** (Algeria), **Bender T.** (Hungary), **Bonsignori F.** (Italy),  
**Bulekbaeva S.** (Kazakhstan), **Cantista P.** (Portugal), **Cerina A.** (Italy),  
**Cho K. D.** (Korea), **D'Alessandro G.** (Italy), **Dubois T.** (France),  
**Ferruzzi A.** (Italy), **Fluck I.** (Hungary), **Gurnari G.** (San Marino),  
**Jannotti Pecci C.** (Italy), **Ledesma Rosa R.** (Cuba), **Loboda M.**  
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**Oueslati R.** (Tunisia), **Oyama M.** (Japan), **Ponikowska I.** (Poland),  
**Rasker H. J.J.** (Holland), **Razumov A.** (Russia), **Roques Ch.** (France),  
**Santuari A.** (Italy), **Sgobba T.** (Italy), **Solimene U.** (Italy),  
**Surdu O.** (Romania), **Trofimov E.** (Russia), **Veicsteinas A.** (Italy),  
**Vitale M.** (Italy), **Zaremba B.** (Slovenia), **Zeki Karagulle M.** (Turkey),  
**Zhang Y.** (China), **Zorin I.** (Russia)

## **SECRETARIAT OF ORGANIZING COMMITTEE**

**Busato S.** (Italy), **Chaurskaya N.** (Russia)



# CONGRESS PROGRAM

## **30<sup>th</sup> September Wednesday**

Registration at the Hotel

**19.00** Welcome Cocktail

**20.00** Dinner at the Hotel

## **01<sup>st</sup> October Thursday**

**Conference Room BALDACCHINO**

**08.30-09.15** Congress Registration

**09.15-10.30**

- Opening Ceremony of the 68<sup>o</sup> International Scientific Congress of FEMTEC
- Welcome addresses by Representatives of the Ministry of Health, Sardinia Regional Government, Local Authorities and International Delegations Heads
- Speech of the President Umberto Solimene

**10.30-11.00** Break and group photo

**11.00-13.30 *Scientific Session (A):***

**GLOBAL FRAMEWORK ON THERMALISM IN THE WORLD: Realities, questions and answers**

**Chairs: T. Dubois, N. Razumov, O. Surdu, I. Ponikowska**

**1. O. Surdu (Romania)**

*Medical values and virtues of Romanian old balneotherapy as integrative and olistic medicine in the 3<sup>o</sup> millennium*

**2. N. Razumov (Russian Federation)**

*Prospects of development of the resort of the Russian Federation*

**3. T. Dubois (France)**

*Spa Therapy in France: from the 3 weeks treatment to a global approach of the patient*

**4. A. Hood (UK-USA)**

*Shifting Dynamics, Response over Function. The G.W.I. for an Alliance with FEMTEC*

**5. P. Cantista (Portugal)**

*Balneology: the Portuguese experience*

**6. Y. Zhang (China)**

*Thermalism and Medical wellness in China: today and tomorrow*

**7. F. Maraver, C. Morer (Spain)**

*The state of Balneology in Spain (a new way in a changing Society)*

**8. J. Chojnowski, I. Ponikowska (Poland)**

*Polish Balneology during global crisis*

**13.30-15.00** Lunch in Hotel

**15.00-16.30 Scientific Session (B):**

**GLOBAL FRAMEWORK ON THERMALISM IN THE WORLD: Realities, questions and answers**

**Chairs: F. Maraver, P. Cantista, R. Oueslati, Ch. Roques**

**1. U. Solimene, A. Ferruzzi, M. Vitale (Italy)**

*Proposal of "way of thinking" the thermalism*

**2. Ch. Roques (France)**

*AFRETh: thermal researches and media*

**3. F. Maraver, C. Morer (Spain)**

*The program of the Social Thermalism IMSERSO in Spain*

**4. A. Santuari (Italy)**

*The future of Medical SPAs: Is a new paradigm feasible?*

**5. F. Bonsignori, M. Malatesta, G. Vallar (Italy)**

*SPAs enter network of UniSalute partner health care facilities: the brand new project for the Health SPAs treatments by UniSalute (Italian Health Insurance Company)*

**6. R. Oueslati (Tunisia)**

*Tunisian Programs of development in the field of thermalism, thalassotherapy and medical tourism*

**7. F. Menendez (Cuba)**

*Role of the thermalism in the "new Cuban Economy"*

**8. Closing remarks by:**

**E. Fanucci (Italy) (invited)**

*The Italian Interparliamentary Group "Friends of Thermalism"*

**16.30-17.30 Open discussion on the topics to introduce "A CONCRETE PROPOSAL":**

**Coordinators: L. Giannuzzi, U. Solimene**

**- Y. Zhao (China), G. Gurnari (San Marino)**

*Official launch of the World Thermalism Forum in Senyang Region (China). Project FEMTEC-CHTA*

**- U. Solimene, A. Santuari (Italy)**

*Constitute the European Association of patients and users of health SPA'S*

**- F. Bonsignori, M. Malatesta, G. Vallar (Italy)**

*The UNISALUTE (Italian Health Insurance Company) Project for the Health SPAs treatments. Plans and strategies*

**20.00** Dinner in Hotel

**02<sup>nd</sup> October Friday**

**Conference Room BALDACCHINO**

**09.00-11.00 Scientific Session (Medical):**

**Chairs: F. Bonsignori, I. Ponikowska, S. Bulekbaeva, F. Menendez**

**1. O. Sorokina, A. Boikov (Russian Federation)**

*Cardiowellness as the primary means of prevention of cardiovascular catastrophes*

2. **O. Surdu (Romania)**  
*Keywords and topics for improving visibility of studies in balneology*
3. **V. Sevryukova, P. Dobryakov (Russian Federation)**  
*Various aspects of using of natural Healing factors in the resorts town of Anapa (RF) on the example of the sanatorium/resort complex "DiLUCH"*
4. **J. Naumann (Germany)**  
*Interdisciplinary Center for treatment and research in balneology, a model for the integration of balneology in the schools of medicine?*
5. **S. Bulekbaeva (Kazakstan)**  
*Methods of physical therapy in the Republican children's rehabilitation center in Astana*
6. **F. Menendez, F. Ledesma Rosa, A.M. Celeda, Y. Ricardo (Cuba)**  
*Development of dermocosmetic products and its therapeutic usefulness from Cuban peloids*
7. **I. Ponikowska (Poland)**  
*It is really time for prevention in European medicine*
8. **M. Ibragimov (Tatarstan, Russian Federation)**  
*Prudent use of natural factors of the Bakirovo Sanatorium*

**11.00-11.30 Break**

**11.30-13.00 Scientific Session (Technology & Management):**

**Chairs: A. Cerina, G. Gurnari, G. D'Alessandro**

1. **A. Cerina, U. Solimene, D. Mitidieri (Italy)**  
*Introduction to the Management of Medical wellness: 25 years of experience. The example of "Aquaforte" in Forte Village*
2. **G. Gurnari (San Marino)**  
*Thermalism as Connection between infrastructures, economy and technology*

- 3. R. Oueslati (Tunisia)**  
*The ISO 17680 for a correct management of thalassotherapeutic centers in Tunisia*
- 4. S. Ospanova (Kazakstan)**  
*Accreditation of children's rehabilitation services in the Kazakstan's Republic*
- 5. V. Sargsyan (Armenia)**  
*Djermuk: Leader thermal city of Armenia for medical treatments, tourism and leisure*
- 6. T. Issyk (Kazakstan)**  
*Legal aspects of hydrotherapy and medical tourism in Kazakstan according to the legislation of Rep. Kazakstan*
- 7. A. Belaitar (Algeria)**  
Balneology management in Hammam Chellala, Guelma, Algeria

### **Free discussion on the topics**

**13.00-15.00** Lunch in the Hotel

**15.00-16.00**

**Conference Room BALDACCHINO**

Meeting of the Board of Directors of Femtec

**20.00** Dinner

### **03<sup>rd</sup> October Saturday**

**9.00-17.00**

**MEDICAL SPA CENTER "AQUA FORTE"**

Practical workshop on thalassotherapy and medical wellness (*only by reservation in group*)

