

**INTERNATIONAL JOURNAL**  
**for**  
**RESPONSIBLE TOURISM**

“PERSPECTIVES ON HEALTH TOURISM”

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### *Statement of Purpose*

The *International Journal of Responsible Tourism (IJRT)* is a publication that aims to offer, through scientific papers, a better understanding of the responsible tourism within the tourism promoter environments, to explain the consequences of applying these principles for the Romanian society and for the entire world and open a communication platform for successful international concepts and practices.

*IJRT* will include scientific papers submitted to the International Forum for Responsible Tourism program that have passed the peer-review stage and have been debated in the forum, considered

to be important documents for understanding and developing responsible tourism.

*IJRT* intends to become a reference journal in the field, being the first initiative of this kind in Romania, and will be published exclusively online and quarterly by the Amphitheatre Foundation. The Journal will include applicable notes on the meaning of responsible tourism and methods of increasing the touristic potential by preserving cultural and social identity, the natural and anthropic environment, elements to be integrated in responsible tourism, along with an adequate education in the field.

# INTERNATIONAL JOURNAL for RESPONSIBLE TOURISM

“PERSPECTIVES ON HEALTH TOURISM”

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## THE MULTIDISCIPLINARY APPROACH OF GRAVES OPHTHALMOPATHY MANAGEMENT - A SOURCE OF COMPETITIVENESS OF THE MEDICAL TOURISM IN ROMANIA

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### **Abstract:**

*Chronic diseases have become a major health issue in Europe and the management of these diseases is very complex and include major costs for high performance imagistic investigations and treatment. Because health insurances cover less medical services, health tourism in Romania has become attractive for patients from western Europe, due to lower costs of treatment and the professionalism of the medical staff. The Graves disease is a condition with multisystemic character, that affects all the organs and systems of the body and needs a multidisciplinary approach for its management. Graves' ophthalmopathy (GO), the most common extrathyroidal manifestation of Graves' disease, is considered a constellation of signs and symptoms resulting from chronic autoimmune-related orbital inflammation, which inevitably influences the quality of life of affected patients, thus being a real problem of debate with multidisciplinary therapeutic approach. Imaging studies of the orbit detect extraocular muscle or fat enlargement in 90% of adults with Graves hyperthyroidism, therefore MRI being an irreplaceable tool in delineating the stage of the disease and the course of treatment. The therapeutic management of GO is focused on three main aspects: smoking cessation, restoring and maintaining euthyroidism, and specific treatment of eye changes. Whereas the mild form of GO requires only protective local measures, moderate and severe forms request a complex approach including medical treatment, radiotherapy or orbital decompression. Taking into account all these aspects, the management of GO should never be undertaken by the endocrinologist or by the ophthalmologist acting alone and for a proper approach of the disease, it should be a strong collaboration between the endocrinologist, the ophthalmologist and the radiologist.*

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Keywords: health tourism, Graves' ophthalmopathy, classification of the severity of GO, therapeutic decision.

### **Introduction**

**Medical** tourism for people from western Europe has higher attractiveness in the past few years in Romania because:

- population is aging
- economic crisis in Western Europe
- population has less purchasing power
- health insurances cover less medical services .

Regarding the distribution of doctors in hospitals per 100 000 inhabitants, the statistics reflect that in Dolj County there are 107 doctors for every 100 000 inhabitants, more than in the other counties of the Oltenia region.

Competitive advantages such as low prices for imagistic investigations and for surgical interventions and quality of care offered by clinics in Romania determine annually more and more foreigners with chronic diseases to be treated in our country. Modern innovative methods of interaction with the patient such as on-line diagnosis make health tourism in Romania more attractive for patients from western Europe.

Graves disease (GD), initially called Graves-Basedow disease from the name of the two proeminent authors who outlined the main characteristics of the disease, was first described in 1835 as the triad of hyperthyroidism, goiter and exophthalmos (Burch & Wartofsky 1993). Although almost 200 years passed since then, Graves ophthalmopathy still remains a pathogenetic enigma and a multidisciplinary therapeutic challenge.

The natural history of Graves ophtalmopathy was first reported by Rundle. The first stage-the dynamic active progressive phase- is characterised by a gradual deterioration due to the development of the autoimmune process and may occur over 6-24 months. The inflammatory activity decrease is followed by a silent phase. Subsequently, a spontaneous slow improvement can be observed within the next year or even more. Finally, the regression of the inflammatory process, unfortunately, does not lead to restitutio ad integrum, resulting in fibrosis that prevents the affected tissues from returning to their previous healthy state – static phase (Rundle & Wilson 1945; Rundle 1957).

Nowadays, Graves' ophthalmopathy (GO), the most common extrathyroidal manifestation of Graves' disease, is considered a constellation of signs and symptoms resulting from chronic autoimmune-related orbital inflammation, which inevitably influences the quality of life of affected patients, thus being a real problem of debate(Bartalena & Tanda 2009; Abraham-Nordling et al 2010).

## **Epidemiology**

Incidence of GO: A representative county in the United States of America revealed an age-adjusted incidence rate of 16 cases per 100.000 population per year for females and 2.9 cases per 100.000 population for males with an estimated prevalence of 0.25%. (Bartley 1994) Meanwhile, subsequent studies in Europe reported an incidence rate of moderate to severe GO of 16.1/million per year (women: 26.7; men: 5.4), with no change associated to iodization of salt (Laurberg 2012).

The onset of GO in most patients is closely related to Graves hyperthyroidism, at some point 90% of patients with orbitopathy having hyperthyroidism. In the same time, in 90% of adults with Graves hyperthyroidism, extraocular muscle or fat enlargement is detected through imaging studies (CT or MRI) of the orbit. Despite this, GO can also develop in euthyroid or hypothyroid patients, but it was reported that a half of initially euthyroid patients are diagnosed with hyperthyroidism within 18 months (Burch & Wartofsky 1993; Lauberg et al. 2012; Bahn 2010).

The incidence of GO describes a bimodal peak in age onset in both men and women with the first peak between 40 and 50 years of age and the second one occurring between 60 and 70 years of age with a 2:1 sex ratio for women (Burch & Wartofsky 1993; Bartley 1994; Stan & Bahn 2010). However, men with GD seem to be exposed to the same risk of GO development. It has a more severe form and its incidence increases with age comparing to female counterparts (Stan & Bahn 2010). The predominance of adipose tissue expansion has also been reported in patients under 40 years old, whereas patients over 60 years old develop mostly extraocular muscle enlargement (Vincent et al 2011).

## **Pathogenesis**

It is widely accepted that GO is an autoimmune disorder, but its pathogenesis appearing to involve complex molecular and cellular processes is still incompletely understood. The histopathological changes advocates for the autoimmune origin, and besides local cytokines (IL-2, IFN- $\gamma$ , TNF $\alpha$ ), other factors (disturbed orbital circulation, compression) may play a role.

Thyroid-stimulating hormone receptor (TSHr) is a glycoprotein hormone receptor, member of the G protein coupled receptor family which is considered to be the shared antigen of the thyroid and orbit in the pathophysiology of Graves disease. TSH binding to TSHr and thyroid stimulating immunoglobulins results in receptor activation and leads to increased thyroid growth and excessive thyroid hormone production known as Graves' hyperthyroidism. This is thought to be the

basis for hyperthyroidism and the development of goiter. Research has revealed an important role of TSHr in the immunopathogenesis of Graves' orbitopathy, as it can be detected in orbital adipose tissue of patients with GO (Iyer & Bahn 2012; Rapoport & McLachlan 2007; Hunt et al 1995). According to this fact, recent studies suggest an increased expression with a greater gene expression of the TSHr in orbital preadipocytes after differentiation into adipocytes and also higher levels in orbital fibroblasts in patients with GO compared to normal orbital tissue specimens (Douglas et al 2009; Valyasevi et al 1999). Moreover, clinical trials support a correlation between TSHr expression in GO tissues and the clinical activity score or the severity of the disease. Both TSHr stimulatory and TSH-binding inhibitory TRAbs levels are correlated with the clinical activity score (Khoo & Bahn 2007).

In GO, autoreactive T (mostly CD4+ cells) and B lymphocytes infiltrate orbital fat and extraocular muscles by recognising the antigen shared by orbit tissue and by the perimysium of extraocular muscles. CD4+ and CD8+ T cells can be observed early, among the infiltrate (Pappa 2000). Meanwhile, Th1 lymphocytes (and its associated family of cytokines – tumor necrosis factor- $\alpha$ , interferon- $\gamma$  and interleukin-2) predominate the early stage of developing the disease and promotes the active phase, whereas Th2 (interleukin-4, interleukin-5, interleukin-10) can be found later in the plateau phase and consequently in the resolution of the disease (Han et al 2005; Naik et al 2008).

Cytokines (CK) have a putative role in orbital tissue activation and remodelling of GO, being likely to play a role in the cascade of the autoimmune reactions. Several studies suggested their importance in the development and progression of the disease: cytokines stimulate fibroblasts to synthesize and secrete glycosaminoglycans which attract fluids into the retroorbital space, promote the expansion of orbital content and also stimulate the proliferation of fibroblasts (Burch & Wartofsky 1993; Korducki et al 1992; Heufelder et al 1995). A number of studies related that orbital fibroblasts from patients with GD respond in a different way to CK actions, being notable the impressive feedback to interleukin-1, leukoregulin, and CD154.

The expression of the surface glycoprotein CD90, known as thymocyte antigen 1 (Thy-1), became a tool in defining the function and phenotype and role of orbital fibroblasts. Thy-1 expression of perimysial fibroblasts can determinate the differentiation into myofibroblasts, and their capacity for undergoing adipogenesis may be limited. Orbital fat and connective tissue contain both Thy-1+ and Thy-1- fibroblasts. Thy-1+ fibroblasts determinate inflammation and orbital fibrosis through their production of IL-6, IL-8 and extracellular matrix components, whereas Thy-1- fibroblasts can differentiate into adipocytes that lead to fat expansion. Meanwhile, the activation of fibroblasts promotes the production of

glycosaminoglycans, which causes supplementary volume expansion within orbital tissues (Chen et al 2006; Naik et al 2010).

### **Risk factors**

The occurrence and the course of GO are influenced by a complex combination of factors. These include genetic and environmental factors, as well as advanced age, stress, drugs, and factors related to thyroid dysfunction.

Beginning with gender distribution, we discussed before that GO occurs more frequently in female patients following the pattern of autoimmune diseases. A number of recent studies have shown strong correlation with regions of the X-chromosome, the genes located at this level apparently playing critical roles in the maintenance of immune tolerance. Thus, X-gene haploinsufficiency has been scrutinized for its potential as a common mechanism for autoimmune disease (Gianoukakis & Smith 2008).

**Genetic factors:** Research of the last decades has focused on identifying susceptible genes associated with GO.

In GD, being reported a number of variations in genes regulating immune function such as antigen-DR3 (HLA-DR3); cytotoxic T lymphocyte antigen (CTLA-4); protein tyrosine phosphatase, non-receptor type 22 (PTPN22); CD40; IL-23 receptor (IL-23R); Fc receptor-like protein 3 (FCRL3) and also in genes encoding thyroid specific proteins (TSH-r and thyroglobulin), it has been developed the necessity to research if the two processes share disease susceptibility genes and to distinguish from the pool of all patients with GD those who are most likely to develop GO (Zhang et al 2011; Gu et al 2010; Brand et al 2007; Huber et al 2007; Hiratani et al 2005; Tomer et al 2002; Tomer et al Dec 2002).

Huber et al. related two IL-23R polymorphisms (rs10889677 and rs2201841) associated with GO, predisposing to GO by changing the expression and/or function of IL-23R, thereby promoting a proinflammatory signaling cascade (Huber et al 2008). In contradiction with this, a more recent study analysed polymorphisms of IL-23 R, HLA, CTLA4 and TSH-r in a cohort with thyroid associated ophthalmopathy and they didn't find any genetic differences compared to patients with GD without ocular involvement (Yin et al 2012). Regarding the polymorphism of PTPN22 there are also contradictory results (Syed et al 2007; Skorka et al 2005).

These results, however, require confirmation in large-scale studies because most of the studies have concluded that the gene polymorphisms contribute slightly to overall disease susceptibility.

**Environmental factors:** Smoking has been the most incriminated modifiable risk factor for development and deterioration of GO.

The exact mechanism underlying the relationship between smoking and GO is not fully understood. It has been suggested that smoking has effects on the immune system. It increases the production of the proinflammatory cytokines and smokers tend to have higher serum concentrations of autoantibodies than nonsmokers. Also IL-1B and IL-6 were reported to be overexpressed in smokers with severe active GO compared to non-smokers, suggesting that smoking activates pathways associated with adipogenesis and inflammation (Planck et al 2014; Holm et al 2005).

