

## STATE OF RHEUMATOLOGY IN THE REPUBLIC OF BULGARIA FOR THE PERIOD 2019-2023

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**Abstract.** Over the past 15-20 years, there has been a notable shift in the overarching strategy within rheumatological theory and practice concerning the diagnosis and comprehensive treatment of rheumatic diseases. The primary focus has shifted towards early diagnosis, coupled with aggressive treatment strategies, aiming to achieve long-term remission or maintain low disease activity. Consequently, the primary objective for rheumatologists has been to achieve sustained improvement in patient outcomes. This shift has been facilitated by the updating of classification criteria, enabling earlier diagnosis and intervention in rheumatic diseases. Furthermore, advancements in indices for evaluating disease activity and treatment efficacy have enhanced the monitoring process. The integration of new instrumental and laboratory techniques, such as Magnetic Resonance Imaging (MRI) and ultrasound (US) for musculoskeletal assessment, has become standard practice. Additionally, the introduction of novel and highly effective treatments has significantly contributed to improved patient outcomes. Consequently, there has been a notable reduction in the proportion of patients experiencing disabilities associated with rheumatic diseases. Nonetheless, a significant issue persists concerning the uneven distribution of rheumatologists and rheumatology hospital beds throughout the country. The disparity is striking, with over half of all rheumatologists concentrated in Sofia and Plovdiv, comprising 106 individuals (57 and 49, respectively). While there are economic, financial, and demographic factors at play, the primary root cause remains the absence of comprehensive government policies addressing this disparity. In summary, the field of rheumatology in the Republic of Bulgaria has experienced considerable growth and transformation over the past decade. The number of rheumatologists has doubled, with a notable proportion exclusively engaged in outpatient care. This expansion has led to a commendable level of access to rheumatological specialists and hospital facilities per 100,000 population.

**Key words:** rheumatology, Republic of Bulgaria, current challenges

### WHAT TRANSPIRED OVER THE PAST 35 YEARS WITHIN THE COUNTRY?

There have been notable shifts in socio-political and socio-economic dynamics, marked by the dissolution of several social factors that traditionally governed societal and individual morality. Demographically, the landscape of our nation has undergone significant changes. According to data from the National Statistical Institute (NSI) as of September 7, 2021, the population of the Republic of Bulgaria stands at 6,519,789 individuals. Of this population, 979,000 individuals fall within the age bracket of 0 to 17 years (15%), while 5,541,000 are over the age of 18 (85%). Within the adult population, 3,815,000 individuals fall between the ages of 18 and 64 (58.5%), and 1,726,000 individuals are over the age of 65 (26.5%).

The healthcare system has undergone significant transformations, with doors opening wide for international cooperation, particularly in the realms of medicine and healthcare.

A new generation of Bulgarian citizens has emerged and flourished-ambitious, intelligent, well-informed, and adept at utilizing electronic communication tools. These pragmatic young individuals are capable of articulating and defending their viewpoints. However, the declining quality of school education has resulted in a suboptimal selection of students in higher education institutions, including those in the medical field.

### WHAT HAS UNFOLDED IN RHEUMATOLOGY OVER THE PAST 35 YEARS?

Rheumatology as a medical discipline and the practitioners within it are intricately intertwined with the broader processes and phenomena previously mentioned. Despite certain adverse trends within the healthcare system, rheumatologists continue to exemplify a commendable diagnostic and treatment approach towards their patients.

In their day-to-day practice, as well as during lectures, workshops, and other educational events, rheu-

matologists consistently emphasize and advocate for a thorough and competent approach to patient care. The Bulgarian Society of Rheumatology (BSR) plays a pivotal role in fostering this environment by facilitating interaction among rheumatologists and serving as a regulator of best clinical practices. Additionally, higher medical institutions serve as foundational sources of medical knowledge and professional qualification. Furthermore, the expertise and wisdom of seasoned Bulgarian rheumatologists, with their wealth of experience and personal example, significantly contribute to advancing the field.

In a significant majority of cases (around 80%), the accurate diagnosis of inflammatory joint and degenerative diseases can be achieved through a comprehensive evaluation encompassing detailed medical history, physical examination, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), rheumatoid factor (RF) assessment, musculoskeletal ultrasound (MSU), and radiographic imaging of wrists, fingers, toes, and sacroiliac joints.

Over the past 15-20 years, there has been a substantial transformation in the overarching strategy within rheumatological theory and practice concerning the diagnosis and comprehensive treatment of rheumatic diseases. The primary emphasis shifted towards early diagnosis, coupled with prompt and aggressive treatment, aiming to achieve long-term remission or maintain low disease activity.

This shift was facilitated by the updating of classification criteria, enabling early diagnosis and intervention in rheumatic diseases. Additionally, there were enhancements in indices for evaluating disease activity and treatment efficacy, alongside the implementation of new instrumental and laboratory methods. Routine utilization of Magnetic Resonance Imaging (MRI) and ultrasound (US) examination for musculoskeletal assessment became standard practice. Furthermore, the introduction of novel and highly effective pharmaceuticals has significantly contributed to improved patient outcomes, leading to a notable reduction in the proportion of patients experiencing disabilities.