**Coordinators: A. Cerina, D. Mitidieri (Italy), N. Chaurskaya (Russia)**

**13.00** Lunch

**18.30- 19.30 Conference Room BALDACCHINO**  
**GENERAL ASSEMBLY AND CLOSURE CEREMONY**

**20.00 SARDINIAN GALA DINNER WITH FOLK MUSIC**

**04<sup>th</sup> October Sunday**

**9.00-13.00 Professional Meetings by appointments**

## **SPEAKERS**

**BELAITAR A.**, Medical Chief Thermal Station Chellala, Guelma, Algeria

**BOIKOV N.**, Medical Chief, Spa Center “White Nights”, St. Peterburg, RF

**BONSIGNORI F.**, Medical Director, Petriolo Spa, Italy

**BULEKBAEVA S.**, Director Rep. Children’s Center, Astana, Kazakhstan

**CANTISTA P.**, President Elected ISMH; University of Porto

**CERINA A.**, Medical Director “Aquaforte” Spa center, FVillage, Italy

**CHAURSKAYA N.**, Chief Int. Relations Dept. FEMTEC, Russian Federation

**CHOJNOWSKI J.**, President of Polish Association of Balneology and Physical Medicine

**D’ALESSANDRO G.**, FEMTEC’s Delegate for Switzerland, Medical Chief Leukerbad Klinik

**DOBRIAKOV P.**, Sanatorium “DiLUCH” , Anapa, RF

**DUBOIS T.**, CNETH(Cons. Nat. Etab. Thermaux), Paris, France

**FANUCCI E.**, Pres. Interparliamentary Group “Friend of Thermalism” , Rome

**FERRUZZI A.**, President Italian Foundation for Thermal Researches, Rome

**GIANNUZZI L.**, Ceo and General Manager of Forte Village Resort, Italy

**GURNARI G.**, Ceo Benaquam Group; Pres. Technical Commission FEMTEC, San Marino

**HOOD A.**, Global Wellness Institute (USA and Wellness Tourism UK)  
**IBRAGIMOV M.**, Chief physician of the Medical Institutions of Trade Unions “Sanatorium Bakirovo”, Tatarstan, Russia  
**ISSYK T.**, Law & Economy, University ALMU, Astana, Alma Aty, Rep. Kazakhstan  
**LEDESMA ROSA R.**, President of the Med. Balneo & Rehab. Society, La Habana, Cuba  
**MALATESTA M.**, UNISALUTE, Relation with Health Care Facilities Department, Italy  
**MARAVER F.**, Director of Medical Hydrology School, Univ. Complutense, Madrid, Spain  
**MENENDEZ F.**, V. President of FEMTEC, la HAVANA, Cuba  
**MITIDIERI D.**, “Aqua Forte”, DG Spa Manager, Italy  
**MORER C.**, Medical Hydrology School, Univ. Complutense, Madrid, Spain  
**NAUMANN J.**, University Medical Center, Freiburg, Germany  
**OSPAANOVA S.**, Rep. Children’s Center, Astana, Kazakhstan  
**OUESLATI R.**, Director Dept. Thermalisme, Ministry of Health, Tunisia  
**PONIKOWSKA I.**, Chief Dep. Physical Therapy, Copernicus Univ., Poland  
**RAZUMOV A.**, President NKA, Dir. MSPC Academic, Moscow, RF  
**ROQUES Ch.**, V. President FEMTEC, Prof. Toulouse University, France  
**SANTUARI A.**, Pr. of International Health and Law, University of Bologna  
**SARGSYAN V.**, Chief Medical and D.G. Of Djermuk’s – Thermal Center  
**SEVRYUKOVA V.**, Medical Chief of the Sanatorium “DiLUCH”, Anapa, RF  
**SOLIMENE U.**, President FEMTEC, University of Milan, Italy  
**SOROKINA O.**, Dep. Medical Chief, Spa Center “White Nights”, St. Peterburg, RF  
**SURDU O.**, Ass. Pr., Ovidius University, Constanta, Romania

**VALLAR G.**, UNISALUTE, Head of Relation with Health Care Facilities Department, Italy

**VITALE M.**, Scientific Coordinator of the It. Foundation for Thermal Researches, Rome

**ZHANG Y.**, Secretary General, Chinese Hot Spring Tourism Association (CHTA), Beijing, China

**ZHAO Y.**, Chinese Hot Spring Tourism Association (CHTA), Beijing, China



# **ABSTRACTS**

## **BALNEOLOGY IN HAMMAM CHELLALA**

### **BELAITAR A.**

Hamam Chellala (Guelma, Algeria)

Hamam Chellala is the most flourishing thermal center in Algeria. It is situated 80kms to the south of Annaba city the nearest mediterranean .

Hamam Chellala is in the center of the locality Hamam Meskoutine and it's a part of the department of Guelma .

It was opened in 1976.

Hamam Chellala waters are known for their very high temperature of emergence / 97 degrees and their beautiful thermal cascade.

They are mixed bicarbonate and carbogaseous.

Its main indication is for Rheumatology.

Care protocol is composed of three components:

- Physiotherapy
- Functional Rehabilitation
- Medical gymnastic

BALNEOTHERAPY is very important for my speech :

- Underwater massage
- Jet massage
- Steam bath ...hammam
- Balneotherapy pool
- Humage room
- Bath immersion in tub

**SPAS ENTER NETWORK OF UNISALUTE PARTNER HEALTH CARE FACILITIES: THE BRAND NEW PROJECT FOR THE HEALTH SPAS TREATMENTS BY UNISALUTE (ITALIAN HEALTH INSURANCE COMPANY)**

**BONSIGNORI F.**

Petriolo Spa, Italy

**MALATESTA M., G. VALLAR G.**

UNISALUTE (Italian Health Insurance Company), Relation with Health Care Facilities Department, Italy

UniSalute has directly selected a new network of affiliated spas especially for its customers, made up of excellent facilities throughout Italy offering innovative services of the highest quality. The wide range of spa facilities and the variety of the therapeutic properties of thermal water satisfy all needs and represent quality facilities in the fields of prevention and rehabilitation. Moreover, the network is constantly growing and is continuously integrated with the entrance of new spas.

Many of the spas affiliated with UniSalute are located in places of great geographical and environmental interest, an additional calling for those who decide to take a break to relax and recharge the body and mind.

UniSalute customers may access the spas affiliated with UniSalute at discounted prices. If the spa facility also offers a hotel, discounts are also valid for accommodation.

The creation of this new network allows UniSalute to offer a new high quality service in the field of health and wellbeing, and to enrich its healthcare-coverage with customised packages for specific categories of customers.

## **METHODS OF PHYSICAL THERAPY IN CHILDRENS REHABILITATION CENTER**

**BULEKBAEVA S.**

Rep. Children's Center, Astana, Kazakhstan

In the "Republican Children's Rehabilitation Center" is used a complex rehabilitation program, one of the main components of which are the physical methods of influence. Physical therapy is widely used in various diseases of the nervous system in children at all stages of rehabilitation. Proper Competent use of natural medical factors allows creating correctly an afferent stream of incentives that promotes realization of plastic and compensatory opportunities of the central nervous system. Physical therapy methods practice as well for direct impact on affected motive ways and muscles.

Balneotherapy, electrotherapy, ultrasound and laser therapy, cryotherapy and other physiotherapy techniques used in children's rehabilitation. The complex of physiotherapy procedures are selected to each patient individually. These methods in combination with massage, physiotherapy exercises and medicamentous therapy, not only improve functions of the central nervous system and the neuromuscular device, but also promote increase of the general reactivity of organism.

The special place in rehabilitation of children is taken by hydrotherapy which besides medical influence, renders the expressed psycho-emotional effect. As hydrotherapy various mineral and gas bathtubs, showers, an underwater shower massage, a hydrokinesiotherapy. Relaxing effect of water is used in the treatment of spastic-hyperkinetic disorders in children to reduce muscle tone, pain, reduce the severity of hyperkinesis, that leads to increase of active movements. Application of mineral components water - and mud cures leads to improvement of processes of microcirculation, activation of a cellular metabolism, restoration of energy resources in muscles. At patients with decrease of muscular

tone and the phenomena of the general astenisation is effective the underwater shower massage, salt bathtubs, bathtubs with coniferous extract that have exciting effect on vegetative nervous system, stimulate exchange processes. Hydrokinesiotherapy besides improvement of blood circulation and reduction vascular and autonomic dysfunction, solves a problem of strengthening of the copular device, the prevention and reduction of muscular contractures, improvement of mobility of abarthrosis and improvement of coordination of movements.

Balneotherapy due to the efficiency and availability is one of the most often used physical therapy methods in complex rehabilitation of children with defeat of nervous system. In combination with medicamentous therapy, an orthoting and the latest robotized technologies the balneotherapy possesses high rehabilitation potential.

## **BALNEOLOGY: THE PORTUGUESE EXPERIENCE**

### **PEDRO CANTISTA**

Medical Hydrology at the “Universidade do Porto”, Portuguese Society of Medical Hydrology, International Society Of Medical Hydrology (ISMH)

Portugal has a long tradition in Balneology. Being a Latin country our thermalism carries a strong Roman influence. Portuguese thermal spas are located in their great majority in places where roman hot springs were exploited during the past.

Our thermal history has significant landmarks. We may underline the foundation of the first thermal hospital of the world in the Portuguese town of “*Caldas da Rainha*” at the very end of the XV century and the publication of one of the oldest treaties on Mineral Water Classification in the middle of the XVIII century. (The “*Aquilégio Medicinal*” by *António da Fonseca Henriques, 1765*).

The scientific evolution of Medical Hydrology in Portugal followed the same ways and methods of our neighbour countries. In our days Balneology is officially recognized in Portugal as a “*Medical Competence*”. It has a specialized commission within the Portuguese Medical Association.

There is university education on this field both at undergraduate and post graduate levels. We also may find research activity and some important papers have been published during the last years.

There is a Portuguese scientific Society of Medical Hydrology founded 63 years ago (“*Sociedade Portuguesa de Hidrologia Médica e Climatologia*”).

The Portuguese Society is a member of the ISMH and organized and hosted with a great success the 36<sup>th</sup> World Congress of Medical Hydrology in Porto in 2008.

The thermalism in Portugal is well organized and ruled by a specific law recently reviewed (2004).

Currently there are more than 50 thermal stations, but only 34 are in activity. There are more than 400 sources registered, classified

and with conditions to develop balneology health care. Some of our stations have magnificent facilities with beautiful architecture examples of spa buildings and gardens. Most of the facilities were renewed in the two last decades benefiting from modern equipment and well trained health professionals. There is a large variety of mineral water types offering the possibility of a wide scope of treatment indications. Thermal programs of the so called “classic thermalism” usually take two or three weeks.

Short thermalism programs (“wellness”) are increasing. They keep medical supervision and are considered a health practice.

Portugal has also a “*social thermalism*” although recently the Public Health System has cancelled the reimbursement of the thermal treatments.

Nevertheless all the difficulties that thermalism faces in our days we are confident that it will remain in Portugal as an important health, social, cultural and economic phenomenon in the future. In other times we passed by similar experiences and we were able to overcome them.

Many aspects of Portuguese thermalism may be considered of excellent standards. The development we witnessed in the last 20 years could serve as an

example for those who intend to build or to renew spa facilities. Portugal offers good possibilities to exchange experiences in the domains of facilities, equipment, operating models and management, professional education, technology, architecture and thermal engineering, thermalism laws.

With this presentation we aim to show some of these points of the Portuguese Balneology that might interest colleagues and other players in the thermalism area.

There are also a few thalassotherapy units in Portugal. Recent experiences deserve some attention by their quality and innovation aspects. Some of these have great interest for our health.

Balneology research in Portugal is currently developing. An university network was established in order to get a multicentre cooperation on this field.

## **THERMAL MUDS SAFETY AND QUALITY**

**CARRATURO F., GARGIULO G., GUIDA M., GIORGIO A., GARGIULO E., ALIBERTI F.**

Department of Biology, University of Naples "Federico II"

Fine granular clay, the so called "peloid", allowed to ripen for several months in special containers in contact with thermal spas mineral water, represents the basis of mud therapy. During the maturation process, mud undergoes many changes: beyond environmental bacteria and those typically present in thermal water, this complex matrix constitutes the reservoir of a wide range of microorganisms (Algae, Protozoans, etc.), which outline a trophic chain.