Both active and passive smoking and even past smoking influence the course of GO and moreover represent an independent risk factor associated with impaired response to intravenous corticosteroids in patients with GO and also attenuate the efficacy of orbital radiotherapy (Xing et al 2015; Krassas et al 2005; Hegediüs et al 2004).

### Clinical features

Approximately 25-50% of patients with GD develop GO, while 5% of patients will suffer vision-threatening forms including loss of sight from optic nerve compression. Graves ophthalmopathy encompasses a wide spectrum of signs and symptoms range from tearing to eye pain to double vision, and signs extended from conjunctival injection and ending with visual loss (Garrity & Bahn 2006).

Currently the stages of GO are classified considering the clinical activity score and severity signs. The Clinical Activity Score (CAS) is one of the most used scoring system in practice and in research (Mourits et al 1989). The CAS adopts a 10 point system with the sum of all positive scores being indicative of disease severity:

I	Painful, oppressive feeling on or behind the globe
II	Pain on attempted up-, side-, or down-gaze
III	Redness of the eyelids
IV	Redness of the conjunctiva
V	Chemosis (conjunctival oedema)
VI	Inflammatory eyelid swelling
VII	Swelling of caruncle or plica
VIII	Increase of proptosis of more than 2 mm in one to three months
IX	Decrease in visual acuity of one or more lines in one to three months
X	Decrease in eye movement of more than 5° in any direction in 1-3 months

The mild stages are characterised by palpebral retraction, the iris being completely discovered by eyelids (Stellwag-Darlymple sign) and dissinergism

between the eyeball and superior eyelid movement that occurs in downward looking (von Graefe's sign) but also between eyeballs and frontal muscles movements in upward looking (Kocher's sign). Palpebral retraction of the superior eyelid can determine inability of closing the eye with consecutivelagophthalmos. Lagophthalmos can further lead to chemosis and keratoconjunctivitis. Patients also have an impaired function of the lacrimal glands. Non-specific symptoms include: photophobia, orbital pain and palpebral edema. The moderate stage describes more significant signs and symptoms caused especially by ocular motility disturbances. The first affected muscle is the inferior rectus muscle, thus patients present diplopia when looking upward and laterally. The second affected muscle is the medial rectus muscle, then followed by other muscular groups in an asymmetrical way. In severe stages progressive exophthalmia, restrictive myopathy and compressive optic neuropathies can be observed (Dumitrache 2012).



The NOSPECS mnemonic system is also a useful tool for practitioners which uses a 7 class scheme from 0 (no signs or symptoms) to 6 (sight loss).

Class 0 (no signs or symptoms): About 50% of patients with GD do not have clinical evident ophthalmopathy but imaging studies (MRI OR CT) can reveal enlargement of the extraocular muscles (Gupta et al 2009).

Class I (Only signs-limited to upper lid retraction and stare, with or without lid lag; no symptoms): Signs of this class are found in 35-90% cases, depending on the ethnicity of patients with Graves' disease (Lim et al 2008).

Class II (Soft tissue involvement - edema of conjunctiva and lids, conjunctival injection, etc.): These signs are affecting approximately a third of patients with GD. Lid swelling is observed in half of patients with GO, whereas edema of the conjunctiva is observed in 30% of cases.

Class III (Proptosis, exophthalmia > 22mm): Proptosis is observed in 63-74% of patients with Graves ophthalmopathy (Wiersinga et al 2010; Kozaki et al 2010).

Class IV (Extraocular eye muscle involvement: absent/limited motion/evident restriction/fixation; usually with diplopia): Several muscles (inferior rectus, medial rectus muscles and others) are affected in various degrees. MRI represents a powerful imaging method in such cases, high signal intensity on STIR images indicating the inflammation of these muscles.

Class V (Corneal involvement): Is primarily due to lagophthalmia and can be classified depending on severity- absent - stippling - ulceration - clouding – necrosis – perforation.

Class VI (Sight loss): Due to optic nerve involvement, this so-called dysthyroid optic neuropathy is fortunately affecting only 5% of GO patients (Garrity & Bahn 2006).

The recent release of The Consensus Statement of the European Group on Graves' Orbitopathy (EUGOGO) has added refined recommendations to the management of GO. Although the authors do not advocate a detailed clinical grading or scoring system, they do recommend an initial segregation of patients into "mild," "moderate to severe," or "sight-threatening" categories, as well as an attempt to determine disease activity.

#### *Severity classifications in Graves' ophthalmopathy -EUGOGO*

Sight-threatening GO: patients with dysthyroid optic neuropathy (DON) and/or corneal breakdown. This category warrants immediate intervention.

Moderate to severe GO: patients without sight-threatening GO whose eye disease has sufficient impact on daily life to justify the risks of immunosuppression (if active) or surgical intervention (if inactive). Patients with moderate to severe GO usually have any one or more of the following: lid retraction >2 mm, moderate or severe soft tissue involvement, exophthalmos >3 mm above normal for race and gender, inconstant or constant diplopia.

Mild GO: patients whose features of GO have only a minor impact on daily life insufficient to justify immunosuppressive or surgical treatment. They usually only have one or more of the following: minor lid retraction (<2 mm), mild soft tissue involvement, exophthalmos <3 mm above normal for race and gender, transient or no diplopia, corneal exposure responsive to lubricants (Bartalena et al 2008).

#### **Imaging features**

Although the diagnosis of GO is firstly based on clinical signs, the associated interpretation of clinical score to imaging studies is largely debated. Imaging diagnosis, established through various methods such as orbital ultrasound (US), computed

tomography (CT), magnetic resonance (MR) or octreotide scanning (OS), prove to have an extraordinary importance regarding early diagnosis, differential diagnosis and treatment course. Firstly, timely initiated medical therapy in early stages can lead to GO remission and prevent from permanent injuries, but it is useless in fibrotic stages (Tachibana et al 2010; Kirsch et al 2009; Ceccarelli et al 2005). Secondly, other conditions like: orbital cellulitis, granulomatous diseases, cavernous sinus thrombosis, retro-ocular tumors, orbital lymphoma, must be ruled out (Saraci & Treta 2011).

### **Ultrasonography (US)**

Diagnostic US for GO is performed using high frequencies (8 MHz) with both A-scan and B-scan techniques. The A-scan is sensitive in exposing tissue characteristics (such as thickening or thinning of muscles) which may be modified as a result of edema and inflammatory infiltration, and also in differentiating underlying pathologies, whereas B-scan is useful for topographic evaluation if individual recti muscles are enlarged (Kirsch et al 2009; Kahaly et al 2001).

GO diagnosis is based on the following points: no mass lesion, heterogeneous reflectivity of the tissues, variance of more than 0.5 mm between the same muscles in the two orbits with increased delineation of extraocular muscle margin, enlarged subarachnoid space of the optic nerve in case of dysthyroid optic neuropathy and thickened periorbital tissue.

The clinical studies show that the US thickness of extraocular muscle correlates with the degree of proptosis, and that exophthalmos moderately correlates with muscle thickness sum (Kirsch et al 2009; Imbrasienė et al 2010).

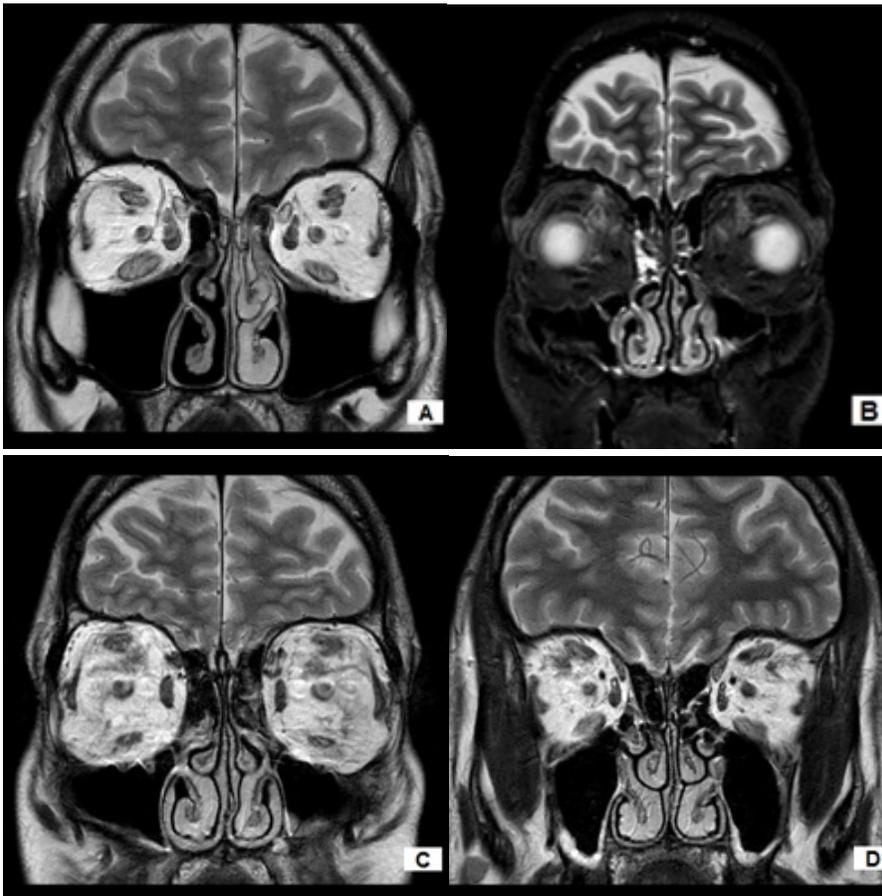
The advantages of US are that the method is inexpensive, regards a short investigation time (15 min) and is out of risk of ionizing radiation. Additionally, the anterior and midorbital therapeutic response can be monitored. The disadvantages are the high interobserver variability and the poor anatomic information obtained on the bony orbital walls, compared with the information provided by MRI or CT-scan (Allanet al 2012; Kahaly et al 2001).

### **Magnetic resonance imaging (MRI)**

Magnetic resonance imaging provides all the clues of GO of both ultrasonography and CT-scan and, additionally, is capable to detect muscle edema and extraocular muscle enlargement due to its capacity to describe tissues and also is more sensitive and specific than the ultrasonography previously presented. According to this, recently, Vlainich et al. compared the two imaging methods (MRI and US) in a small cohort, reporting the superiority of MRI, but

also proposing the usage of both in order to improve the evaluation of thyroid-associated ophthalmopathy (Rabinowitz & Carrasco 2012; VlainichI et al 2011).

MRI uses the two main relaxation times T1 and T2 to differentiate tissue types depending on their proton density and, furthermore, a certain weighting in T1 or T2 can be achieved by applying special prepulses to distinguish water and fat. A basic rule for MRI is that T1 weighted (T1w) images are best for anatomic structure, while T2w sequences give more information about the different tissue composition. T1w images give an overview for proptosis and involvement of the different recti muscles through the detection of an intense signal enhancement of the extraocular muscles or the eyelid, which can be found in the inflammatory stage. Regarding the second one, in GO, strong T2-weighted and fat suppressed images, the so-called TIRM (Turbo-Inversion Recovery-Magnitude) sequences, shown to be effective in detecting not only edema, and therefore to define inflammation in extraocular muscles, but also helps to exclude differential diagnosis and follow the therapeutic effect (Kirsch et al 2009; Kahaly et al 2001).





**Legend**

A. MRI Coronal T2 weighted image, 57 years old male patient shows increased diameters of the inferior rectus muscles of both eyes ( 7,4 mm at the right eye and 5,8mm at the left eye)

B. MRI coronal STIR weighted image at 46 years old male patient shows edem of the periorbital fat at both eyes

C. MRI T2 weighted image shows heterogenous signal of the periorbital fat at both eyes

D. MRI T2 weighted image of the orbits shows increased diameters of the inferior rectus muscles (5.8 mm) and superior rectus muscles (5.4 mm ) at both eyes

E. Transversal T2 weighted image of the orbits shows protrusion of the eyeballs, the posterior margin of the eyes being 2mm posterior of the interzygomatic line ( normally 10 mm)

A large number of studies come to support and promote the important role of MRI in GO management, both in the selection of proper therapy as well as for the prediction and monitoring of treatment response.

Tachibana et al. found a significant positive correlation between CAS and maxT2RT and also the same correlation between CAS and mean T2RT. 20 of 35 patients, whose CAS was negative and maxT2RT was positive, showed significant improvement after treatment, except for ophthalmic parameters. 15 of 35 patients, positive for both CAS and maxT2RT, also showed significant improvement after treatment. These results indicated that CAS alone could not detect active GO sufficiently, and that orbital MR imaging could predict the response to iv GC more accurately than CAS alone (Tachibana et al 2010). Also, Sillaire et al. sustain that T2 weighted centro-muscular signal intensity analysis helps for the therapeutic decision in Graves' ophthalmopathy (Sillaire et al 2003).