The biotic components and their metabolites indicate the specific factors which consent the use of ripen mud for therapeutic applications.

A standardized protocol for the evaluation of the ripening process has not been developed yet, as well as specific regulations were not defined. Furthermore, available researches aimed to characterize the process, defining potential indicators or chemical, physical and biological markers of the successful "maturation", provide lacking information: this depends on the many different variables playing a role within the ripening stages, characterized by a series of complex events. A further concurrent issue is represented by the possible microbial contamination and its persistence during mud maturation process.

The experimented analytical approach is based on two different research lines:

- a) Ripen mud safety: the survival of pathogens and microbial markers of faecal contamination during ripening process was evaluated.

- b) Mud quality: a research was conducted in order to establish the effectivity of ripening times. The analysis was first performed through extraction and characterization of exocellular polymers – produced by the biomass – using chemical and colorimetric methodologies. The same samples were then analyzed employing genomic techniques : mud genomic DNA was extracted and amplified with specific oligo by environmental PCR, to better specify the differences between the several mud maturation levels.

Results: Microbial loads abatement times vary as a function of evaluated bacterial and fungal species; they are nevertheless sufficiently short in order to guarantee the safety of produced mud. Preliminary results in regards to quality studies highlighted the higher production of exocellular polymers, which is proportional to the ripening times increase as well as the larger quantity of extracted DNA: this outcome could allow the ripening process standardization.

Colorimetric methods, using Schiff's reagent, together with the molecular characterization of produced polymers, will consent the method standardization and the development of a simple test kit for the validation of the proper mud maturation.

## **POLISH THERMAL TREATMENT IN GLOBAL CRISIS AGE**

**CHOJNOWSKI J., PONIKOWSKA I.**

Department of Balneology and Physical Medicine, Nicolaus Copernicus University, Ludwik Rydygier Collegium Medicum in Bydgoszcz

Thermal treatment as a branch of medicine applying natural resources in Poland is reimbursed by National Insurance, recognised by local authorities and regulated by state law. There are three levels of reference treatment: thermal hospital, sanatorium and out-patient thermal clinic. Every year about 600 000 patients' treatment costs are covered by National Insurance, another 300 000 pay themselves; in that number there are 40 000 foreigners. Great advantages of Polish thermal stations are well qualified medical staff, unique natural resources (not only mineral waters, but also peloids and healing gases) and beneficial climate conditions. The weak point is poor accommodation conditions in some thermal stations. The most popular profiles of treatment are muscoskeletal system, metabolic and cardiac diseases. Despite lower level of expenditure on health care in Poland between 2005 and 2015 due to financial crisis and lower state income level, expenditure on thermal therapy have increased in that time. However, there is a serious apprehension that in the nearest future the expenditure will be cut. Probably reimbursement will cover mainly treatment in thermal hospitals which are aimed at treating patients with chronic diseases. In consequence, thermal sanatoria will offer medical treatment mainly to commercial patients which means adjusting to new challenges, like treatment for elderly people, anti-ageing and prophylaxis. In order to achieve these goals, treatment should be standardised and realised in proper medical prophylaxis programmes. An important factor in planning strategy for Polish

thermal stations should be international activity focused on attracting foreign patients who appreciate high quality of treatment and reasonable prices in our country. There is also need of conducting EBM standard studies to prove the efficiency of thermal therapy in chronical diseases treatment.

In conclusion, economic crisis hasn't induced negative effects on thermal treatment in Poland so far. Financial situation requires activities leading to improvement of quality of treatment, standarisng medical procedures and opening for new directions, especially anti-ageing, geriatrics and prophylaxis.

## **FEMURO-ACETABULAR IMPINGEMENT OR L5-S1 LUMBAR DISC HERNIA**

**DEMIRGIAN S. M., SURDU O., SURDU T. – V. CV., SURDU M.I.**

Balneal and Rehabilitation Sanatorium of Techirghiol, 34-40 Dr. V. Climescu/ Ovidius University of Constanța, 124 Mamaia Blv

We present the case of 53 years old woman, which presented to us with pain located in right leg started from the posterior thigh to plantar side of the foot. Also she described paresthesia in the plantar region of the foot and fingers.

The patient was evaluated. anamnestic (history of the illness) clinical and paraclinic (imagistic).

We noticed that the patient had not personally pathological conditions. She describes symptoms only in the right leg without low back pain. The pain is more intensive when the patient is in standing and she has a limping walk. The ethiology was the physical effort by lifting a weight. The pathology was detected imagistical means (MRI and radiological). The evolution was favorable using hydro-therapy, kineto-therapy and not for the last electro-therapy. In addition we recomanded her to use a cane untill her complet recovery, means the desaperence of the pain and normal walking.

The particularity of the case is given by the rarity of impingement syndrome, difficulty in diagnosis due to association with sciatic nerve injury.

### REFERENCES:

1. Br J Gen Pract. 2013 Jul; 63(612): e513–e515. Diagnosis and management of femoroacetabular impingement
2. Hellman MD1, Riff AJ, Frank RM, Haughom BD, Nho SJ. Operative treatment of femoroacetabular impingement; Phys Sportsmed. 2014 Sep;42(3):112-9.
3. J Bone Joint Surg Br. 2005 Jul; 87(7):1012-8. Hip morphology influences the pattern of damage to the acetabular cartilage: femoroacetabular impingement as a cause of early osteoarthritis of the hip. Beck M1, Kalhor M, Leunig M, Ganz R.

## **SPA THERAPY IN FRANCE: FROM THE 3-WEEK TREATMENT TO A GLOBAL APPROACH OF THE PATIENT**

### **DUBOIS T.**

CNETH (Conseil National des Etablissements Thermaux) – 1, rue Cels 75014 PARIS

French spa therapy is highly dependent on public regulations and finance. State and public bodies have a major say on cares delivered, both in nature and number, on required qualifications of therapists, on a fixed 3-week's duration, on hygiene and safety. At the same time, public financing of cares is by far more important than the contribution of complementary private health insurances and out-of-pocket payments by the patient. Some 10 years ago, the National Health Insurance openly stated that hypothesized health benefits of spa therapy were no longer good enough to keep the subsidizing of thermal treatments. Clinical research with flawless methodology had to be organized to prove balneotherapy has a true medical interest. Spa companies had to devise a successful strategy of overall assessment of balneotherapy through the creation and funding of a specific research association (AFRETh) that ultimately secured the reimbursement rate of cares. Years later the challenge has been met and fewer opponents question any longer the virtues of hydrotherapy. However, in the wake of spiralling health costs putting a strain on public spending, a new requirement is set on spa center operators. Nowadays, they also have to prove that spa therapy is cost-efficient in comparison with other therapies. The yet to be proved economic relevance of spa therapy as well as new expectations are set to bring about a dramatic shake-up by which alongside the traditional treatment of chronic diseases, spa companies will have to address new fields of competences, such as prevention, rehabilitation, quitting of addictions, postponing of age-associated loss of autonomy, etc. By shifting the focus from an organ-centered approach to a global approach, spa therapy may

have a major role to play in the prevention and treatment of chronic diseases. However, with the National Health Insurance Fund being reluctant to subsidize these new interventions, the financing scheme is yet to be worked out.

## **THERMALISM AS CONNECTION BETWEEN INFRASTRUCTURES, ECONOMY AND TECHNOLOGY**

**GURNARI G.**

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In the world of Thermalism there's still a low-developed aspect regarding the connection between infrastructures and economy. In particular both in the context of preliminary business plan drafting and during facility managing the theme of technology, of the investments and operational costs for technology, still appears as a hard duty nowadays, with many shadows and few lights.

Actually both for new and for renovated - or simply submitted to an extraordinary maintenance - facilities high attention is paid to architecture, to furniture and to satisfying a demand always more increasing in terms of functions, while very low attention is paid to functional technology, to related costs, to advantages and to limits connected to choices that aren't always adequate to the needs. The average cost of a "high" quality technological device is 30÷40% higher than a "medium" one.

But if we check the difference between high and medium quality in the course of time we can notice many heterogeneous variables that could be used to plan a correct economic evaluation. Here below some reference factors in terms of higher performance for a better quality:

- Air section (air conditioning, heating and ventilation): considerably lower energy consumptions; higher reliability; higher comfort; greater long-life and lower maintenance costs (less problems and costs for replacing technological components); better health & hygiene safety.
- Hot domestic water section: less costs for energy; higher reliability; lower working costs; lower risks of failures and lower following losses of water; reduction of health &

- hygiene risks; greater long-life; reduction of sanitization costs; higher water saving.
- Mains water section: lower general costs, reduction of maintenance; higher health & hygiene reliability; higher long-life compared with current water distribution systems.
  - Fluid pipes section: higher efficiency; reduction of working costs; higher; reduction of ordinary maintenance actions; higher health & hygiene reliability; higher comfort; very low thermic losses; greater long-life.
  - Electromechanical section (raisings, cuttings, distribution, controls and regulations): considerable reduction of energy consumptions; higher reliability in the course of time; lower maintenance costs; scheduled replacing (without any surprise); possibility of remote intervention; automatism with low request of manpower; fully sustainable operations of sanitization.
  - Lighting section: considerable energy savings; duration 80% higher than traditional systems; higher comfort; extremely reduced maintenance; quick intervention for any kind of extraordinary maintenance operations.
  - Access control section: high reliability; considerable increase of general safety; it's an irreplaceable help for the economic management and the logistic management of the users; high versatility of use; significant reduction of costs for administrative personnel: high comfort for users. The software is easy to update and the costs of hardware are progressively getting lower. Strong image of efficiency of the offer's system which can be integrated to all business management systems, with possibility of non-stop interrogation also by remote station.
  - Electro medical equipment section: higher reliability; lower working costs; higher intrinsic safety and higher health & hygiene safety; very quick to sanitize and more reliable in terms of health & hygiene prevention; more comfortable;

- with low costs for maintenance; greater long-life; they can be controlled and managed by remote station.
- Tubs and pools: lower costs for energy; lower waste of water; higher thermic reliability; higher health & hygiene reliability; significant reduction of costs for maintenance; reduction of risk of infections demonstrable continuously in the course of time; higher comfort for users; lower costs for periodic and daily cleaning; reduction of the use of chemicals and higher environmental sustainability; significant reduction of general costs.
  - Safety section (in risky environments including tubs and pools): high efficiency; drastic reduction of risks in order to assure a general safety for operators and users by means of new equipment of active safety into water; remote control without extra costs.
  - Garbage and waste water system: lower problems and significant reduction of costs for maintenance and management in general; lower environmental impact.

How can we obtain all this? Through proper design, through cautious choices of technological components, materials and advanced systems (provided with valid certifications). Through installations followed by designer that are not suppliers at the same time, through contracts of technical assistance guaranteed in the course of time.

Therefore the one who spends more on technology gains on the general balance of production. But most of all the one who invests in technology gains managerial tranquility and builds an everlasting customer loyalty. Those factors are difficult to quantify in financial terms, but are surely of interest both for investors and for managers of thermalism's centers, that is facilities for health that should represent always and however a model of quality.

## **SHIFTING DYNAMICS, RESPONSE OVER FUNCTION. THE G.W.I. FOR AN ALLIANCE WITH FEMTEC**

### **HOOD A.**

#### Wellness Tourism

The fundamental need for connection in all of its forms and interpretations has become increasingly more essential to business performance. Within the full scope of connection lies a mocking antithesis where the push and pull of the internet must co-exist with personal balance and real relationships. From digital to human, social media to immersion in nature - we cannot have one without the other to achieve commercial success.

The opportunities throughout the global spa and wellness industry are many and varied. The good news story is that it is a rapidly growing segment and one that will continue to grow no matter its' adversaries. The navigation of now and the coming months and years calls for a more sustainable approach and a strategy that will give stronger anchor amidst opposing influence.

## **RESPONSE TO THE TREATMENT OF THE PATIENTS WITH OSTEOARTHRISIS BY MAGNITO-INFRARED LASER THERAPY COMBINED WITH NATURAL FACTORS IN SANATORIUM «BAKIROVO» (MUD POULTICE APPLICATIONS AND H<sub>2</sub>S WATER OF «MATSESTA» TYPE)**

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Medical preventive trade-union institution “Bakirovo”

The problem of osteoarthritis in its socioeconomic and medical significance as a reason for physical disability and loss of life quality is a quite serious problem. In its occurrence osteoarthritis occupies one of top-rank places among the diseases of locomotor system.

The major clinical presentations of this medical condition are:

1. Evidence of pain syndrome in motion;
2. Predominant affection of big joints which carrier the most physical exertion;
3. Limitation of joints' motion;
4. The change of their form;
5. Crepitus in movable joints.

Defection of metabolic processes of the body is the guide link in pathogenesis of this medical condition. Essentially an articular cartilage gets damaged – there degenerative changes have started to appear in it; metabolic processes get violated; microcirculation in arthral tissues, synovial membranes and epiphysis has started to change.

40 people in an age from 30 to 60 years old with the duration of a disease from 2 to 10 years have been chosen and stayed under the supervision in order to study the effects of magnito-infrared laser therapy combined with natural factors in the case of treatment of patients with osteoarthritis. The whole group of patients has been almost single-type with a little diapason of factors of objective and subjective type. The supervised patients have been separated into two sub-groups: the main sub-group of 22 people received a

multiple treatment and magnito-infrared laser therapy for afflicted joints with the use of “Rikta” device where the therapeutic intervention of several irradiations was applied simultaneously, as follows:

1. Pulsed laser radiation of waves’ infrared band;
2. Continuous infrared radiation of red visible-light;
3. constant magnetic field.

Simultaneous impact of different irradiation usually gives advanced therapeutic effect in comparison with the case when this treatment is used separately. Method of effect on the joints is contact; the frequency is variable; the exposure time is by 2 minutes per each zone, daily with a course 8-10 times.

Multiple treatment has included: mud poultice application, temperature 38-40° C for 10 minutes every second day, 8-10 per course; H<sub>2</sub>S bathes such as «Matsesta» (concentration of H<sub>2</sub>S from 50-150 per 1 mg/l of water), temperature 36-37 °C for 10 minutes every second day, 8-10 bather per one treatment course. The applied treatment was harmonized with dietic food, therapeutic exercises and massage.

The second subgroup (18 people) received a multiple therapy which was similar to the main group without a magnito-infrared laser therapy, and has been a control group.

Analyzing the observations of the patients in the period of their time in sanatorium it is possible to come to the conclusion that the positive effect appears faster and manifests itself in improvement (or either disappearance) of joint pain, increase in volume of movement; disappearance (decrease) of rustle in joints and the improvement of general condition, usage of magnito-infrared laser therapy at capped joints.

Patients of the first subgroup have started to feel better after a slight reduction in pain that occurred by the fifth day of treatment, and pain syndrome has disappeared on day 10 of treatment.

The efficiency of treatment was lower in control group. The estimation of results demonstrated that of the 1<sup>st</sup> subgroup who received magnito-infrared laser therapy 9 patients (40,5 %) out of

22 patients have reached a significant improvement; improvement - 7 people (30,0 %); and 6 (29,5 %) patients were discharged with no improvement

In the second subgroup a significant improvement occurred in 6 patients (33.3%), improvement in 5 patients (27.7%), and 7 (39.0%) patients were discharged with no improvement (39,0 %).

The received data offers an opportunity to assume that the usage of magnito-infrared laser therapy together with a complex of therapeutic actions in patients with osteoarthrosis has a specified simulative effect. It corrects neurotrophic processes, improves the condition of protective-adaptive mechanisms and so contributes a sustained improvement of the condition. Magnito-infrared laser therapy is sufficiently simple and available that allows recommending its use in sanatoriums, policlinics and stationary conditions.

## **CONCOMITANT USE OF PELOOTHERAPY AND MAGNETO-LASER MASSAGE OF PROSTATE GLAND IN THE CASE OF CALCULOUS PROSTATITIS IN THE SANATORIUM “BAKIROVO”**

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The treatment of calculous prostatitis complicated by a chronic pelvic pain syndrome, agenesis and dysuric disorders is a complicated task for the practical urology. Concretions, which localize in acinus and excretory ducts of prostate gland, have an injurious effect on surrounding tissues, contribute to the deflection of microcirculation and support an inflammatory process at the cost of microorganisms at the calculus itself.

The usage of natural therapeutic agents which includes also a pelopathy, is a promising direction in the treatment and rehabilitation of the patients with chronic calculous prostatitis. In the case of prostatic calculus the prostate massage is contraindicative and it limits the options and facilities of urologist. Frangotherapy with concomitant use of rectal laser irradiation of prostate gland causes the extension of blood flow in prostate gland, decongestion with an improving of acines drainage and in some cases even resolution and discharge of small calcifications. Calorigenic effect of peloid has an antitonic pain-relieving and anti-inflammatory effect.

Conventional treatments of chronic prostatitis (CP) in sanatorium “Bakirovo” are carried out in accordance with the order of Ministry of Health and Social Development of the Russian Federation № 216 of November 22, 2004 “On approval of the standard of sanatorium-resort treatment for the patients with male genital organs

disorders” and represented by balneo-mudtherapy, electro-physiotherapy and hirudotherapy.

All patients have received the preliminary study before the sanatorium-resort therapy: clinical and physical examinations including dactylar rectal examination, urethral smears for STD by PCR method; examination of prostate gland (PG) secretion and inoculation for microflora with the determining sensitivity, transrectal US of PG, total and free prostate-specific antigen (PSA); estimation of the symptoms of chronic prostatitis according to the NIH-CPSI grading scale; and spermogram is upon readings. The patients with suspected tuberculosis and malignant tumors of prostate gland are excluded out of the examination. In accordance with the data of transrectal US, the measurements of concretions have ranged from 0.2 to 1.5 cm. In the majority of cases – in 28 (77%) patients – concretions have localized in paraurethral zone mainly in groups.

Goal of the research.

Comparative assessment of the results of balneo-mudtherapy with the usage of magneto-laser irradiation of prostate gland and the conventional drug therapy in the case of calculous prostatitis.

Methods and materials.

36 patients with determined diagnosis have been included into the examination group: chronic abacterial prostatitis (CAP) III-A category and III-B category with the detected prostatic calculus. Inclusion criteria were age factor (males 20-55 years old), infertility within marriage, symptoms of chronic pelvic pain syndrome (CPPS), dysuric disorders and occurrence of calculus (calcification) in prostate gland according to the data of transrectal US. The patients have been under the supervision throughout the year. Before the start of the treatment a chronic prostatitis has manifested itself by the pain symptom, dysuria, sexual disorders, hemospermia and reduction in the life quality. Patients were randomized into 2 groups. The first group (17 people) was treated in sanatorium “Bakirovo”. They have received rectal mud tampons 150-200 g for 40 minutes, temperature 38-40C, №10 daily; after voiding –

hydrosulphuric microclysters 100-150 g with a concentration of hydrogen sulphide 50-75 mg/liter, temperature 36-37C, №10 daily. Additionally a rectal magnetic-laser therapy (MLT) with the usage of vibro-magnet-laser head VMLG-10 for laser therapy device (LTD) «Matrix Urolog» has been carried out by the procedure: time of exposure is 5 minutes, radiation frequency - 10 hz, untrilled. The procedures were carried out daily №10 per course, at partly impregnated urocyst; with an obligatory urinary bladder emptying right after every procedure. There also local mud applications (“pants”) were carried out, temperature 40-42C, 10 minutes every second day №6 – 8 procedures per course, baths with a highly concentrated hydrogen sulphide water such as “Matsesta” type with a mineralization 23,9 - 32 g/l with a concentration of hydrogen sulphide up to 150 mg/l, temperature 36-37C, 10 minutes, every second day №6 - 8 procedures per course. The patients continued to take the prescribed drug treatment (alpha-1-adrenoblockers, litholytics and antibiotics) in the course of treatment

The second group (19 people) – has been under a conservative drug therapy (alpha-1-adrenoblockers, litholytics and antibiotics) – was treated in Kazanian branch LLC “AVA PETER”.