Tortora et al. reported in their clinical trial the increase of signal intensity values on STIR sequences in the inflammatory edematous phase of GO and confirmed the correlation between signal intensities on this sequence and CAS, showing an increase in signal intensity, proportional to the CAS value. Also, they demonstrated a direct proportion between STIR values and enhanced-T1 images, i.e. the increased enhancement during the active phase, as a result of vascular congestion, caused by edema and interstitial inflammatory infiltration. Moreover, they found that enhanced T1 signal intensities are the most reliable MR signals to assign a subject to the group with  $CAS < 3$  or  $CAS > 3$  at the cut-off value of 529. Furthermore, if the signal intensity ratio between the signal intensities of the inferior rectus muscle and the ipsilateral temporalis muscle is linearly combined with the STIR signal intensities of the inferior rectus muscle and the unenhanced-T1 signal intensities of the same muscle, it would most likely predict the exact CAS value (Tortora et al 2013).

With reference to the immunosuppressive therapy, Hiromatsu et al. recommends MRI as an indispensable tool for decision-making regarding this therapeutic strategy as the measurement of T2 relaxation time or signal intensity ratio of the enlarged muscles in T2-weighted fat suppression images or STIR images provide a precise quantitative evaluation of disease activity and may predict the outcome for GO (Hiromatsu et al 2012).

To conclude, the primary advantage of MRI is the high quality of orbital anatomic detail imaging and the sensitiveness for demonstrating interstitial edema within recti eye muscles and edema in orbital fat, delineating in this way the stage of the disease and the course of treatment. It is also free of ionising radiation and has a high negative predictive value. The disadvantages are represented by the high cost, the long investigation time and low sensitivity in bony structures evaluation (Kirsch et al 2009).

### **Computed tomography (CT)**

Computer tomography can distinguish normal from abnormal structures of different tissue density on the basis of differential X-ray absorption. Orbital fat and water have low densities, fat absorbing X-rays to a lesser degree than water, and therefore appear black on CT images in contrast with higher-density structures like extraocular muscles, optic nerve and bony structures. As a result, tissue with low absorption values appear hypodense, whereas those with high absorption appear hyperdense (Rabinowitz & Carrasco 2012).

Over time, a large number of studies have shown that CT-scan parameters based on the detection of orbital apical crowding by enlarged extraocular muscles are very useful in diagnosing dysthyroid optic neuropathy. This theory is strongly

supported by Gonçalves et al. in a recent study on ninety-three patients with GO, in which orbital volumetric crowding index demonstrated an effective predictor of dysthyroid optic neuropathy (Gonçalves et al Aug 2012). In another study, the same author suggests, using multidetector CT, that orbital crowding index based on area measurement is a more reliable and predictive tool than subjective grading of orbital crowding or intracranial fat prolapse (Gonçalves et al March 2012). Other CT features have been tested as indicators of dysthyroid optic neuropathy, including lacrimal gland displacement, exophthalmos, superior optic vein dilatation, and single muscle measurements, yielding conflicting and mostly discouraging results (Allan et al 2012).

The advantages of CT-scan are the precise imaging of orbital apex and bony structures, the accurate determination of area/volume of orbital tissue and also the short investigation time and its moderate cost. The main disadvantage is that is less helpful for the evaluation of the disease activity, but also the radiation exposure (Kirsch et al 2009; Kahaly 2001).

### **Octreotide scintigraphy (OS)**

The presence of the expression of somatostatine receptors by the lymphocytes found in the affected tissue only during the active phase of GO can be studied by means of objective tests which utilise the radiation emitted by somatostatine analogous drugs such as the octreotide, together with radioactive molecules. According to this, SPECT with somatostatine analogs with radioactive markers, a hardly invasive and simple image test, has been useful to indicate medical treatment and follow therapy response to patients affected by GO because it helps to differentiate the active phase from non-active phases of the disease (Aguirre-Balsalobre et al 2007).

### **Treatment options**

There is no gold standard for the classification of the severity or activity of GO, which has led to difficulty comparing treatments for GO due to the wide variety of models used in clinical studies.

The therapeutic management of GO is focused on three main aspects: smoking cessation, restoring and maintaining euthyroidism, and specific treatment of eye changes.

A main aspect to take into account within the initial management of GO is whether different treatments for thyrotoxicosis can influence the course of the eye disease. Most researchers have found that subtotal or total thyroidectomy and thionamide drug therapy do not influence ophthalmopathy unless they lead to

the development of hypothyroidism. However, some experienced investigators have found that total thyroidectomy with thyroid ablation of any remnant favors a better long-term outcome for this disorder. Otherwise, controlled studies suggest that radioiodine treatment can lead to a slight but significant worsening of orbitopathy and it may be best to avoid this treatment option in patients with severe GO (Melmed et al 2011). This risk may be mitigated with a short course (3 months) of oral glucocorticoids, along with avoidance of post-operative hypothyroidism (Griepentrog & Garrity 2009).

Symptomatic treatment, useful mainly in the mild form, includes protective local measures such as wearing dark glasses (for patients who experience photophobia or sensitivity to cold air), instillation of lubricants such as 1% methylcellulose (for corneal exposure), and prisms (for diplopia) (Melmed et al 2011).

## **Medical treatment**

### ***Glucocorticoids***

For a long time corticosteroids have been a mainstay in the management of GO, used for their immunosuppressive and antiinflammatory actions in patients with moderate to severe Graves' orbitopathy, with response rates up to 80%.

Either oral and intravenous administration have shown effectiveness in the GO treatment, the only debate being on the proper dosage that yields satisfactory therapeutic effect without adverse events. Recently, Bartalena et al. compared the potency on GO course of three cumulative doses of iv methylprednisolone (2.25, 5 and 7.5 g in the following pattern: 250 mg, 540 mg and 830 mg respectively, was maintained for the first six infusions and then halved for the remaining six infusions) administered during 12 weeks. The 7.5 g dose provided short-term advantages over lower doses, but this benefit was transient and associated with slightly greater toxicity, suggesting therefore that a high-dose regimen should be reserved to severe cases of GO (Bartalena et al 2012). Regarding the optimal route of administration of GCs, several studies revealed greater benefits brought by the intravenous therapy. Kahaly et al. concluded in a single-blind, randomized study of 70 patients, that iv glucocorticoids were more efficient and better tolerated than oral steroids in patients with active and severe GO. The patients received either once a week iv methylprednisolone (0.5 g, then 0.25 g- 6 weeks each) or oral prednisolone (starting with 0.1 g/day, then tapering the dose by 0.01 g/week) reporting a treatment response rate (77 vs 51%) favoring iv GCs (Kahaly et al 2005). Marcocci et al. reported in a single-blind, randomized study (including eighty-

two patients) using high-dose (9–12 g) iv glucocorticoid and oral glucocorticoid (associated with orbital radiotherapy) that iv administration is more effective in reducing CAS score and seems to be better tolerated than the oral route but also associate a lower rate of side effects (Marcocci et al 2001). Also, iv corticotherapy was compared to surgical decompression in a small randomized controlled trial in patients with active GO and optic neuropathy. Surgery did not result in a better outcome regarding improvement of visual acuity (this group eventually needed additional iv corticosteroids therapy in 83% of cases, whereas 56% of patients in the iv corticosteroids group needed surgery or orbital radiotherapy) concluding that immediate surgery does not result in a better outcome and therefore methylprednisolone pulse therapy could be the first-choice treatment (Wakelkamp et al 2005).

Dexamethasone pulse therapy can be considered as an alternative to pulse methylprednisolone therapy according to a prospective randomized control trial conducted on 21 patients having active moderate to severe GO. The study showed that pulse dexamethasone therapy is a cheaper and equally effective therapy for Graves's ophthalmopathy and also fulminant hepatic failure (associated with high dose of methylprednisolone) was not seen with dexamethasone therapy (Philip et al 2013).

In spite of the benefits of GC therapy, before starting pulse therapy, patients should be screened for recent hepatitis, liver dysfunction (5-fold increased liver enzymes), cardiovascular morbidity, severe hypertension, inadequately managed diabetes, and glaucoma. The cumulative dose should not exceed 8 g, and, with the exception of sight-threatening GO, the single dose should preferably not be administered on consecutive days. Monthly monitoring during subsequent treatment is warranted (Zang et al 2011).

### ***Somatostatin analogs***

Somatostatin analogs have immunomodulatory effects that make them, in theory, an attractive option for the treatment of this condition. A number of studies have suggested benefits from somatostatin analogs (combined results at the end of follow-up showing a minor but statistically significant lower CAS for patients treated with somatostatin analogs over placebo) (Stan et al 2006; Pilarska & Kulig 2004) but in contrast with this, other trials showed limited outcomes from long-acting release (LAR) octreotide preparations (Chang & Liao 2006). Further studies are required.

### ***Rituximab (RTX)***

Rituximab was recently proposed as a novel therapy option of GO. Treatment with RTX, a monoclonal chimeric murine/human antibody that binds the CD20

antigen and causes B cell depletion, has provided evidence on the role of B cells in systemic and organ-specific autoimmunity. In 2007 a significant improvement of clinically active GO and also of proptosis after RTX when compared to intravenous (i.v.) methylprednisolone was first reported in a clinical study (Vannucchi et al 2010). Since then, a couple of studies confirmed the advantages of this treatment, but also delineated the adverse effects, The most recent randomized controlled study (including thirty-two patients with active moderate to severe GO) confirms preliminary reports on a better therapeutic outcome of RTX (administrated in a 1000 mg dose twice at a 2 week interval or a single 500 mg dose)when compared with iv methylprednisolone, even after a lower RTX dose (a single 500 mg RTX dose). The better eye motility outcome, visual functioning of the quality of life assessment, and the reduced number of surgical procedures in patients after RTX seem to suggest a disease-modifying effect of the drug (Salvi et al 2015).

### ***Selenium***

Recently, a randomized, double-blind, placebo-controlled trial on 159 patients with mild GO analysed the therapeutic potential of selenium (in the form of selenite) and pentoxifylline versus placebo. After 6 months of administration, selenium improved the quality of life, reduced ocular involvement, and slowed progression of the disease, benefits confirmed at 12 months exploratory evaluations. This findings encourage further studies and grant a potential adjuvant therapeutic role to this powerful antioxidant (Maccocci et al 2011).

### **Orbital radiotherapy**

Retrobulbar radiotherapy may be a good alternative to treat moderate to severe GO since intraorbital lymphocytes are particularly sensitive to radiotherapy. The value of external radiation to the retroorbits has been established in some, but not all, clinical trials. This treatment option is not a steroid replacement therapy, in fact it seems to work best in combination, especially early in the onset of the disease. Although periorbital edema may be helped, exophthalmia and ophthalmoparesis are usually minimally affected (Melmed et al 2011). Regarding the radiation dose, clinical trials did not show any significant difference in efficacy between low- and high-dose radiation (Stiebel-Kalish et al 2009). Side effects include the development of retinal angiogenesis and the presence of diabetes mellitus and hypertension being a clear contraindication to this approach.

### **Surgical treatment**

If glucocorticoid therapy or external radiation (or both) does not halt progression of the disease, or if loss of vision is threatened by ulceration or infection of the cornea or by changes in the retina or optic nerve, orbital decompression can be performed by a variety of techniques. During an orbital decompression, part of the bony walls (the lateral wall or the roof of the orbit, or the lateral wall of the ethmoid sinus and the roof of the maxillary sinus) is removed in order to provide more space for the extraocular muscles and orbital fat. This intervention often causes or worsens diplopia and it should be delayed until the disease becomes less active (Melmed et al 2011).

The management of severe orbitopathy should never be undertaken by the endocrinologist or by the ophthalmologist acting alone. Close observation of the medical therapy and the progress of the disease is necessary to determine whether and when surgery is appropriate.

### **Conclusion**

The therapeutic management of GO is focused on three main aspects: smoking cessation, restoring and maintaining euthyroidism, and specific treatment of eye changes. Whereas the mild form of GO requires only protective local measures, moderate and severe forms request a complex approach including medical treatment, radiotherapy or orbital decompression.

Taking into account all these aspects, the management of GO should never be undertaken by the endocrinologist or by the ophthalmologist acting alone and for a proper approach of the disease, it should be a strong collaboration between the endocrinologist, the ophthalmologist and the radiologist.

Because health insurances cover less medical services, health tourism in Romania has become attractive for patients from western Europe, due to lower costs of treatment and the professionalism of the medical staff.

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## AMERICAN MEDICAL TOURISM IN INDIA: A RETROSPECTIVE HEALTH POLICY ANALYSIS

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### **Abstract:**

*Background:* Over the last two decades, the lack of coverage by health insurance and inaccessible health services have led patients from developed countries, in particular the US, to travel to developing countries with the purpose of seeking medical healthcare. The Indian government believed that this medical tourism would benefit the country and as a result a policy regarding the promotion of medical tourism in India was introduced in 2002. The aim of this manuscript was to conduct a retrospective health policy analysis of the policy, while incorporating American tourists.