The treatment in sanatorium “Bakirovo” has been carried out during 10 - 14 days. The greatest clinical effect was achieved in the group of patients who has received pelotherapy with a magnetic-laser therapy (according to the NIH-CPSI grading scale). According to the data of transrectal US of prostate gland of the patients from the first group in 3(11%) cases a complete elimination of calcifications has been recorded. The reduction of strength of acoustic shadow was recorded in the case of big calculus (diameter is more than 5 mm). This indicates the reduction of density of calculi. Symptoms of chronic pelvis pain and frank dysury have remained after the treatment in 3 patients. Hereafter these patients are recommended to receive an operative therapy (transurethral resection of the prostate). Multiple ejaculate examination which has been made 3 months after the sanatorium-resort therapy demonstrated the improvement of all main specifications of ejaculate: increase of

concentration and the number of extensively active sperm; and reduction of the number of antisperm antibodies in ejaculate.

There were also an improvement of spermogram exponents according to the NIH-CPSI grading scale and quality of life in the group of patients with a conventional drug therapy. But in contradiction to the patients of the first group there were no changes of ultrasound.

## **LEGAL ASPECTS OF HYDROTHERAPY AND MEDICAL TOURISM IN KAZAKHSTAN (UNDER THE LAWS OF THE REPUBLIC OF KAZAKHSTAN IN ACCORDANCE WITH INTERNATIONAL STANDARDS)**

### **ISSYK T.**

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*"Approval of a healthy lifestyle and the development of medicine will increase the life expectancy of Kazakhstanis up to 80 years and above. Kazakhstan will one of the leading Eurasian centers medical tourism".*

*Message from the President of the Republic of Kazakhstan N.A. Nazarbayev to people of Kazakhstan "Kazakhstan's way - 2050: The single goal, common interests, common future" (Astana, January 17 2014)*

According to the Law of the Republic of Kazakhstan dated June 13, 2001 № 211-II «On tourist activity in the Republic of Kazakhstan», "medical tourism - kind of tourism, involving the combination of relaxation with access to specialized and highly specialized medical care outside of the residence."

According to the Strategy of JSC "National Medical Holding" for 2008-2018 by 28 November 2008, number 2) (2.5).

To date, the legislation of Kazakhstan provides for the possibility of paid or free treatment of citizens abroad at the expense of the republican budget. According to the decree of the Government of the Republic of Kazakhstan dated February 29, 2000 № 326 referrals for treatment in foreign healthcare organizations are subject to the citizens suffering from diseases included in the special list of diseases for which within the framework of the guaranteed volume of free medical aid have been used all allowed to use methods of treatment medical and preventive treatment institutions of the Republic of Kazakhstan, which resulted in not a positive therapeutic

effect, and in foreign medical institutions to them can be applied additional or new specialized medical practices are not applied in the Republic of Kazakhstan. Basically Kazakhstan directed state in Russia, Belarus, Ukraine, Pakistan, Israel, Germany, Japan, Austria and China.

To pay medical tourism Kazakhstanis prefer as Europeans Germany, Switzerland, France, Spain, Czech Republic, Great Britain and Belgium.

In Asia, where in the most popular medical tourism India, Thailand, Singapore, Malaysia and Dubai. More than 1.3 million. Tourists a year visit Thailand, Singapore, India, South Korea and Malaysia in order to obtain medical services. Medical tourism grows in India by 30 percent per year, and predicts generate at least 2.2 billion. Dollars per year. According to recent data, annually more than 1 million tourists from around the world receive the medical services in Thailand.

In Kazakhstan, there are more than 50 laws and regulations on the subject of medical tourism and more than 100 regulatory legal acts on hydrotherapy.

Normative acts on hydrotherapy more weight requirements and standards is the preparation of natural sources, their development, use, conservation.

It is interesting that most of the hot springs put on the list of geological, geomorphological and hydrogeological objects of the state nature reserve fund of national and international importance of special ecological, scientific, cultural and other value, classified as specially protected natural areas of national and local importance. We have counted more than 150 such facilities.

According to the Law in the Republic of Kazakhstan dated June 13, 2001 № 211-II «On tourist activity in the Republic of Kazakhstan" medical tourism is included in the tourist industry, and the state regulates this activity through licensing, standards, requirements for the contract, damages and moral damages, the establishment of legal rights and obligations, travel insurance, liability of the parties and state control in this area.

It is important to know that there are a number of government programs related to the development of medical tourism and hydrotherapy. Thus, according to the Decree of the President of the Republic of Kazakhstan dated April 6th, 2015 № 1030 "On approval of the State program of infrastructure development" Nurly Jol "for 2015 - 2019" geothermal energy crust (geothermal water) refers to the strategic resources of the country.

For this purpose, as well as from the perspective of medical tourism will identify promising areas, sites, objects, which are estimated inferred resources of basic minerals.

As it has already been said that there are strict requirements for all activities associated with thermal springs. Thus, according to the Government of the Republic of Kazakhstan dated February 10, 2011 № 123 "On Approval of Uniform Rules on rational and comprehensive utilization of mineral resources in the exploration and mining project of thermal water" contains the following sections:

- initial geological and production data obtained during the exploration and trial operation of wells;
- justification of the selected system development, annual production levels, technological modes of operation of wells, the rational use of water in the process of operation and profitable period of development, feasibility of reservoir pressure maintenance;
- justification of the system and waste water discharge point;
- the program and the amount of work on the study of wells and development control;
- input data for the drafting arrangement fishing "and so on.

There are also administrative and criminal liability for the illegal or improper exploitation of any form of thermal springs.

In the context of the study and evaluation of recreation resources are studied and the resort and balneological resources, including

mineral water springs, therapeutic mud, hydrotherapy resources, healing climate and landscape conditions.

Mineral water and mud are considered suitable for spa use, if they are approved operating reserves and their characteristics correspond to national standards.

By the use of mineral waters are divided into 2 groups: for external and internal use (drinkable).

To drinking healing waters, used only on prescription, are the water with a salinity of 10 to 15 g / l, and in the presence of these biologically active components - with a salinity of less than 10 g / l.

Depending on the chemical composition may be, in some cases the use of drinking water with salinity treatment more than 15 g / l.

For therapeutic mineral waters, used as a treatment prescribed by a doctor established criteria for total mineralization from 1 to 10 g / l (GOST 13273-88).

To date, with a certain degree of conditionality, established the following balneological groups of mineral waters: no "specific" components and properties, and a high content of organic substances; carbon dioxide; sulfide; ferrous and arsenic; bromine, iodine and bromine; radon; siliceous.

From now allocated to balneological types of mineral waters on the territory of Kazakhstan is not found water and carbonated water with high organic content.

To date in Kazakhstan 48 explored deposits of medicinal mineral groundwater reserves which are estimated in the amount of 31.003 thousand. Cubic meters / day.

Most of the explored deposits of mineral water is confined to the territory without a "specific" components and properties (29 deposits with total reserves of 22 641 thousand).

**Table 1. - Explored reserves of medicinal mineral underground waters on the territory of the Republic of Kazakhstan\***

Region of Kazakhstan	Explored reserves thous. M <sup>3</sup> / day) / Number of deposits							
	all	A	Б	В	Г	Д	Е	Ж
<b>South</b>	17,713 18	13,573 11	-	-	-	0,648 1	0,520 1	2,972 5
<b>West</b>	6,489 9	5,239 6	-	-	-	1,250 3	-	-
<b>North</b>	4,609 7	2,879 6	-	-	-	1,730 1	-	-
<b>Central</b>	1,707 10	0,585 4	-	-	0,427 2	0,043 1	0,652 3	-
<b>East</b>	1,085 4	0,365 2	-	-	-	-	-	0,720 2
<b>Total</b>	31,003 48	22,641 29	-	-	0,427 2	3,671 6	1,172 4	3,692 7

\*Order of the Minister of Regional Development of the Republic of Kazakhstan dated December 31, 2013 № 403 "On approval of the General Scheme of the organization of the territory of the Republic of Kazakhstan"

On the territory of the Republic, the following types of spas: Spas, mud, climatic.

I would also like to note that in Kazakhstan there is no so-called water tax, which is in a lot of countries around the world, and it pleases.

Now some of the CIS. According to the Model Code "On Subsoil and Subsoil Use for the states - participants of the CIS" (7 December 2002), there are a number of requirements to the exploration of geothermal waters:

1. Exploration of geothermal water is planned as a result of geological exploration and prospecting of deposits in order to assess their performance stocks, establishing the

possibility of economic and other use of water and (or) energy of the water management field and its mode ekspluatatsii.

2. Preliminary exploration of geothermal waters is carried out in order to fully explore the hydrogeological field of treatment and evaluation of operational reserves of geothermal water, adequate for a preliminary assessment operational stocks of thermal waters, substantiation and development costs of the planned tasks to perform detailed exploration mestorozhdeniya.
3. Detailed exploration of geothermal fields is carried out in order to clarify these preliminary field exploration and development of rational modes of the field of geothermal waters.
4. Evaluation of operational stocks of geothermal fields and modes of operation is carried out in accordance with the regulations, approved by the state executive body authorized to exercise control and regulation of the use and protection of mineral resources and (or) water resources, taking into account the requirements defined properties of geothermal water.

Similarly, the requirements established in the industrial exploitation of deposits (saline) water, exploit geothermal waters (Articles 238-239).

In conclusion, we note the Decision of the Government of the Republic of Kazakhstan dated May 19, 2014 № 508 "On Approval of the Concept of development of the tourism industry of the Republic of Kazakhstan till 2020", which specifies:

1. Analysis of the current state of the tourism industry in Kazakhstan with the analysis of international practice

2. Videnie development of the tourism industry in the Republic of Kazakhstan till 2020
3. Aims, objectives, milestones and expected results of the development of the tourism industry in the Republic of Kazakhstan till 2020
4. Basic principles and general approach of the tourism industry in the Republic of Kazakhstan.

So the main base there and we believe that because of the unique nature and the source of our human potential, Kazakhstan is actively developing medical tourism. We are still at the beginning.