*Methods:* The policy analysis was based on a literature review. The policy analysis triangle and the Hall model were applied in the analysis.

*Results:* The policy clearly stated that medical tourism in India should be promoted. The relevant actors in the policy process were the Indian Ministry of Health & Family Welfare, the Indian Government, the Indian Ministry of Tourism, the private health sector and the health professionals in India. American actors were American medical patients, American insurance companies and employers. Contextual factors, that may have affected the policy process, were the situation of the population health in India, tourism and the indigenous traditional healthcare system of India, and finally, the growth of international trade in health services. The policy formulation lacked transparency and the policy was implemented through modernization of infrastructure facilities, the introduction of a new medical visa and tax concessions by the Indian Government.

*Conclusions:* The National Health Policy 2002 regarding the promotion of medical tourism was influenced by several actors and factors. It was clear that medical tourism had numerous advantages. However, disadvantages do exist and should be considered.

**Keywords:** Medical tourism, healthcare, India, American tourists.

**JEL Classification:** Q26, Q20, Q50, Q34, Q56, Q57, F60, F64, O13

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## **1. Introduction**

### **1.1. Background**

Medical tourism refers to travelling abroad for medical care (Centres for Disease Control & Prevention 2015). Traditionally, patients from developing countries travelled to medical centres in more developed countries in order to receive health services, that were not available in their own countries. These patients were most often wealthy and sought services that were technologically advanced. However, over the last two decades, a new form of medical tourism has emerged, in which patients from developed and high income countries travel to developing countries with the purpose of seeking medical healthcare. Some of the reasons for this is that these patients want services that are not covered by their health insurance, that are not available due to legal restrictions or that have long waiting times in their home countries (Piazolo and Zanca 2011). In 2014, it was estimated that the number of medical tourists worldwide was 11 million. Of these 11 million, 1.2 million were American medical tourists. Since the global economic downturn in 1999, the medical travel industry of India has been growing at an annual rate of 30 percent. With approximately 1.3 million patients visiting the country for treatment each year, India is ranked as the second largest hub in the medical tourism industry (Paliwal 2015). In particular, the increasing number of Americans seeking treatment in India has affected this growth (Healthy Travel Media 2011). Numbers from the Indian Ministry of Tourism show that in the years of 2009 and 2012, American patients accounted for the largest number of medical tourists from the Western world including North, Central and South America as well as Europe and Australia (Ministry of Tourism 2010, Federation of Indian Chambers of Commerce and Industry FICCI 2014). In 2012, the total number of registered foreign medical tourists in India was around 200,000 of which the American patients represented 2 percent (FICCI 2014). Based on these numbers which showed the significance of Americans patients in the country, they were included in the analysis.

This manuscript goes back to the year of 2002 in which India, as the first country in the world, decided to introduce the promotion of medical tourism in their national health policy. The manuscript investigated how and why the policy was formulated and which actors and factors influenced the policy making process.

### **1.2. Purpose of the manuscript**

The purpose of this manuscript was to conduct a retrospective policy analysis of the policy regarding the promotion of medical tourism in India from 2002 and to incorporate American medical tourists in the analysis.

The analysis consisted of four elements. Firstly, the content of the policy was analysed. Secondly, the relevant actors were identified as well as their actions that

affected the health policy. Thirdly, the context of the time was considered. Finally, the process of the policy was analysed.

### **1.3. Scope of the manuscript**

With Americans accounting for a significant part of medical tourists in India, they were included in the policy analysis.

There were numerous relevant actors concerned with the medical tourism promotion in India. The most important were the following:

1) The Indian Ministry of Health & Family Welfare (MOHFW), 2) the Indian Government, 3) the Indian Ministry of Tourism, 4) private health sector in India, 5) Indian health professionals, 6) American insurance companies and employers and 7) American patients.

## **2. Method**

This manuscript was based on a literature review. The literature consisted primarily of articles, policy-related documents and websites. The literature search was conducted from beginning of October 2015 until the middle of December 2015.

The sources were found using the search engine Google Scholar and the database US National Library of Medicine Institutes of Health as well as a number of governmental and organisational websites. These included documents from the Ministry of Health & Family Welfare and Ministry of Tourism.

The organisational websites included the Federation of Indian Chambers of Commerce and Industry, the World Health Organisation (WHO) and the World Trade Organisation (WTO).

The applied search terms were related to the topic of medical tourism in India, American medical tourists and the policy making process. Examples of these terms were:

“medical tourism”, “American medical tourists”, “National Health Policy 2002, India” and “promoting medical tourism, India”.

The inclusion criteria in this review were:

- The language of the source had to be English
- The full source had to be accessible
- Focus on medical tourism in India, American medical tourists and the policy making process and its effects

For every source of data there was an estimation of the validity and usefulness of the content.

There is a presentation of the applied literature in appendix 1.

### 3. Theory

#### 3.1. The health policy triangle

In order to gain insight of the content, relevant actors, the context of the time and the process of the policy regarding the promotion of medical tourism in India, the policy analysis triangle was applied.

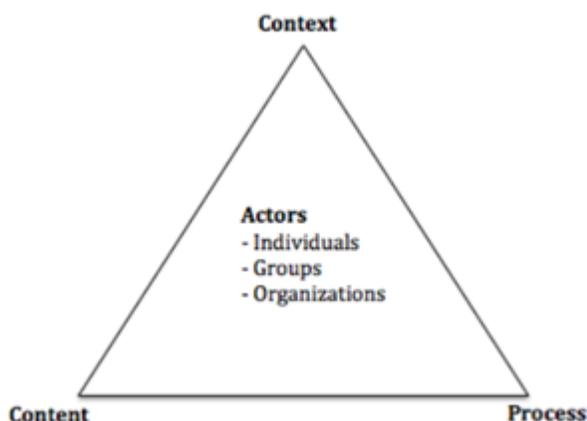


Figure 1. Policy Analysis Triangle (Buse et al. 2005, p. 8)

The health policy triangle is a systematic framework used for exploring and analysing a specific health policy. The focus is on the relationship between the content, actors, context and the process of the health policy in question. The triangle is a simplification of the complex inter-relationships between the four factors involved and although the factors are to be analysed separately, they are dependent on each other (Buse et al. 2005).

#### **Content**

The content of the health policy triangle refers to the specific policy and the specific objectives of the policy in question (Buse et al. 2005).3.1. The decline of the fishing

#### **Actors**

Actors are in the centre of the health policy triangle. The actors are individuals, groups and organisations that affect or influence the policy (Buse et al. 2005).

#### **Context**

The context is the systematic factors that might affect the policy. These are divided into four categories:

- Situational factors are impermanent conditions, which may have had an impact on the given policy.
- Structural factors are relatively unchanging elements of society.
- Cultural factors are factors such as religion, position of hierarchy, women's rights and position of ethnic minorities.
- International or exogenous factors refer to factors that lead to greater interdependence and which cannot be controlled by a single state (Buse et al. 2005).

### **Process**

The process of the health policy triangle refers to the different stages of which the policy is initiated, developed, negotiated, communicated, implemented and evaluated. To analyse the process, the policy has to be broken down into steps in order to get a systematic overview of the process. These steps are:

- Problem identification and issue recognition, which refer to the agenda setting of the policy.
- Policy formulation concerning who is involved in formulating the policy.
- Policy implementation, which is an important part of the process, given that it might affect the outcome of the policy.
- Policy evaluation, which concerns evaluating the policy after it has been implemented (Buse et al. 2005).

### **3.2. Hall Model**

The Hall model was used to determine the issues that get on the government agenda. The model contained three factors:

- Legitimacy: The types of issues the government should or has the obligation to be concerned about.
- Feasibility: The likelihood and degree of difficulty regarding the implementing the policy in question.
- Support: The support of the public, particularly in relation to the issue in question.

All factors had to be high for an issue to be considered by the politicians (Hall et al. 1975).

## **4. Results**

### **4.1. Content**

Among other things, the National Health Policy from 2002 contained the policy regarding the provision of medical facilities to users from overseas. The policy is cited below:

”To capitalize on the comparative cost advantage enjoyed by domestic health facilities in the secondary and tertiary sectors, NHP-2002 strongly encourages the providing of such health services on a payment basis to service seekers from overseas. The providers of such services to patients from overseas will be encouraged by extending to their earnings in foreign exchange, all fiscal incentives, including the status of “deemed exports”, which are available to other exporters of goods and services (Ministry of Health & Family Welfare MOHFW 2015a).”

The policy strongly encouraged the promotion of medical tourism as a means to increase the revenue of the secondary and tertiary health sectors.

#### **4.2. Actors**

##### **The Indian Ministry of Health & Family Welfare**

Given the essential role in introducing the policy, it is expected that the Indian Ministry of Health & Family Welfare had a strong interest in the promotion of medical tourism. The MOHFW believed that by promoting India as a healthcare destination, the healthcare expertise and infrastructure, which was available in the country, would be utilised to gain additional revenue (MOHFW 2015b). This additional revenue would be capable of contributing to the improvement of the healthcare system (MOHFW 2015a). In order to accommodate the needs of consumers and to develop the health and medical tourism industry, the Ministry of Health & Family Welfare established a National Accreditation Board for hospitals (Shanmugam 2013, National Accreditation Board for Hospitals & Healthcare Providers 2015).

##### **The Indian Government**

Most likely, the Indian Government had incentives to support and promote the medical tourism for the main reason that the sector had the potential to increase the revenue of the country and thereby improve the economy.

In order to promote the medical tourism, the Indian Government provided tax concessions, meaning that private hospitals treating foreign patients received benefits from the government. These benefits consisted of lower import duties and an increased rate of depreciation for life saving equipment. In addition, the medical tourism sector received a given number of medical professionals, who were educated in public institutions (Sengupta and Nundy 2005).

##### **The Indian Ministry of Tourism**

The medical tourism represented a potential supplementary source of income to India’s national budget. The reason for this was that medical tourists were likely to purchase a package deal when travelling to India. In general, the package deal included flights, hotels, treatment and often a post-operative vacation (Gupta

2008). Given these benefits for the tourism in India, the Ministry made efforts to promote the medical tourism. This was mainly carried out in the form of advertising in newspapers, websites, media channels and other methods. Furthermore, the medical visa was introduced in India. In order to facilitate their contact with the health service, this visa was exclusively available for foreign tourists seeking medical treatment in India (Heide et al. 2002).

### **Private health sector**

The private sector in India was a dominant actor in the promotion of medical tourism, as it accounted for the majority of outpatient visits in the country. Besides the growth in usage of advanced technology, the private sector favoured medical tourism for the reason that Indian health professionals were likely to stay in India in order to work in the medical tourism sector. It was even possible that the sector would attract foreign health professionals. In other words, medical tourism would be capable of contributing to a reverse brain drain (Chinai and Goswami 2007, Qadeer and Reddy 2013). The private sector contributed to the promotion of medical tourism by increasing international business connections and collaborations. Additionally, several specialty corporate hospitals were built in collaboration between Indian and foreign companies (Hazarika 2010).

### **Health professionals**

The perception of medical tourism among physicians was diverse. According to a study conducted by Qadeer and Reddy (2013) on 91 Indian physicians, the large majority (90.4 percent) of physicians working at private hospitals were in agreement with the Indian Government and recognised the potential of medical tourism. These physicians focused on the benefits of the medical tourism and not on the potential downsides, which were most likely to affect the public sector. The perceptions of the private physicians were that the public sector was the responsibility of the State and therefore not a concern for them. However, a minority (9.6 percent) of private physicians were critical towards the medical tourism and its promotion because of the potential negative effects on the Indian population (Qadeer and Reddy 2013). Among these negative effects were the overemphasis on tertiary care, which could lead to a shortage of skilled workforce in the primary care (Hazarika, 2010). Furthermore, the potential of earning additional revenue through medical tourism could conceivably become an important argument for private hospitals to demand more subsidies from the government. In the long term, this situation could undermine services for the low income population (Gupta 2008). There was also a difference in the perception of physicians working in the public sector. The majority (74.4 percent) were positive about the medical tourism whereas 20.5 percent were critical of its promotion. Despite the majority of public sector physicians being

positive, there were 38.4 percent who anticipated that only the private sector would benefit from it (Qadeer and Reddy 2013).

### **American insurance companies and employers**

As in several other countries at the time, the healthcare costs in the US were increasing. After the worldwide recession in 1999, insurance companies and employers had been evaluating how to decrease the rising healthcare costs (Piazolo and Zanca 2011). Medical tourism became increasingly popular in the US given that insurers and employers sought to reduce the costs of treatment through international outsourcing of medical and surgical care. In particular, American employers considered medical tourism as being able to reduce the burden of supporting medical expenses for employees (Bies and Zacharia 2007).