## **INNOVATIVE DEVELOPMENT FOR THERAPEUTIC AND DIAGNOSTIC BASE AT HEALTH AND SPA RESORTS**

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**The purpose** of research is to evaluate the effectiveness of a course of innovative restorative treatment, which was developed and implemented at *Altaiskii Zamok* health resort.

### **Materials and methods.**

The study was conducted on 395 patients of *Altaiskii Zamok* health resort. The course of innovative restorative treatment includes detoxification, music resonance therapy, herbal treatment of helminth infections, baths with nitric-siliceous thermal water with a low concentration of radon, an innovative technology of underwater physiotherapeutic massage (UPM) unprecedentedly performed in natural thermal water from the spring. The patients underwent the tests to determine homeostasis indices, compensatory capabilities, overall health status (using *VALEOIMMUNO* program), stress index, as well as vascular age (using *Angioscan*). 70 patients (treatment group) underwent the tests to determine uric acid level and the indices of lipid metabolism.

### **Results and discussion.**

After the completion of the program the patients in the treatment group had a statistically significant decrease in body mass index ( $p < 0.01$ ), in systolic and diastolic arterial pressure, and in the levels of total cholesterol and triglycerides. Before the treatment, the average total cholesterol level was  $7.87 \pm 0.76$  mmol/L. After the completion of the program, which lasted one month, the patients

had a statistically significant decrease in the levels of total cholesterol ( $5.45 \pm 0.36$  mmol/L) and LDL cholesterol level ( $4.83 \pm 0.27$  mmol/L,  $p < 0.05$ ). After the completion of the program that incorporates water therapy as its most important part (including baths and mineral water consumption) 93% of the patients in the treatment group had lower levels of uric acid as well as a clinical improvement of the musculoskeletal condition (increase in motion range of the affected joint) with a statistically significant difference between the treatment group and the control group. The evaluation of the patients who completed the program by means of an expert information system called VALEOIMMUNO shows a certain increase in homeostasis indices, overall health status, and compensatory capabilities.

### **Conclusions.**

1. The data obtained from the patients' tests proves that the innovative methods and technologies included in the developed course of restorative treatment are highly effective.
2. The comprehensive evaluation of the patient's health and its observation throughout the program allow the physician to prescribe the treatment course that solves the exposed health problems in a fast and adequate way and improves the patient's quality of life.

## **PROSPECTS FOR THE BALNEOLOGICAL USE OF THE SALT-WATER LAKES OF THE CRIMEAN PENINSULA.**

**KHOKHLOV V.**

Scientific-methodical center of the resort Saki hydro-geological station

One of the geomorphological features of the Crimean peninsula is a large number of shallow salt-water lakes of a seaside type. According to recent studies carried out by Saki Hydrogeological Station in the late 20th century and in the early 21st century, there were 26 such lakes.

Basically, the salt-water lakes are closed galobiontnc ecosystems (Gulov O., 2007), formed in the Quaternary geological period about 7 thousand years ago as a result of the slow tectonic transgression of salty waters of the Black Sea. According to another hypothesis, formulated in the late XX century by American geologists Ryah W., Pitman W.(1999),who link formation of the most salt-water lakes of Azov and Black Sea region with catastrophically rapid flooding of freshwater depression and existing in it Lake Euxine (the modern Black Sea) because of Mediterranean waters breaking through the Bosphorus and flooding of the present Black Sea shelf.

Chronological analysis of the results of investigations of the Crimean salt-water lakes, carried out by different researchers in the 30s of the last century (prof. Dzens-Litovskiy, Kurnakov et al.) and in the early 21st century (Gulov O.A.) has shown a steady trend of cutting down of the water surface area of the hypersaline Crimean reservoirs, which declined by almost 2 times in the last 80 years and in the late 20th century it formed 170 square kilometers. Unfortunately, the cause of the degradation of the lakes was (served as) an active industrial human activities related to the development of the chemical industry and agriculture during the Soviet industrialization of the Crimean peninsula.

It is known that the economic potential of the salt-water lakes is diverse, but for the Crimea, which has favorable natural and climatic descriptions, priorities for the use of hydro mineral resources of

hypersaline reservoirs, in our opinion, should be considered wellness (balneology) and recreation. According to our estimates, only silt-sulfide therapeutic mud stocks of 5 largest lakes (Sakskoye, Chokrak, Koyash, Uzunlar, Dzharylgach) will allow to provide stable demand of the whole of the resort and tourism industry for a century perspective.

Other prospective directions of complex development of the Crimean salt-water lakes could be the creation of recreational areas combined with fish- farming, cultivation of various mariculture-biologically valuable products (mussels, oysters) and raw materials for pharmaceutical preparations (beta-carotin).

Today it is necessary to stop the destructive process of degradation of the salt-water lakes of the Crimea, to save their resources and find their correct application.

## **DEVELOPMENT OF DERMOCOSMETIC PRODUCTS AND ITS THERAPEUTIC USE FULLNESS FROM CUBAN PELOIDS (MUD).**

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The use of sludge in mineral peloids or cures or relief from certain diseases, clinics or beauty, dating from antiquity, from Egyptian civilization and a great splendour in the Greek and Roman. Contrary to what some believe is a living being, consisting of chemical and biological elements that give restorative, protective and nutrients, allowing it to be used as a bioactive agent in the formulation used for therapeutic purposes in cosmetic skin diseases and properties osteomioarticular skin, health and beauty treatments under strict microbiological control and system quality assurance. In Cuba and in strict accordance with international standards of production we have a wide and important range of dermo-cosmetic products from Peloid and mineral waters, ecological Thermal Soap, Nourishing chewed, Astringent chewed, Ecological Thermal Mud, Tonic Anti cellulite mud, Protector solar, Podo Sal, After Shave Lotion, Drying Lotion, Revitalizing Lotion, Deodorant, Powder Mineral, exfoliating soap. These products are used in our health care system and are exported to several countries with great success and are backed with scientific research of medical professionals and non-medical.

## **THERMALISME IN SPAIN, WHAT'S NEW?**

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One year after last FEMTEC congress Spain keeps active on scientific, social and economic thermalismE framework.

On the scientific area, we will present researches published during last year on the thematic area belonging to several scientific groups in Spain<sup>1-2-3-4</sup>. In addition, we have celebrated the XVIII Congress of the Spanish Medical Hydrology Society the 6<sup>th</sup>-7<sup>th</sup> of December 2014 in Fitero (Navarra) with 4 keynotes, 37 oral communications and 5 posters published on the Annals of the society<sup>5</sup> and IV Iberoamerican Peloid Congress (CIBAP 2015) in July in Boi<sup>6</sup>, Cataluña, with 20 keynotes and 44 oral presentations about peloids in a multidisciplinary use.

On the social area, there are great news, because we have had the fourth Ministerial Order about the ThermalismE Social Program so called IMSERSO (Ministry of Health) and it's the first time that substantially modify the characteristics and conditions of the Program in +/- 26 years (the last three were: the creation, the extension to disability and pensioners over 60, and another of error corrections in the beginning of the program)<sup>7</sup>.

On the economic area, we have had the occasion to assist to the II Reflexion Conference about the Spanish Thermal Industry (ANBAL) celebrated in Alange (Extremadura) the 8<sup>th</sup>-9<sup>th</sup> of July 2015, where issues such as quality systems and new marketing strategies and trends of thermal tourism were discussed: the "vacation club" and "spaincares: Spanish spa tourism cluster", regarding wellness in one hand and the new cross-border European regulation in the other one...the "scenario" is definitely changing also in Spain.

#### REFERENCES:

1. Armijo F, Maraver F, Carretero MI, Pozo M, Ramos M, Fernandez-Torán MA, Corvillo I. The wáter effect on instrumental hardness and adhesiveness of clay mixtures for pelotherapy. *Appl Clay Sci.* 2015 Sep; 114,395-401.
2. Maraver F, Vitoria I, Ferreira-Pêgo C, Armijo F, Salas-Salvadó J. Magnesium in tap and bottled mineral water in Spain and its contribution to nutritional recommendations. *Nutr Hosp.* 2015 May;31(5):2297-2312.
3. Morer C, Tenas D, López-Fernández MA, Maraver F. [Balneotherapy in osteoarthritis]. *Aten Primaria.* 2015 Aug-Sep;47(7):473-4
4. Hernández-Torres A (Coord.). *Peloterapia: aplicaciones médicas y cosméticas de fangos termales.* Madrid, Fundación Bìlbilis: 2014
5. Proceeding of XVIII Congress of the Spanish Society Medical Hydrology. *Bol Soc Esp Hidrol Méd* 2014; 29(2): 101-198
6. Proceeding of IV CIBAP BOI 2014. *Balnea* 2015; 10: 1-360
7. Orden SSI/1688/2015, de 30 de julio, por la que se regula el Programa de Termalismo del Instituto de Mayores y Servicios Sociales. *BOE.*2015; 190: 71728-71733

## **INTERDISCIPLINARY CENTER FOR TREATMENT AND RESEARCH IN BALNEOLOGY, A MODEL FOR THE INTEGRATION OF BALNEOLOGY IN UNIVERSITY (SCIENTIFIC) MEDICINE?**

### **NAUMANN J.**

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Balneotherapy and Health Resort Medicine have a long lasting tradition both in the Eastern and Western hemispheres. Nevertheless, the scientific evidence concerning the efficacy of these treatments is mostly poor, and most of the balneological university centers in Germany have disappeared over the past years. So balneotherapy, an effective and well- tolerated treatment with high acceptance, may just disappear from the catalog of services approved by statutory health insurers and even from medical practice in Germany.

With the effort of the ministry for rural areas and the ministry of science of Baden-Württemberg, the health resort organisations of Germany and the University of Freiburg the IBF Balneology was started in 2011.

Since then this center tried to demonstrate, that scientific research can be done on a level to achieve acceptance in the scientific medicine.

We performed:

- Reviews, including systematic reviews (fibromyalgia)
- Randomized clinical trials (hypertension)
- In vitro studies (wound healing)
- Physiological studies (depression, evaluation of an underwater ergometer)

We are also accrediting and counseling health resorts and are part of the continuing development of the German quality criteria that have to be fulfilled by the health resorts (“Begriffsbestimmungen / Qualitätsstandards für Heilbäder und Kurorte, Luftkurorte, Erholungsorte - einschließlich der Prädikatisierungsvoraussetzungen - sowie für Heilbrunnen und Heilquellen”) and German laws according to health resorts (“Kurortgesetz Baden-Württemberg”).