### **American patients**

The American patients were one of the actors who had the most benefit to gain from medical tourism. It was estimated that the price of surgical services in Asia, including India, were 10-20 percent of equivalent services in the US (Forgione and Smith 2007). The demand for low cost healthcare services was compelling patients to seek treatment in the global and competitive market. It was estimated that approximately 10,000 overseas patients sought healthcare services in India in 2000 (The Economic Times 2006). According to the Confederation of Indian Industry, this number increased to 150,000 in 2005 (Chinai and Goswami 2007). In 2007, the number of overseas patients treated in India was 450,000, of which over 100,000 came from the United States and the United Kingdom (Gluck 2008). Numbers from FICCI show that the number of foreign tourist arrivals in India had increased from 5,160,000 in 2009 to 6,570,000 in 2012. From these numbers, the percentages of medical tourists were 2.2 percent in 2009 and 2.6 percent in 2012 (FICCI 2014). Moreover, the number of foreign tourists travelling to India for medical treatment were approximately 113,520 in 2009 and 179,829 in 2012. The American patients accounted for 2 percent of the total number of foreign medical tourists in 2012, making the US responsible for the highest number of medical tourists from the Western world. The US was followed by the UK, which accounted for 1.4 percent of the total number of medical tourists in India in 2012 (FICCI 2014).

In general, there were two types of American medical tourists who sought medical services in India. The first group consisted of middle class adults requiring elective surgical care. Most often, these patients had inadequate coverage or no health insurance. The other group pursuing medical tourism were people seeking cosmetic surgery, dental reconstruction, fertility treatment, gender reassignment procedures and other treatments not covered by health insurance (Horowitz et al.

2007). Apart from the low cost of medical services, the main contributing factors were fast obtainment of treatment, treatments not available or legal in the USA and the wish to combine traditional tourism with medical procedures (Turner 2007).

### **4.3. Context**

#### **Situational factors**

Prior to year 2002, there had been an increase in disparities in life expectancy, new and emerging diseases, access to healthcare and protection from financial risks in India (Peters et al. 2003). Diseases such as tuberculosis, malaria, blindness and the newly emerging HIV/AIDS were contributing to the disease burden in India. The National Health Policy 2002, hereunder the policy regarding the promotion of medical tourism, was initiated to deal with some of these issues. The increased revenue from the medical tourism would be capable of contributing to the improvement of the healthcare system (MOHFW 2015a).

#### **Structural factors**

Spending on health had not been a priority for previous governments in India prior to 2002. This could have been one of the reasons for the conditions of population health at the time.

There was a need for an organisational restructuring of the national public health initiatives, which the revenue from the medical tourism would facilitate in funding. The National Health Policy 2002, furthermore, addressed the public health issues by enabling more equitable access to the health facilities (MOHFW 2015a).

#### **Cultural factors**

There were factors that facilitated India in being attractive as a destination for medical tourism. For instance, India has an old civilisation of more than thousand years and is known for its cultural and religious diversities with diverse geographical landmarks. In addition, apart from modern medicine, India has a popular indigenous traditional healthcare system which include Ayurveda, Yoga, Meditation, Siddha, Unani and Naturopathy (Mochi et al. 2013). This combination of services offered are unique and therefore serve as a competitive advantage of India in medical tourism (Heide et al. 2002).

#### **International or exogenous factors**

In the years before 2000, the international trade in health services had been growing. In particular, there had been notable increases in foreign investment by hospital operators and health insurance companies in search of new markets. Additionally, more and more countries were seeking to attract health consumers from other countries. Individuals crossing borders to purchase health services were

becoming more frequent. This growth was accelerated by inadequate national public health services, the rising cost of health services and the availability of cheaper alternatives in developing economies (WTO and WHO 2002).

Especially the overburdened healthcare infrastructure and high costs in the West were main causes for the increase in medical tourism. The healthcare infrastructure in Europe and the United States were, and still are, under severe pressure. In Britain, the National Health Service faced long waiting lists of patients for surgery. The US had 50 million uninsured citizens while the insured had to pay significant sums for healthcare services. Furthermore, the harsh visa regulations imposed by the United States and European countries after the 9/11 incidence had led to a growing number of foreign patients from the Middle East to visit Asian countries for treatment. These factors created momentum for hospitals in various Asian countries including India to promote medical tourism (Heide et al. 2002).

#### **4.4. Process**

##### **Problem identification and issue recognition**

**Legitimacy:** In 2002, a study on medical tourism was conducted by the Confederation of Indian Industry and McKinsey & Company. According to the study, the sector had great potential in India (Chinai and Goswami 2007). The Indian Government believed that medical tourism would improve the finances of the country by increasing the gross domestic product (GDP), business, employment, professional and technological advancement, competition, and improving the infrastructure (Qadeer and Reddy 2013). Given that the Indian Government was obligated to serve the Indian population, it can be assumed that the issue had a high legitimacy because of the potential benefits for the population.

**Feasibility:** Before 2002, India had already provided medical healthcare for tourists. Consequently, knowledge on how to promote medical tourism was already available. Together with the increasing number of individuals seeking low cost medical services and the increase in foreign investment by hospital operators and health insurance companies in search of new markets, the policy seemed fairly simple to implement. In this sense the feasibility was considered to be high.

**Support:** When introducing the policy, the idea was that the additional revenue from medical tourism would benefit the healthcare in India (MOHFW 2015b). There may have been different opinions about the policy and varying levels of support from the public, however, based on the potential benefits, the support was considered to be high.

Arguably, the promotion of medical tourism scored high in all three criteria and this may explain why the government placed it on the agenda.

**Policy formulation and implementation**

The process of formulating the health policy including the individuals involved, how the policy was agreed upon and communicated was indistinct. There seemed to have been lack of transparency in the governmental decision making.

The approach used to implement this policy is considered to be a top-down approach, as the policy was explicitly introduced by politicians and then set into practice by the hospitals, tourism sector and so fourth. Once the policy was introduced, efforts were made to modernize and expand airports in the country and to improve road connectivity and other infrastructure facilities. The government of India promoted 45 private hospitals as Centres of Excellence in its tourism brochures. Moreover, the government introduced a new M or medical visa for medical tourists and their companions. The Ministry of Health & Family Welfare established a National Accreditation Board for hospitals. Furthermore, the government declared medical tourism as service exports, which made it possible for the medical tourism sector to benefit from tax concessions (Shanmugam 2013). Finally, the Indian Government sought to promote their comparative advantage as a medical tourism destination at large international trade fairs, via advertising within the overseas press and official support for activities as part of their economic development and tourism policy (Mudur 2004).

**Policy evaluation**

The policy regarding promotion of medical tourism in India was introduced in 2002. Whether or not, the Indian Government has attempted to evaluate this policy is unknown. No formal evaluation of the policy has been accessible.

However, there has been a large increase in the number of medical tourists in India. From an estimate of 10,000 medical tourists in 2000 prior to the implementation of the policy to 1.3 million patients visiting the country for treatment in 2015 (The Economic Times 2006, Paliwal 2015). These numbers suggest that the promotion of the medical tourism has been successful.

In addition, changes have been completed, ranging from the basic changes such as improved roads, to the more complex changes, such as building new airports. Despite the changes, the infrastructure system and general hygiene conditions in India are still lagging far behind the Western standards. In addition, foreign patients are reported to have less trust in Indian hospitals, particularly due to the lack of uniform pricing policies and standards across hospitals (Wong et al. 2014).

The policy may also have had some negative influences on the Indian population. The public sector has a shortage of trained health personnel, medical specialists and a shortage in resources. Despite this, it is estimated that the large majority of human resources and advanced medical technology are in the private sector. It seems that the private sector is the prime employer of health personnel who are predominantly

trained in public health institutes. Finally, the increase in medical tourists has created a rise in the overall cost of healthcare in the country (Hazarika 2010).

## **5. Discussion**

### **5.1. Limitations**

Based on the results of the health policy analysis, there are few limitations which have to be mentioned.

First of all, the results of the retrospective policy analysis were largely affected by the choice of actors. After considering several potential stakeholders, the choice of actors was according to the opinion of the analyst concerning who had a significant influence on the policy in terms of the introduction of the policy and its implementation. Furthermore, the choice of actors in this manuscript was consistent with that of the Confederation of Indian Industry, Network for Preventive Environmental Management and other organisations (Heide et al. 2002). The choice of actors may have affected the results in the way that the results are most likely to differ if the actors were more powerful.

Secondly, information on the government's formulation process of the health policy has not been available. The lack of transparency within the policy making process made it difficult to assess if the policy was a result of a compromise between the political parties or whether one party or individual dominated the policy process. Also, the potential hidden agendas of politicians were not identifiable.

Finally, another limitation in the policy analysis was the fact that there has not been any organisation, that has tracked the actual number of Americans travelling to India as medical tourists before the year of 2008 (Gluck 2008). Moreover, the number of medical tourists in India are in the years prior to 2008 estimates.

### **5.2. Disadvantages of medical tourism**

As mentioned previously, medical tourism may have had numerous advantages both for India and the American medical tourists. However, several disadvantages do exist.

In general, evidence of clinical outcomes for medical tourist treatments is limited. Little is known about the relative clinical effectiveness and outcomes for particular treatments, institutions, clinicians and organisations. There is scarce evidence on long or short-term follow-up of patients returning to their home countries following treatments at the range of destinations. Moreover, patient follow-ups by providers are considered to be rare (Lunt et al. 2011).

Most of the countries that offer medical tourism have weak malpractice laws. As a result patients have little recourse to local courts or medical boards in case of medical errors. For instance, India does not have a culture of professional critique. In

case of malpractice by health professionals, it is more than likely that the case would be dismissed (Howze 2007).

Finally, despite the profit that it brings to the hospitals in the private sector, medical tourism might draw medical resources and personnel away from serving the local population. According to critiques, this has been the case in India. The medical tourism has led to inadequacy of funds at public hospitals, inefficiency of staff and trade unions without a strong sense of responsibility (Qadeer and Reddy 2013).

## **6. Conclusion**

As the first country in the world, India decided to introduce the promotion of medical tourism in their National Health Policy in 2002. The policy strongly encouraged the promotion of medical tourism as it was viewed upon as a potential means to enhance funding in order to improve public health initiatives in the country.

The majority of actors in the analysis were in favour of the policy and made efforts to promote the medical tourism. The Indian Ministry of Health & Family Welfare established a National Accreditation Board for hospitals which aimed at accommodating needs of the consumers and developing the health industry. The Indian Government provided tax concessions for private hospitals treating foreign patients and provided these hospitals with medical professionals. The Indian Ministry of Tourism used various methods to advertise the medical tourism. Furthermore, the medical visa was introduced. Efforts were made to increase international business connections and collaborations. Additionally, several specialty corporate hospitals were built in collaboration between Indian and foreign companies. American health insurers and employers were increasingly seeking to reduce the costs of treatment through international outsourcing of medical and surgical care to India. In addition, American patients sought medical treatment in India due to the low costs of treatment, the speed of obtaining treatment, treatments not available or legal in the USA and the desire to combine traditional tourism with medical procedures.

The perception of medical tourism among health professionals was diverse. The large majority of physicians working at private hospitals agreed with the policy, and were likely to seek jobs in the medical tourism sector. On the contrary, publicly employed professionals focused on the potential downsides of it, which most likely would affect the public sector.

The contextual factors, which may have influenced the health policy, were the worsening of the population health in India, the organisational restructuring of the national public health initiatives, tourism and the indigenous traditional healthcare system of India, and finally, the growth of

the international trade in health services.

It was assumed that the policy promoting medical tourism had high legitimacy, feasibility and support. The policy process was indistinct and the implementation

was made using a top-down approach. Attempts to formally evaluate the health policy remain unknown.

Despite the numerous advantages, medical tourism presents issues such as lack of patient follow-ups, weak malpractice laws and inequitable allocation of resources in the Indian healthcare system.

### **Competing interests**

The authors declare that they have no competing interests.

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Main results: Employer-encouraged medical tourism has a number of benefits.

Chinai, R., and Goswami, R. (2007). *Medical visas mark growth of Indian medical tourism*.

Main results: The Indian Government supported the rapid growth of the medical tourism sector and are therefore seeking ways for the population to benefit from it.

Federation of Indian Chambers of Commerce and Industry. (2014). *Medical value travel in India: FICCI Heal Conference*. New Delhi: KPMG International.

Main results: There has been an increase in the number of medical tourists in India from 2009 to 2012 and the American patients account for 2 percent of the total number of medical tourists in India in 2012.

Forgione, D. A., and Smith, P. C. (2007). *Medical tourism and its impact on the US healthcare system*. *Journal of Health Care Finance*, 34 (1), pp. 27-35.

Main results: The demand for low-cost healthcare has led to an increase in the number of American medical tourists, however, the US healthcare system has not fully understood the effects this will have on its economic structure and policies.

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Main results: Despite the fact that analyses of India's future recognise obstacles for future growth of the medical tourism industry, high costs in the US may lead more American patients to accept the uncertainties and receive treatment in India.

Gupta, A. S. (2008). *Medical tourism in India: winners and losers*. *Indian Journal of Medical Ethics*, 5 (1).

Main results: The corporate medical sector in India seems to benefit from medical tourism but neglects to increase public investment in health.

Hazarika, I. (2010). *Medical tourism: its potential impact on the health workforce and health systems in India*. Health Policy Plan, 25 (3), pp. 248-251.

Main results: India has the potential to become a global health destination, however, medical tourism needs to be utilised to improve access, delivery and quality of services in the public health system.

Heide, A. V., Kumra, S., Gustafson, J., Bergstorm, M., Kirshnan, N. R., Naidu, R., et al. (2002). *Indian Medical/Health Tourism Service Sector Network Report Sector Overview and SWOT Analysis*. Stockholm: SINET.

Main results: To improve the prospects for the medical tourism industry in India, hospitals should acquire international accreditation, integrate traditional and clinical treatments and cooperate with the sector of tourism.

Horowitz, M. D., Rosensweig, J. A., and Jones, C. A. (2007). *Medical Tourism: Globalization of the Healthcare Marketplace*. Medscape General Medicine, 9 (4), p. 33.

Main results: Medical tourism presents concerns, challenges as well as opportunities and it will have an increasing impact on the global healthcare landscape.

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Main results: Economic progress, accreditation and low-cost healthcare services had an impact on India emerging as a destination for medical tourism.

Mudur, G. (2004). *Hospitals in India woo foreign patients*. British Medical Journal (328).

Main results: There is potential for growth in the medical tourism sector, however, it is capable of creating a standard of quality which is unaffordable for the majority of Indian population.

Paliwal, K. (2015). *Medical Tourism: Opportunity and Challenges in India*. International Journal of Management and Social Sciences Research, 4 (10) pp. 25-29.

Main results: There are both opportunities and challenges for medical tourism in India.

Peters, D. H., Rao, K. S., and Fryatt, R. (2003). *Lumping and splitting: the health policy agenda in India*. HEALTH POLICY AND PLANNING, 18 (3), pp. 249–260.

Main results: The central government needs to focus on overcoming inequalities in health outcomes across India and, also, develop systems for quality assurance and regulation of the private sector.

Ministry of Health and Family Welfare. (2015a). *National Health Policy (2002)*.

Main results: This document provides the policies needed to improve the population health including the promotion of medical tourism.

Ministry of Health & Family Welfare. (2015b). *Ministry of Health & Family Welfare*.

Main results: This overview of the National Health Policy 2002 states that it focuses on the need for enhanced funding and organisational restructuring of the national public health initiatives in order to facilitate more equitable access to health facilities.

Piazolo, M., and Zanca, N. A. (2011). *Medical Tourism - A Case Study for the USA and India, Germany and Hungary*. Acta Polytechnica Hungarica, 8 (1), pp. 137-160.

Main results: This article provides evidence for support of a more multi-polar international system of trade in medical services.

Sengupta, A., and Nundy, S. (2005). *The private health sector in India*. British Medical Journal, 331 (7526), pp. 1157-1158.

Main results: The Indian Government has to prioritise to increase public expenditure on healthcare and improve the health of the Indian population rather than focusing on foreigners from affluent countries.

Shanmugam, K. R. (2013). *Medical Tourism in India: Progress, Opportunities and Challenges*. Chennai: MADRAS SCHOOL OF ECONOMICS.

Main results: This study estimates that the number of medical tourists in India is likely to reach 2.8 million and the market will be approximately US \$4 billion by 2015.

Qadeer, I., and Reddy, S. (2013). *Medical tourism in india: perceptions of physicians in tertiary care hospitals*. Philosophy, Ethics, and Humanities in Medicine, 8 (20).

Main results: The majority of Indian physicians in the private sector have a positive perception of medical tourism, whereas the majority of publicly employed physicians are critical.

Turner, L. (2007). *First World Health Care at Third World Prices: Globalization, Bioethics and Medical Tourism*. BioSocieties (2), pp. 303–325.

Main results: The number of individuals seeking affordable medical care in the global market of privatised healthcare delivery is likely to increase due to reductions in health benefits by states and employers.

World Trade Organization and World Health Organization. (2002). *WTO Agreements & Public Health*. Geneva: World Trade Organization & World Health Organization.

Main results: This report describes the actual and potential linkages between WTO agreements and health in order to enable trade and health officials to gain a greater understanding and monitor the effect of the linkages.

Wong, K. M., Velasamy, P., and Arshad, T. N. (2014). *Medical Tourism Destination SWOT Analysis: A Case Study of Malaysia, Thailand, Singapore and India*. EDP Sciences.

Main results: In order to ensure a successful medical tourism industry development, the priority of the medical tourism destinations must be to meet or exceed the expectations and requirements of the medical tourists.

## Romanian Medical Services for International Patients

Sabina Tănase, Sante Tour

### Abstract

*This paper has a descriptive aim and it presents Romanian medical services employed by international patients. The essay starts with an overview of the Romanian health system, looking at legislation and government and EU-funded development projects. Next, the main institutions providing health services in Romania are mentioned and the National Health Strategy 2014-2020 is briefly outlined. The text ends with a discussion about health services provided to international patients.*

**Keywords:** *medical tourism, medical services, health tourism, international patients, Romania*

### 1. The medical health system in Romania

The budget allocated to Romania for the public health system is 6.73 billion lei for 2015, down with 0.2 percentage points from 2014 when the budget was 7.97 billion. This year only 4% of GDP was spent on health, which ranks Romania among the last places among the Member States of the European Union on health costs.

The health system in Romania is formed by two systems: public health system, which is funded mainly from contributions to social health insurance, and private health system where patients pay for the health services they receive. Social health insurance system in Romania ensures public access to a basic package of health services: medical consultations, prescription recipes or basic hospital services. The National Health Insurance House is a public autonomous institution, representing national interests, with legal identity, whose main activity is the development and coordination of the development plan of the social insurance system in Romania. Romanian citizens pay social contributions from their salary to the national fund of social health insurance. However, there are some categories of people eligible for health insurance without paying contributions: Children aged 18 and less than 18; individuals up to 26 years old who attend university; people with disabilities and

without income; pregnant women and those who are just born that do not have income or whose income is lower than the average minimum wage.

Primary care services are provided by family doctors or general practitioners or by various medical clinics. General practitioners can offer services such as first aid in an emergency or surgical care, emergency care, and chronic disease monitoring or preventive medical assistance. In Romania there are about 11,400 practitioners whose general average of patients registered is 1,600 registered. The number of consultations carried out by them is about 50 million / per year, which adds 2.5 million patient consultations performed at home.

Citizens of other European Union member states who are visiting Romania may benefit from public health care services only if they have a European Health Insurance Card issued by the country of origin. In the absence of such a card they can only access private medical services.

Romanian health sector is in a continuous process of reorganization which is aimed at implementing an integrated computerized system and introducing a national health card and electronic patient medical records. Since January 2013, electronic medical prescriptions represented a big step in the modernization of the Romanian health system. The implementation of electronic prescriptions into a computer system contributed to the development of the National Health Insurance by improving drug delivery, providing a real-time monitoring of domestic drug consumption dramatically reducing errors and possibilities for fraud.

In Romania, the public health system is developed and supported by the World Bank projects. Through the health sector reform project (2014 -2020) a number of objectives were imposed, such as: providing affordable medical services, increasing the quality of care, improving maternity and newborn services and emergency services. The cost of this project is estimated at a value of 206.5 million dollars.

Structural Funds in the health sector in Romania were administered by Regional Operational Programme 2007 - 2013, Priority Axis 3 (Improving social infrastructure), area of intervention 3.1 (Rehabilitation, modernization and

equipping of health services). Many public healthcare providers (such as Deva County Hospital, Sibiu County Hospital, Targoviste County Hospital, etc.) have made investments using funds through the Area of Intervention 3.1.

### **1.1 Dental health services**

Before 1989, dental health services were provided for free by the national health system through dental practice offices of the hospitals, clinics, schools and public institutions. Currently, in Romania dental market is highly fragmented, with more than 14,000 practitioners across the country. The number of private dental offices increased significantly. There are private medical centers providing general care, in which a segment of dental services is also active. In recent years, the private cosmetic dental treatments sector recorded a significant development in Romania, the most popular procedures offered by private clinics are: bleaching, porcelain veneers, gum reshaping, dental jewelry, etc. Romania is a growing destination for dental tourism, the main factors being the low prices and high quality of supply. Most popular treatments supplying to foreign patients: procedures for dental implants, tooth whitening and treatments on channel. The majority of foreign patients come from countries such as Italy, Germany, France, Britain and even Sweden.

### **1.2 Medical equipment**

The domestic market of medical devices has experienced a significant growth in recent years, and is directly influenced by the strong growth of private medical services market, being one of the markets with the strongest growth opportunity in Romania. Medical equipment market was estimated at 437 million dollars in 2013 and CAGR (annual growth rate) for the period 2013-2018 is estimated at 2.9%. About 90% of medical equipment in Romania is imported from countries such as Germany, Italy, Czech Republic, Hungary, Ukraine, etc. Public hospitals in Romania organize auctions for the purchase of medical devices and equipment. At such auctions, participants are generally local companies: Importers - distributors or representatives of foreign brands. An example of such tender we can see at the Military Emergency Hospital "Dr. Carol Davila" which was acquiring medical equipment in 2013, and the winning company was Karl Storz Endoscopy Romania, with a contract value totaling EUR 1.7 million.

## **2. The main players in the health services**

Romania has public health facilities located throughout the country. These include: county emergency hospitals, military hospitals, municipal hospitals and hospitals specializing in pulmonology, chronic diseases, psychiatry,

neurology, pediatrics, geriatrics, obstetrics and gynecology, infectious diseases, oncology, cardiovascular and rheumatic diseases, clinics, etc. The most important medical centers in Romania are Cluj - Napoca, Tirgu Mures, Bucharest and Iasi.

According to statistics provided by the National Institute of Statistics, in Romania there are 425 hospitals in 2015, of which 134 private hospitals and 291 public hospitals. The main public hospitals in Romania are: Bucharest University Emergency Hospital, Mures Clinical Emergency County Hospital, Cluj Napoca Emergency Hospital, Fundeni Bucharest and Iasi Regional Oncology Institute. Bucharest University Emergency Hospital is a general hospital, and in 2012 opened a new section of oncology, anesthesia, intensive care and dialysis, whose investment amounted to over one million Euros. Mures County Emergency Hospital covers medical services at local, county and regional level. It has about 1,200 beds, distributed in 21 sections and 5 departments. Currently, the hospital is in a long process of rehabilitation and modernization of outpatient services, with investments amounting to 4.5 million Euros. Cluj Napoca Emergency Hospital was founded in 1948 and has 42 units and departments and about 1,800 beds. Currently, the hospital makes investments in order to reallocate space to build an intensive care unit and build a heliport for emergencies prompt interventions. Fundeni Bucharest was founded in 1959. It is famous especially for oncology services. Here it is found and the Hematology Center and Marrow Transplantation Center for Gastroenterology and Hepatology and Kidney Transplant Center. Yearly, over 100,000 people are admitted to Fundeni. In 2013, the Institute has invested 375,000 euros in laboratories to diagnose lymphatic cancer. Also, the Institute is the only public hospital in Romania possessing the necessary space arrangement of a TrueBeam (the most advanced technology for radio surgery or radiotherapy of the world).

Relating to the fiscal value of private hospital, St. Constantin Hospital from Brasov has been given an award for being the cleanest hospital in Eastern Europe in 2014. It is followed by Ponderas hospital chain, which only 4 years after the inauguration reached a turnover exceeding 7 million. On the third place we find Euroclinic hospital, which is part of Queen Mary Hospital, and recorded in 2014 a turnover of only 5.5 million. The cumulated turnover of the first 20 hospitals in Romania amounts to 70 billion in 2014, according to statistics made by Ziarul Fiananciar, based on data provided by the Commerce Registry. If we refer to size, the largest private hospitals in Romania are MedLife, Queen Mary and Medicover. Closely, is following the chain of hospitals Sanador. MedLife is the largest operator of private medical services in the national mar-

ket, which was founded in 1996. The hospital follows its activity in nine hyper clinics, three maternal centers, ten centers of excellence, eight laboratories and six pharmacies (Chain PharmaLife pharmacies). It should be noted that this operator is working in partnership with 135 clinics across the country. In 2014 there were made investments of six million Euros in order to purchase new medical equipment and the opening four hyper clinics. Private healthcare operator Queen Mary owns four hospitals, 19 clinics, two maternity centers, three medical campuses, five imaging centers, a stem cell bank and clinical laboratory. It also has partnerships with 140 health clinics across the country. In 2014 there were made investments of four million Euros to expand the hospital network. Medcover, belonging to Swedish Medcover Group, owns 14 clinics and one hospital. Also, the Medcover Group is holding Synevo Romania Company, which is the largest private provider of laboratory services in the national market.