Future projects are: helping to build up an e-library in Europe, that should include Russian literature (making up to 30% of balneological literature) and a network to enable European projects as part of Horizon 2020 or Interreg.

Thus the IBF Balneology may be a model for the integration of balneology in university (scientific) medicine.

## **ACCREDITION OF CHILDREN'S REHABILITATION SERVICE OF THE REPUBLIC OF THE KAZAKHSTAN**

**OSPANOVA S.**

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At the present stage of development one of the aims of health care is the guarantee of safety and quality of medical care. World Health Organization (WHO) in the report "The aim of achievement of health for all" defined the following purpose: "By 2000 all member states of WHO have to have the relevant structures and mechanisms for ensuring continuous improvement of quality of the medical and sanitary help". In Kazakhstan "The state program of reforming and development of health care of the Republic of Kazakhstan for 2005-2010" was developed and introduced. In its development of system of accreditation is provided in the healthcare sphere - for quality management of medical care. We studied the international experience of operations of the rehabilitation centers of the near and far abroad: Russia, Ukraine and Lithuania. From the centers of foreign countries: Israel, South Korea, Germany, Switzerland, USA.

The analysis of data on the rehabilitation centers of the CIS and the abroad showed that in the accredited centers of the abroad and not accredited centers of the CIS considerable distinctions in the organization of operations, and in the attitude towards patients and employees are observed.

In not accredited centers of the CIS operations aren't standardized, there are no the approved algorithms of operational procedures, the same procedure in different offices can be carried out differently.

In the accredited centers productions are directed on continuous improvement of quality and safety of patients and employees, standardized. The opinion of patients on level, quality and service of rehabilitation services is systematically studied.

Be accredited by the rehabilitation centers will lead to continuous improvement of quality and safety of the rendered services, satisfaction of patients, increase of trust of the population, increase of competitiveness of the center in market conditions.

Along with national accreditation, the Republican children's rehabilitation center passed the international accreditation JCI (International Accreditation Commission). Our center is the first center accredited by the international accreditation commission JCI on the international standards. The center passed accreditation with the result, best in the world: 3 remarks and 3 recommendations (at admissible 35 remarks).

## **IT IS REALLY TIME FOR PREVENTION IN EUROPEAN MEDICINE**

### **PONIKOWSKA I.**

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Nowadays restorative medicine develop rapidly, especially in the field of medical technology. This implies increasing of cost on health care. Increase the expenditure on the health care could be the reason of economic crisis in European Countries. The most expensive are the cost of diseases depending from abnormal life style as: coronary heart disease, stroke, hypertension, diabetes.

To inhibit of this trend of dynamic increase medical cost it is development of global prevention. In european countries expenditure on the prevention is very low only 3-9%, average 6% of the total fund for health care

It seems that FEMTEC cooperating with WHO is proper institution which could through the WHO to take attention to these trends in the modern medicine. It should not only increase the financial resources on prevention but also the possibility of using more the potential of thermal medicine. Thermal medicine in the field of prevention could play crucial role. This branch of medicine has medical resources, developed own methods of treatment, multi-speciality medical staff, good natural environment and so on. Most of balneological methods is useful for prevention. In most european countries is existing thermal medicine, where are treated alot of patients with chronic diseases. Part of thermal base is designed for recreation, wellness and cosmetic activities. The curative effects of thermalism should be used mostly for the treatment and prevention.

## **PROSPECTS OF DEVELOPMENT OF THE RESORT OF THE RUSSIAN FEDERATION**

**RAZUMOV A.N.**

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In modern conditions, concern for human health is considered to be the most important and priority task for the state and society, while spa treatment is an integral part of public policy and an important sector of the health care system.

Currently, despite the difficult times, the spa industry in Russia continues to be a highly developed industry implementing the task of health improvement and rehabilitation of people with different socially significant diseases common among adults and children.

However, today, both the state and health authorities do not focus on the problems of the spa treatment organization in the Russian Federation even with the high level of morbidity among adults and children and the increasing need for rehabilitative treatment and rehabilitation.

The Russian Federation has extensive natural healing resources located in large health resort areas and resorts and has a huge potential for their effective use and development that can be considered as an additional investment in human health.

It should be stressed that a characteristic feature of the Russian spa organizations has been and remains a scientific approach to the use of natural healing and preformed factors at resorts.

In addition, at present, such area as resort and medical tourism, which can successfully take advantage of the unique resort resources for health improvement and significantly expand the scope of spa services for adults and children as well as improve physical and occupational health and quality of life, is of particular interest and is being effectively developed.

Within the given field, the need for these actions is urged by a number of medical and social preconditions which, first of all,

should include the current need for the development of the prevention system through the introduction of highly effective testing technologies from both medical and economic point of view and drug-free methods of increasing the functional reserves of human body weakened by the impact of adverse environmental factors and activities or as a result of illness at the stage of recovery or rehabilitation. Spa organizations which specific feature is the provision of recreational and rehabilitation services based on the preemptive use of natural therapeutic factors occupy a special place in this system.

With the ongoing economic crisis and the lack of macroeconomic prerequisites for the rapid revitalization of the spa industry of the Russian Federation, at the moment, for various reasons, there is no full-fledged formal legal regulation of relations within the spa industry. In many ways, this situation is the result of disagreements between the federal agencies, which are not of a formal but of a principal character, as well as the result of differences in the ideas on construction and development of the spa complex in Russia generally and spa services market in particular.

Thus, the analysis of the spa industry organization features in Russia shows that there is a need for the development of new approaches to conducting and further developing the spa industry in the interest of the public health of the Russian Federation.

The main goal of the state policy in the spa industry of the Russian Federation should be the study, use, development, and protection of natural healing resources, health resort areas and resorts in Russia at the aim of health improvement and treatment of different categories of citizens.

The key barriers to the spa industry development are:

- lack of the unified state management of the spa industry of the Russian Federation;
- inadequate organization of spa treatment;
- lack of financial support of the state obligations in connection with the spa treatment of citizens;
- low solvency of the population;

- unsustainable use of natural healing resources;
- depreciation and insufficiency of the material and technical equipment of the health centers;
- shortage of staff.

All this requires the immediate development and implementation of the measures aimed at improving the legal framework of the spa industry in the Russian Federation in order to develop new approaches to the organization and self-regulation of the spa services market.

It should be noted that Russia has already transferred from the branch system of managing the economy to the functional one, and we have functional departments and agencies which are supposed to regulate the general principles of work of different sectors of economy. One of the most cumbersome, fragmented, and, at the same time, ineffective regulatory systems has been developed in the spa complex where many bodies regulating specific spheres of relations connected to the production and provision of spa services are in place.

In the context of the above, the solutions to the problems of the organization and development of the spa industry in the Russian Federation are the following:

- to develop a concept of the preservation and development of the spa industry in Russia;
- to update the legal acts governing the organization of the spa industry in the Russian Federation;
- to develop the training programs for the medical and administrative staff and their subsequent certification, as well as to introduce the program on rehabilitation medicine, balneology and physiotherapy within the training of doctors in higher education institutions, as well as nurses in medical schools;
- to preserve the main resort areas and their natural healing resources that form the basis of the spa complex activities of the country.

## **THE FUTURE OF MEDICAL SPAs: IS A NEW PARADIGM FEASIBLE? LEGAL AND INSTITUTIONAL PATTERNS**

### **SANTUARI A.**

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It is well known that “thermae” has been changing from a “place” where to go to get cured to a “destination” where to find solutions to health and life expectations at large. The evolution of the cure concept has brought with it then a change in the way hot spring resorts are perceived by the public. Along with the growth of the preventive role of medical SPAs, they have also been regarded as a component of the overall “health market”. This market is wider than both thermal medicine and the wellness system only. Indeed, the “health market” comprises of various and different aspects, such as sports, life style, food education as well “other” types of tourism.

This evolution implies that SPAs are no longer regarded as a social phenomenon. By contrast, SPA resorts are considered to be places where to spend individual and quite short stays, during which “tourists” get also cured but especially are taken care of. Indeed, whereas in the past medical SPAs were used to be attended for relatively long periods of time and by ill people, nowadays hot spring resorts are visited for shorter periods of time by “health tourists”. These are individuals who are willing to exploit many or all the tourist opportunities that the area can offer to them after being treated. It is noteworthy that these treatments are no longer only strictly medical but they can also be (and it is often so) referred to a general state of health wellbeing.

In the light of the aforementioned evolution, will medical SPAs be the same in the future? Will they be necessary – where applicable – dependent on national health systems? What if, against a background in which many European countries are facing significant financial and budget restraints, medical SPAs will cease to be

supported by the national health systems? Will they lose their health component? Will they be less attractive to users? Will they have to face an inevitable decrease both in economic and reputation terms? These are questions that SPA establishments and those who are engaged in the sector are to challenge so as to come up with new ideas about how an important health sector could develop in the near future.

As to the government funds that medical SPAs benefit from in some European countries, it is noteworthy that such a financial support has progressively been decreasing. This trend has caused medical SPAs to supply their services onto a market in which private individuals are willing to pay for the treatments. These remain to a large extent perceived as having an important health component, which is regarded as beneficial to individuals' health needs. Therefore, any political measure that would kick medical SPAs treatments off the provisions that national health systems ensure to their citizens should not be faced with too much anxiety. Those medical SPAs that are capable of supplying health services coupled with ancillary tourist services seem to have already partly balanced such a "loss".

The international movement of persons willing to travel to find out the "right place" to go for their health has witnessed to the importance of singling out a proper strategy by which medical SPAs can be deemed as that place. Indeed, they can offer health services of high quality and standards based on qualified professionals and a well rooted scientific validation of the cure properties.

Accordingly, the future of medical SPAs cannot but be defined by the strengthening of scientific research aimed at showing the beneficial health implications of the services and provisions supplied. Likewise, investments are to be made to enlarge the range and variety of health provisions that individuals can find in medical SPAs. In this respect, for instance, a new role for preventative medicine should be explored so as to test the potential of medical SPAs to match individuals' needs.