### **3. National Health Strategy 2014 – 2020**

National Health Strategy 2014 - 2020 has been approved by Government Decision no. 1028 from 18 November 2014 and published in the Official Gazette no. 891 of 8 December 2014. Through this strategy, the Romanian government, along with representatives of the Romanian health sector wishes to promote health as an essential element in sustainable development of the country, which can contribute both in terms of social, territorial, but especially economic. The strategy aims at creating a framework for elimination of weaknesses in the health sector by reducing the disparities that currently exist in the health sector, better use of the services of health based on the condition cost - effectiveness, and improve management quality at all levels.

The document was based also on the strategic directions imposed to all member States of the European Union through the “Europe 2020 Strategy”, Romania being obliged to integrate them into national law. The strategy was developed taking into account the schedule of European funds for the period 2014 - 2020 (end of 2015 will mark and finalization of the Structural Funds and Cohesion 2007-2013) and also the recommendations that the European Commission has formulated to address to health system in Romania.

The National Health Strategy is intended to make prevention the key element and not treatment process, as it is now based the health system. Within the framework of the International Health Tourism, The Romanian Vice President of Medical College accentuates repeatedly the importance of “prevention”. He said that when the Romanian healthcare professionals will focus on prevention then we can consider that Romania has aligned to the European states. With

this occasion, he said that it should be make changes at the legislation level to support this process: family doctors will no longer be quoted and paid salaries according to the number of sick patients, but rather to the number of health patients. This practice is common China since ancient times, and recently in European countries.

In support of Romanian patients was created the National Contact Point for cross-border Care (PNC), which is also found in the subordination of the National Health Insurance Program, which aims to facilitate access for cross-border treatment for Romanian patient, being reduced discrimination between Romanian and European patients.

Among the objectives this strategy proposes, it include: decentralization of management in the health sector management, patient empowerment and involvement through its education on preventive solutions, professional ethics, improving health services. With the occasion of this strategy, it is wished to promote and develop research and innovation in health.

Currently, most health services in Romania are given in hospitals, while medical services provided directly in the community are in a lower volume. According to the Health Strategy, outpatient services should have a much higher profile within health services, aiming to be effective and implement a filter to reduce hospitalizations that could be avoided. Hospitalization is intended to be used only in cases that exhibit a high degree of complexity.

Through the National Health Strategy, the Romanian Government proposes an efficient health system, both from the point of view of efficiency, but especially of effectiveness.

#### **4. Health care services internationally**

Production and consumption of health services, cycle of internationally patients is a matter that has existed throughout history. However, this cycle has increased notably in recent years, due to the acceleration of globalization based specifically on information and communication technology and a serious market where increased interest in medical tourism.

International patient relates to the person receiving health care services while visiting another country than his home or when he goes to another country expressly for this purpose.

Taking into account the dynamics of patients and services that can be provided by Romania, we achieved the following international patient classification.

*Patients who are treated as medical tourism: medical tourists*

In addition to spa tourism / SPA / wellness, elderly tourism and tourism of people with disabilities, medical tourism is a subcomponent of health tourism which can be defined as the act of the patient to travel from his residence to another location in order to benefit of treatments performed by specialized health care institutions. These treatments include check-ups, screening, dental care, cardiac surgery, prosthetics fitting, prosthetic treatment, oncology, neurosurgery and transplant, but also other qualified health interventions.

In terms of renal transplantation, in Romania is remarked Centre of General Surgery and Liver Transplantation from Fundeni Institute, whose survival rate is higher than the European average.

We must also note the fact that earlier this year, Fundeni Institute inaugurated Kidney Transplant Center being the only one in Romania, but also the largest in Europe, covering 13 specialties of urology. Regarding hospitalization conditions, there are at the West standards, and what is more important, the center enjoys a team of professionals who were trained abroad in order to use the latest technologies and making the most prestigious global urology techniques. Since the center inauguration, in all 10 operators theaters are daily taking place an average of 37 surgeries. It is extremely important to emphasize that Romanian doctors specializing in kidney transplantation were declared the best in the European Union; and they are going to teach a number of courses of excellence.

Also this year, in Romania has performed the first stem cell transplant in children, proving to be a real success. With the occasion of National Day of Transplantation, Minister of Health, said through a press release, that 2015 will mark the year of lung transplantation in our country. As can be seen, medicine in Romania and services offered are of high quality, enabling to international patients to benefit of a complex treatment at an affordable price. Regarding transplants, in Romania compared to other European countries, it is possible both with living donor and deceased.

*Patients who are treated as health tourism*

Health tourism covers influences generated by environmental through which the tourist has to visit the health care facilities. Health tourism can be considered a subject of environmental tourism. The fact that the tourist moves from his residence place in another country to spend his holidays, where he needs to receive emergency health care, it is called health tourism. In short, health tourism refers to those people involved in a tourism activity other than a medical one, but receiving health care services in the place they are visiting as a tourist.

Tourists who are visiting Romania and contained in the above situation can receive treatment through the European Health Card, and by Directive 24/2011.

*Patients coming from bilateral health treaties*

An important area where can be applied diplomacy mechanisms and international relations can take the form of a bilateral international treaties on Health. From this perspective, the Romanian State, through the Ministry of Health could sign numerous bilateral agreements with various countries, especially since it is an EU member. A predetermined number of patients from signatory countries can come to Romania based on the protocol, which are handled by the Ministry of Health.

After analyzing the reports of the European Union concerning the high degree of aging, Romania, through medical tourism could conclude such a treaty by which international patient can benefit of Geriatrics and Gerontology treatments. It is worth mentioning the importance and uniqueness of the Center for Geriatrics Ana Aslan, internationally recognized.. Although “Ana Aslan” is a Romanian brand recognized internationally, it is not exploited enough by the Romanian authorities.

*Patients coming from social security institutions*

Countries practicing medical tourism will seek to benefit from health care services in the form of partnerships between social security institutions. In this context, Romania could provide health care for citizens of the country who are entitled to benefit from such services under the social security agreements signed. For this type of medical service, could benefit even citizens living abroad. The major interest would be that these protocols generate access of international patients to Romanian health services, which would implicitly bring revenue to the state budget. Currently, Romania only sends patients abroad through such agreements.

## International Health Tourism

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### Abstract

*This article gives an overview of the current developments in the medical tourism industry. It describes the globalization of medical tourism and argues that the overall increase in the flow of patients and health professionals, and medical technology, capital funding and regulatory regimes across national borders has triggered new patterns of consumption and production of healthcare services. This is illustrated with brief summaries presenting the state of medical tourism in various countries across the globe.*

**Keywords:** *medical tourism, globalization, international trends in tourism*

The tourism industry has grown into the largest service industry in the world and it is increasingly harder for governments to manage. Most developed or developing countries, took into consideration the tourism industry as one of their main economic priorities. The importance of tourism is not limited only at creating career opportunities and generating revenue. The tourism and travel industry have undergone remarkable changes since the 1950s, experts characterizing the period as a revelation. These changes improved the tourism services and in the near future we will benefit from high quality tourism services. Currently, tourism is seen as a strong and professional activity in the world, and it is considered one of the most important economic sources (Hallmann et. al. 2012:13-21).

Tourism is a complex economic and social activity, which has to be investigated at different levels to achieve the desired development in an organized manner (Risteskia, M. Et . al 2010:375-386). Currently, countries which are seeking an increase of the Gross National Income consider tourism industry as an essential industry with a large financial service, generating jobs and high profits. There are different types of tourism such as religious tourism, sports tourism, tourism war, medical tourism, etc. The role of medical tourism has been growing over the past decades. Thus, improving health services plus a vital role in economic development, because tourists who go into a foreign city to undergo treatment will be interested in the sights and vice versa (Connell 2013: 1-13.)

There are several definitions of medical tourism. One of these definitions considers medical tourism or medical travel as a trip to a foreign country for a detox diet, dental treatment or performing a surgery. This trip must involve at least one overnight stay in the location in which the treatment takes place (Sadrmomtaz & Agharahimi, 2010:516-524). According to Jonathan Edelheit, the president of the Florida Association of Medical Tourism, medical tourism refers to travel of people in other countries than your home to receive medical treatment. Medical tourism is one of the most important indicators of the tourism industry with significant economic and social benefits being known as international travel in which a person makes use to treat cheaper compared to similar treatment in country home (Edelheit 2008:9-10).

### **1.1 Globalization of medical tourism**

The overall increase in the flow of patients and health professionals, and medical technology, capital funding and regulatory regimes across national borders help at rise new patterns of consumption and production of healthcare services over the past decades.

Free movement of goods and services under the auspices of the World Trade Organization and its General Agreement on Trade in Services (Smith et. al. 2009:593 -601) accelerated liberalization of trade within health services, and to this development also contributed bilateral and regional trade agreements. Health care is predominant in the services industry, transforming it into a commercial act, as a global good.

Consumption of health services in a foreign country is not a new phenomenon, and its development should be located in a historical context. Individuals have traveled abroad for health care, since Antiquity, and in the nineteenth century in Europe, for example, was in vogue for middle class to travel to thermal cities for treatment considered necessary to improve the life quality. During the twentieth century, rich people from less developed areas of the world traveled to the developed countries to have access to certain medical facilities and doctors more prepared. However, medical tourism has undergone qualitative and quantitative changes compared to earlier forms of travel related to health. The key differences stay in reversing the flow from developed nations to less develop, more

regional movements, and the appearance of “international markets for patients.” The main features of this century in terms of medical tourism are:

- The large number of people traveling for treatment;
- Patients are traveling for treatment not in developed countries, but in less developed countries, due to high quality treatments at low prices, cheap flights and numerous sources of information on the Internet;
- The new “infrastructure” created on the web - in which the patient can calculate in advance the approximate price of health services he will benefit from, or the price of the travel.
- Industrial development: both the private and public health sector from developed countries, but also ongoing developing are investing in promoting medical tourism, being a potential source of growing external revenue.

Health policies and the delivery of health were traditionally bounded by the nation state or federal levels of government. In Great Britain, for example, the establishment of the National Health Service in 1948 introduced the services of primary and secondary healthcare, financed through public tax and delivered for free to population. In recent decades, economic, social and political changes have encouraged significant at trans-national and international level, health policy development. These national interconnections (political, economic, social and technical) include the movement of people, goods, capital and ideas and this has provided new challenges and opportunities for health care service delivery.

The tourism industry care is dynamic and volatile and a number of factors, including economic climate, changes of domestic policy, political instability, travel restrictions, advertising practices, geo-political changes, and also innovative and pioneering forms of treatment can help at all changes in patterns of consumption and production of health services, both domestically and abroad. There are, for example, important bilateral exchanges of patients between OECD members (Organization for Economic Co-operation and Development): the United States to

Mexico, North and Central Europe to Eastern Europe. In 2015, due to Syrian civil war, the Syrian government decided to send war victims for treatment in Turkey, and this was negotiated even with private hospitals in Romania, due to the large influx of casualties.

Some OECD countries (Germany, Austria, Switzerland, and Italy) through adopted policies, are trying to propel on the world market for becoming leading providers on medical tourism market.

### **1.2 Medical tourism market**

Individuals who choose to go to treatment abroad face with various problems, but the most common are:

- Cosmetic surgery (breast, face, liposuction, rhinoplasty);
- Dentistry (Cosmetic and reconstruction);
- Cardiology / heart surgery (bypass, heart valve replacement);
- Orthopedic (hip replacement, knee joints interventions);
- Obesity surgery (gastric sleeve, gastric bypass, laparoscopic gastric band fitting);
- Fertility (In Vitro Fertilization, sex change operations);
- Transplantation of organs, tissues or cells;

- Interventions of the eye;
- Diagnosis and check-up.

Most of the times, the plan to travel between home country and the destination country is well established. For example, those who access medical treatment in Hungary tend to be from Western Europe, being cases where the historical links between countries are extremely well run, such as Malta and the United Kingdom or the United Kingdom and Cyprus (Muscat et. al. 2006:121). Other Western Europeans take advantage of the opening of borders of countries from Eastern Europe and the former URRS (for example, trade between the UK and Poland).

A global map of medical tourism destinations would include Asia (India, Malaysia, Singapore and Thailand); South Africa; South and Central America (including Brazil, Costa Rica, Cuba and Mexico); Middle East (particularly Dubai) and a number of European destinations (Scandinavia, Central Europe and Southern Mediterranean). However, estimates are based on industry sources, which can be biased and inaccurate.

It seems that geographical proximity is an important factor, but not decisive in shaping individual decisions to travel to a specific destination for treatment. If this is a reflection of the tourism element, it means that people are traveling not only for medical reasons, but for increased opportunities. However, the distance of movement is also related to cost (Exworthy & Peckham 2006:267-287).

Demand for services may be volatile due to global economic factors and other external factors such as consumer preferences and changing exchange rates. Providers and national governments seek new challenges for existing suppliers, as it is the case of fertility clinics in Latin America (MacReady 2007:1849-1850).

A number of governments are promoting their health facilities and emerging consumer markets using cooperation with brokers, sites and commerce fairs. Exchange rate fluctuations may come into the support of countries making them more attractive financially to the detriment of others. Also, travel and security restrictions can deter consumers to explore alternative markets (Smith et. al. 2010:59-69).

There is also the question whether medical tourism can be considered a luxury good, a question that still has no clear response. The fact is that it is a niche service. Another unanswered question for now is direct proportionality between the cost of medical services and growing consumer income, such as the use of services varies depending on the price (price elasticity), and whether they have a harmful impact on the demand for medical tourism. The decline in the economic climate may have a reverse effect because it reduces medical supply public services, causing the patient to seek to treat privately, avoiding waiting lists and stricter eligibility to receive a particular treatment.

For some medical tourism destinations, attempts are being made to promote cultural, hereditary and recreational attractions. For some patients, the possibility of a holiday in the same place where the treatment takes place is irrelevant, but for others it may be an essential component in the decision-making process. For the customer, advertising plays a major role in the reputation of the place, but especially the providers' service (Turner 2007:303). It is important to pay attention to marketing services, the latest technology and high quality, but especially to doctors with extensive experience (internships, employment status). Familiarity and cultural similarity are more important as the services are geared towards the diaspora population, such as, for example, health care service for Korean families establish in United States, Australia and New Zealand. Similarly, colonial ties between the UK and India appear to have encouraged the medical market between those two countries (Bergmark et. al. 2008:610-614).

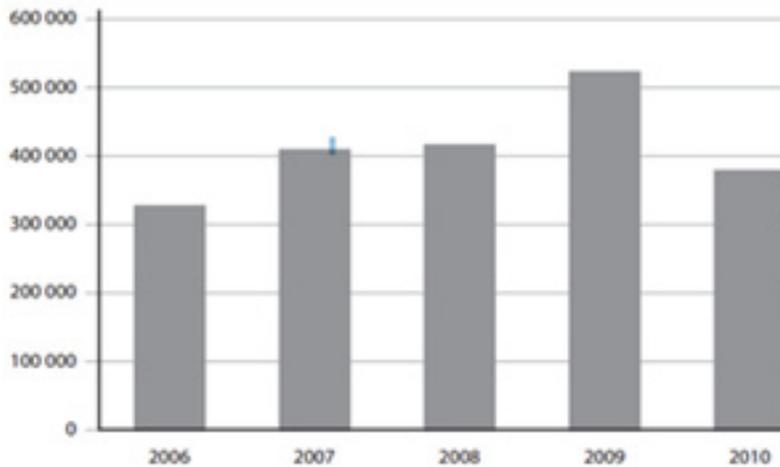
Health tourism figures reach levels increasingly higher year by year, and in 2014, reaching 439 billion dollars. From hotels for health, spas and health centers, people give importance to health and welfare.

In the following we will analyze the most important health destinations, recognized globally.

### *Africa*

South Africa - Those traveling for medical purposes in East and West Africa spend in South Africa more than other travelers (including those in the north) and in general they are part of the African middle class, traveling for medical diagnosis and treatment. The average length of stay for medical tourists from Europe is of 8 nights. The average length of stay for medical tourists from neighboring Upper Africa is less than 4 days.

African medical tourists annually spend about 128 million dollars. The number of medical tourists in South Africa grew from 327,000 in 2006 to over 500,000 in 2009.



*The number of medical travelers in South Africa, 2006 - 2010 (South Africa Annual Tourism Reports, 2008 – 2011)*

Tunisia - 155,000 foreign patients went in Tunisia for treatment in 2013, as stated by the Minister Mohamed Salah Ben Ammar. European patients who have chosen Tunisia for health tourism and vacations have chosen hotels that provide access to SPA and medical centers, among other facilities (Crush et. al. 2012:22).

Asia - The number of medical tourists traveling in Asia is expected to grow to 10 million by the end of 2015, given that it is expected that Thailand, India and Singapore will end up controlling 80% of the market (Renub Research 2014:5). Asian medical tourism market is expected to register a growth of 22% CAGR (compound annual growth rate) in the period from 2014 to 2018 according to a statistical study conducted by the consulting firm RNCOS (Asian Medical Tourism Market).

India - As the Indian High Commission says, Indian hospitals have received 18,000 Nigerians in 2012, 47% of these going exclusively to medical treatment in India, spending about 260 million dollars (Nigeria: Report - Nigerians Spent N41 Billion On Medical Tourism to India).

According to the Director General of Appolo Hospital, the number of international patients who visited the hospital increased by 20% year by year. The hospital provides medical services to patients from European countries, Malaysia, Singapore and Sri Lanka. Between years 2009 - 2011 the number of medical tourists in India increased by 30% compared to previous periods. It is estimated that at the end of 2015, India will receive half a million health tourists annually.

Kazakhstan - In December 2014, the Minister of Health and Social Development announced that 832 foreigners were treated in public-private health system. Most patients were from the UK, 260, followed by the United States, 111, Kyrgyzstan 51, Turkey 50, Russia 44 but also from countries like Bulgaria, Sri Lanka, Philippines and other 23 countries. The number includes also the foreigners who are working in Kazakhstan, so it is unclear if the number of passengers who traveled in Kazakhstan reflects only medical reasons and how many have received treatment, due to different circumstances. The medical services provided to foreigners in 2013 were: herniated disc surgery, in vitro fertilization, valve-heart surgery, uterine fibroids and adenomyosis treatments.

Korea – According to the Ministry of Health and Welfare, 210,000 international patients received medical treatment in Korea in 2013. Compared to 2012, it was recorded an increase of 32.5% when only 159,464 patients went to Korea. From these patients, 32,750 were American citizens, followed by 24,026 Russian citizens, 16,849 Japanese and 12,034 Mongolian. The number of Russian patients increased in 2013 by about 46% over the previous year. (International Medical Travel Journal, South Korea: Korea increases number of international patients).

Middle East, with an annual increase of 5.8 percent, the fastest growing from the medical tourism market in the world. The most common type of treatment required by international patients is internal medicine procedures, including digestion problems and circulatory system.

The South Korean government is investing annual 4 million \$ to promote medical tourism industry, which is dominated by plastic surgery. By 2020 Korea estimates about 1 million medical tourists annually, the widest segment being represented by Chinese tourists.

A recent study made by the International Society of Plastic Surgery shows that in South Korea were realized the biggest number of plastic surgery interventions than in any other country in the world.



*Medical tourism revenues from South Korea in million \$*

Malaysia - Malaysian healthcare industry generated revenues of approximately 20 million \$ in 2013. There was an increase in the number of medical tourists from 583.000 in 2011, 671.000 in 2012 to 768.000 in 2013.

Thailand - Health tourism revenue is expected to increase to 3.11 million \$ by 2017. In 2013, 26.7 million tourists traveled to Thailand, of which 2.5 million have traveled for medical reasons.

#### *Central America and Caribbean*

Costa Rica - received in 2014, 100,000 medical tourists. According to data from the International Council for Promotion of Costa Rica Medicine (PROMED) most medical tourists came from the United States and Canada and spent an average of 7,000\$ for treatment. Among the treatments performed, predominated the dental treatment, followed by orthopedic, bariatric surgery, gynecology and plastic surgery.

Guatemala - In 2012, Guatemala received 5,000 medical tourists who generated an income of \$ 35 million. Medical tourism sector has proposed that by the end of 2015 to reach a total of 20,000 medical tourists.

### *Europe*

France - medical tourism industry in France is so well developed that, the World Health Organization ranked it as the number one healthcare system in the world.

Germany –Health tourism revenue is expected to bring 4.6 billion \$ to Germany till in 2017. The largest non-European groups of patients who come for treatment in Germany are Russians, about 6,000 per year. According to figures from the Federal Statistical Office of Germany and the University Hospital Heidelberg, in 2013 Germany received 1 million international patients to treatment from 178 countries.

Spain - In 2012, 21,868 international patients traveled to Spain for various health treatments, generating revenue of 12.1 million euro.

### Middle East

Dubai- according to figures from Dubai Healthcare City (DHCC), medical tourism sector generated in 2013 revenue of 1.69 billion \$. Dubai is one of the biggest health tourist destinations in the region. Dubai Health Ministry aims to attract annually 1 million international patients and build 22 hospitals by 2022. Achieving this ambitious target would make Dubai a center of medical tourism, especially since the UAE is hosting the World Expo in 2020. It is worth mentioning that from the total hospitals in Dubai, 70% have international accreditation.

Jordan - Jordan has 64 private hospitals were have been treated 250,000 patients in 2013. According to the International Medical Travel Journal, patients, along with their companions, generated revenues of 1 billion \$.

Turkey – According to data from the Ministry of Health, Turkey has treated 270,000 patients in 2012, wanting at the end of this year to reach a total of 500,000 international patients. From the total of patients who come to Turkey for treatment, 94% used the services of private hospitals and only 6% the public health system.

#### North America

Canada – Frasier Institute claims that 41,838 international patients were treated in Canada during 2013. Canada noted in the medical tourism sector after Health Network University has signed a 30 million \$ partnership with Kuwait, for a period of 3 years for treating patients in this country.

#### Oceania

Australia - The government of Australia announced that in 2013 10,000 patients have traveled to receive treatment, generating revenues of 26 million \$ into the national economy. Health destinations grew by 15% in 2013 over the previous year.

#### South America

Argentina – In 2013, Argentina medical tourism generated revenues of 90 million \$. According to Argentinean Tourism Bureau, tourists coming to treatment spend 5 times more than those who come to visit. Health tourism represent a significant source of revenue growth in the context in which 1,000 patients are monthly traveling to this country to benefit of a treatment.

### **1.3 Medical tourism industry**

Medical tourism is a developing industry worldwide, with a number of key elements that support the development of commercial interests, such as brokers, healthcare providers, web sites, conferences and media.

Medical tourism and websites: a key factor in medical tourism phenomenon is the technological platform for ISPs where potential patients can access medical information from anywhere in the world. For health care providers, internet is the most important marketing tool to reach to the non-national markets. Marketing is

an essential element which helped at boost medical tourism, thanks to web resources that have provided consumers, advertising, and alternative of health markets which helped to connect patients with a broker or a health provider (Lunt et al. 2010:1-11).

Advertising and marketing: Given the role of advertising in influencing the consumer's decision, there is a question regarding the asymmetry of information between consumers and suppliers, in case there are differences of access availability and quality of information, and also the safety issues and informed choice concerned that link medical tourism and Internet usage. It would seem that there are few sources of non-commercial nature and provides independent information, unlike the information provided in commercial and marketing purposes. There are studies according to which advertising sources reduces its presence credibility (Walther et. al. 2004:24).

In the medical tourism sector, advertising and marketing tend to exaggerate the quality of their services, often failing to provide complete and balanced information needed for decision-making for potential patient.

Brokers - there are a growing number of companies and consultants offering services and providing information on the Internet for potential patients and health care options available, the transaction costs of the medical service. Typically, brokers, through their own websites are providing health promotional packages, which can be adapted to individual patient needs: flights, treatment, and recovery hotel (Whittaker 2010:413). Brokers can be specialized in certain target markets or procedures (such as dentistry or cosmetic surgery treatments) or destination countries (e.g. Turkey, Germany, France, and Israel).

Travel insurance – a travel insurance market for medical tourists is developing. Purchase of a suitable health insurance on patient's problem can be problematic, especially for those who are facing a serious problem earlier of their journey. Traditional insurance policies for travel and accommodation, exclude individual trips planned for medical purposes. However, insurance policies have evolved, covering the costs of operations for tourists which are in holidays, but face a health problem in the country they are visiting.

Health providers – looking at the picture of health tourism we see a diversity of market participants who come mainly from the private sector and have developed departments for international patients. Both medical clinics and hospitals addressing to international patients have a wide range of services that can be provided to the

patient. In general, private hospitals are part of large corporations (e.g. Apollo Group - have 50 hospitals both in India and in other countries, Acibadem Group from Turkey).

Countries who are wishing to develop medical tourism industry can contribute to the growth of their health system or develop partnerships with multinational players. Private hospitals can develop partnerships with travel agencies and large brokerage companies. International accreditation can also contribute to the development of medical services. Extremely important are international partnerships between hospitals and universities (e.g. Harvard Medical International, John Hopkins Hospitals).

National Strategies - a series of national government agencies and political initiative seek to stimulate and promote medical tourism in their countries. Many countries see a significant economic potential in medical tourism. Governments in India, Singapore, Malaysia, Hungary, Poland, Malta and Turkey are seeking to promote the benefits of medical tourism destinations at international trade fairs, advertisement in the press in other countries and official support for various medical activities as part of economic policy tourism development.

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