A renewed attention should be devoted to the modes and procedures by which medical SPAs can be made known to the general public. On the one hand, national and regional governments should promote better and in a more effective way the natural resorts where medical SPAs are usually located. On the other hand, health authorities should foster and monitor the licensing process at the end of which medical SPAs are registered in the single countries. As the European Court of Justice stated in the Leichtle case, the registration requirement is of a paramount importance to identify a medical SPA.

A positive evolution of medical SPAs also requires a new organizational pattern: the representatives of medical SPAs are expected to program the services they supply as attractive to companies' funds and health insurance funds, which are seeking new health services to offer their members/insurers.

Is then a new pattern for medical SPAs feasible and also desirable? The answer is yes provided that all actors (politicians, health and tourist authorities, private investors) are given the adequate legal, organizational and financial frameworks by which to test and prove their partnership effective.

## **VARIOUS ASPECTS OF USING OF THE NATURAL HEALING FACTORS IN THE RESORT TOWN OF ANAPA ON THE EXAMPLE OF THE SANATORIUM-RESORT COMPLEX "DiLUCH"**

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The aim of the study: to show the possibility of using natural healing factors of climatic, balneological and mud cure resort of Anapa in the medical rehabilitation, treatment, health improvement, prophylaxis and SPA programs on example of a sanatorium complex "DiLUCH".

There are represented the characteristics of natural healing factors such as climate, sea water and algae of the Black Sea, Anapa mineral waters and salt brines for internal and external use, peloids, seafood, grapes and grape vine (ampelotherapy and wine therapy). A strong modern medical and diagnostic base of the sanatorium complex "DiLUCH" enables to carry out all kinds of health resort activities - from the second stage of medical rehabilitation to the medical tourism and wellness programs.

Medical rehabilitation is carried out within the public-private partnerships in the areas: cerebrovascular disease, unstable angina, diabetes, recovery after an operation for gastric ulcer, duodenal ulcer, pancreatitis, laparoscopic gallbladder removal, cancer after definitive treatment. Patients arrive at the rehabilitation sanatorium immediately after hospital treatment.

Within the therapeutic treatment we offer 29 specialized programs for adults and children, including a unique endoecological rehabilitation program, wich has Russian Federation Government Award.

Medical Cosmetic Center & SPA "Maria" has a wide range of facial and body treatment programs, including the use of mineral water, peloids, seaweed, products of viticulture and winemaking.

All rehabilitation and therapeutic programs are generally based on the use of natural healing factors of Anapa region.

These natural healing resources of federal resort of Anapa combined with modern methods of spa treatment offer to the patients with severe disabling diseases a unique opportunity to recover their health and return them to work patients.

## **CARDIO WELLNESS AS THE PRIMARY MEANS OF PREVENTION OF CARDIO-VASCULAR CATSTROPHIES**

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Research objectives:

1. To develop a new version of medical wellness – “Cardio - wellness” as a health-improving resort-based course of cardiovascular disease prevention under medical supervision.
2. To create and implement a complex program on cardiovascular disease prevention that includes professional interference aimed at changing the patient's lifestyle, based on change of behavioral models.
3. Assess the effect of the program on preservation of the functional reserve of the body and increase of adaptive capacity.

Methods used:

1. Health condition diagnostics for stratification of cardiovascular disease risk
2. Treatment course structured in order and frequency, aimed at endoecology improvement through nutrition, detoxification, lymphatic drainage, treatment aimed at tissue metabolism improvement, hydrotherapy, physical therapy and sports.

Results and conclusions:

With “Cardio-Wellness” program the following can be achieved:

1. Detect clinical and/or behavioral risk factors
2. Develop an individual Cardio-wellness program plan, giving the patient full information on main objectives of the program, and prescribing adequate daily physical exercise along with a complex of electro- and balneo-procedures.

3. Instruct the patient how to achieve target levels of body mass, blood pressure, blood lipids, to change behavioral habits; give nutrition consultation, help with stress management.

REFERENCES:

1. Monograph "Health-improving technologies at medical resorts" Institute of Experimental Medicine RAMS, Academician Safronof G.A., Saint Petersburg, 2014
2. "Russian National Atherosclerosis Society" Journal №4, 2011
3. Manual of European Society of Cardiology and European Atherosclerosis Society, 2011
4. "Climatotherapy" manual, A.P. Khlopov, V.S. Sevryukova, 2008
5. Monograph «Coronary artery disease balneotherapy" V.F. Kazakov, 2004
6. Monograph «Health of the Healthy» Academician A.N. Razumov, 1996

## **MEDICAL VALUES AND VIRTUES OF ROMANIAN OLD BALNEOTHERAPY AS INTEGRATIV AND HOLISTIC MEDICINE IN III<sup>RD</sup> MILLENIUM**

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Aim of the study – to present the added value of balneotherapy in holistic and integrative context.

Materials and Methods. The main piece of legislation governing health care in Romania is the Law. 95/2006 on healthcare reform, as amended and supplemented.

The law imposes rules for the relevant activities financed from public funds, and private. First, the law determine the responsibilities of key actors in the field, namely the Ministry of Health (MS) and its decentralized services, National Health Insurance House (CNAS) and county health houses. Second, the law establishes levels and health service providers in Romania, from primary care through family doctors to the hospitals public and private as the tertiary. Also impose general rules of supply and financing of health services at every level. In addition, the law contains provisions relating to the drugs, from marketing to distribution and control.

Romanian balneal patrimony included in 2009 160 spa entities from witch 100 are registered in “Health/Spa resort Register ” edited by “Ministry of Tourism” after the authorization of natural factors and methodology of using them made by “National Institute of Rehabilitation and Physical Medicine” and the number increasing every year.

Number of beds for rehabilitation, physical medicine and balneology in Romania, including the balneal resorts are 4850 beds in 2011 and on have to add beds for recovery Neuro-Psycho-motor in number of 463. Infrastructure of resorts consists in 3 types of

buildings/facilities for cure: hotels from 19th century, hotels from second part of 20th century and new spa complexes developed in last years. Most of them, 80% of patrimony belong to the private owners, 20% of patrimony is public property of Health Ministry and Pension Found.

To add value to old balneology means high costs for discovery of resources, for investigate and characterize the resource and maintaining in exploitation the resource.

The economic and political leaders will help this intercession if the balneologists, make themselves heard in the polyphony of medical sciences.

## **KEYWORDS AND TOPICS FOR IMPROVING VISIBILITY OF STUDIES IN BALNEOLOGY**

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Aim of the study – to improve the visibility of studies made upon natural therapeutic factors.

Materials and methods. Web sites, journals, and libraries were investigated using most known keywords related to balneology/therapy, medical hydrology, climatology/therapy for articles, RCT's, previews and meta analysis correlated cumulative knowledge of keywords.

Results – for seven hundred eighty nine keywords we found:

- a. One thousands six hundred eighty nine items referring to substances;
- b. Three thousands seventeen items referring to ailments;
- c. Two hundred sixteen items referring to therapeutic action;
- d. Five hundred and one items referring to pharmacological action;

We searched databases (PubMed, Medline, Cochrane Library, Web of Science) for abstract and articles published between 2004 and September 2013.

In PubMed, for balneotherapy we found 11.548 scientific & medical abstracts/citations, for mudtherapy, in eleven databases were found one thousand six hundred and fourthy two scientific & medical abstracts/citations and one thousands seven hundred and ninety full-text journal articles.

Investigating balneotherapy following rigorous clinical research can be methodologically challenging. The methods used in the clinical trials does not closely resemble the use of balneotherapy in real life, limiting the applicability of the conclusions.

The double-blind model purposefully sacrifices this condition in hopes of identifying the placebo effect. The fact that this can distort what is being tested is generally ignored, or is considered an acceptable price to pay for an objective approach.

Conclusions. To improve the visibility of research in balneology are needed good randomised control trials and appropriate keywords to describe the study.

## **THE USE OF MODIFIED PELOIDS IN COMPREHENSIVE ORTHOPEDIC REHABILITATION**

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Health resort «Dunes», LLC «Gittin»

The goal of the study: the assessment of feasibility and effectiveness of peloid trophic action combined with analgesic, anti-inflammatory, irritating and antibacterial effect of menthol and camphor (modified peloids).

Theoretical background of the study was a hypothesis for peloid supramolecular structure biological activity. According to this hypothesis one of the therapeutic aspects of peloids is the interaction of peloid macromolecules and skin receptors. The intensity of this interaction depends on a number of factors, including macromolecules concentration and receptors activity. Menthol and camphor are activators of a large range of receptors, this determining their use for peloids modification. Macromolecules concentration decreases with temperature rise, therefore the modified peloid application was carried out without the peloid heating at room temperature.

The course of rehabilitation treatment of 80 patients was analyzed: following total hip arthroplasty (32 cases), total knee arthroplasty (26 cases) and cruciate ligament plasty (14 cases).

Comprehensive rehabilitation included thin-layer applications with modified peloid mixtures with menthol (34 cases) and menthol and camphorated oil (24 cases).

Peloid applications were not used in 20 cases because of general contraindications. This patients consisted first control group. The second control group consisted of 56 patients who underwent similar surgery and rehabilitation treatment with routine peloids.

Time-patterns of the following factors was estimated: subjective sensations (general well-being, physical activity, state of mind, pain

syndrome intensity, paresthesia), changes in a range of motion, postoperative edema regression, local temperature.

The present study demonstrated that the patients' group under study showed general well-being, physical activity and state of mind to be significantly higher than in a control group. Postoperative edema resolved 1.3 times faster. Temperature normalizing occurred at 3-4 days of treatment. Pain syndrome, paresthesia was controlled 2-3 days earlier, than in a control group.

Faster management of inflammatory manifestations in patients of the studied group allowed us to start active working on the motion at the 5-7 day of treatment.

Thus, the use of innovative methods in comprehensive orthopedic rehabilitation, particularly modified peloid mixtures with menthol and camphor, enabled to improve treatment process, accelerate the process of rehabilitation and reduce the period of hospital stay.