However, alongside these positive advancements, there have been notable shifts in the doctor-patient relationship dynamics. Patients are increasingly subjected to less thorough interrogation or examination, with laboratory and instrumental tests often being prioritized before the patient is examined. Financial considerations frequently play a dominant role in treatment decisions. While this approach is not pervasive throughout the rheumatology

community, isolated instances of such practices have been observed.

In hospitals, the treatment-diagnostic process often revolves around the creation and implementation of clinical pathways. It has become common for a considerable number of patients to be hospitalized primarily for the purpose of undergoing expensive tests such as MRI scans and immune status assessments. Hospital-based treatment tends to be notably more costly than outpatient care, leading to the unjustified expenditure of public resources. Additionally, incorrect clinical pathways are utilized by the National Health Insurance Fund (NHIF) for reimbursing medical services, despite their original intention to serve as guidelines for optimal clinical practice.

Moreover, the frequency, clinical presentation, and outcomes of certain rheumatic diseases have undergone notable shifts. Traditional manifestations of diseases like rheumatoid arthritis (RA), characterized by severe joint damage leading to rapid disability, are becoming increasingly rare. Instead, RA often presents with symptoms such as polyarthralgia, polymyalgia, fever, and asthenia. Furthermore, there has been an uptick in the occurrence of vasculitis. Notably, the average life expectancy of patients with systemic connective tissue diseases (SCTDs), particularly those with systemic lupus erythematosus (SLE) and vasculitis, has seen a significant increase.

## DEVELOPMENT OF THE RHEUMATOLOGY NETWORK IN THE COUNTRY

**Table 1. Number of rheumatology specialists in hospital care (HC) and outpatient care (OC)**

|                                      | 2013      | 2018      | 2023      |
|--------------------------------------|-----------|-----------|-----------|
|                                      | n / %     | n / %     | n / %     |
| Hospital care                        | 87 / 100  | 111 / 127 | 135 / 122 |
| Outpatient care                      | 17 / 100  | 21 / 123  | 61 / 290  |
| Total rheumatologists with specialty | 104 / 100 | 132 / 127 | 196 / 148 |
| Residents                            | 28        | 50        | 32        |

The total count of rheumatologists across the country has been steadily increasing. In 2013, there were 104 rheumatologists, which grew to 132 by 2018 (a 27% increase), and further rose to 196 by the end of 2023 (representing a 48% increase). The growth rate of specialists engaged in hospital care has remained consistent, averaging around 25% over the years: 87 in 2013, 111 in 2018, and 135 by the close of 2023. In contrast, the growth rate of rheumatologists solely practicing outpatient care has nearly tripled: 17 in 2013, 21 in 2018, and 61

by the end of 2023. This positive trend is one that should be sustained. Notably, while the number of rheumatologists in hospital care has seen consistent growth, the same cannot be said for those in outpatient care. However, given that many of the doctors practicing in hospital care also provide services in outpatient settings, it can be inferred that Bulgarian citizens are receiving timely and competent rheumatological care. Currently, there are 32 residents in rheumatology, indicating that in the coming years, the number of specialists in rheumatology could reach 225-230 individuals. Presently, in the Republic of Bulgaria, there are 3.54 rheumatologists per 100,000 people, compared to 1.55 in 2013. This suggests that over the past decade, the number of rheumatologists has nearly doubled. This level of saturation with such specialists surpasses that of many European countries. Looking ahead, it is imperative to strategically reduce the number of specialists to align with the biological turnover within the specialty. Therefore, informed state regulation, consistent with international standards and the unique needs of each region, is crucial, rather than relying on spontaneous self-regulation.

In recent years, there has been little fluctuation in the number of rheumatology hospital beds. While some hospitals have closed beds, others have opened new ones, resulting in a total of 555 beds across the board. In the National Recovery and Resilience Plan (NRP) under the „Health“ section, it is highlighted that the number of hospital beds and hospitalizations in the Republic of Bulgaria exceeds the EU average and is slated for reduction. Given that rheumatology predominantly operates as an outpatient specialty, changes on the horizon are inevitable.

The incoming management must prepare the rheumatology community for potential adjust-

ments. This entails conducting an objective analysis of the current state of the rheumatology network in the country and formulating well-reasoned, scientifically grounded, and consensus-driven proposals.

The distribution of rheumatologists and rheumatology hospital beds across the country is notably uneven. More than half of rheumatologists practice in Sofia and Plovdiv, with 106 individuals in total (57 and 49, respectively). While this phenomenon can be partly attributed to economic, financial, and demographic factors, the primary cause is the absence of government policy addressing this issue. Presently, there are 10.43 rheumatologists per 100,000 population in Plovdiv and 8.1 in Pleven, which is three times and two times higher, respectively, than the national average. Similarly, the number of rheumatology hospital beds in these areas exceeds the country's average by about fourfold, with 47 beds per 100,000 population in Plovdiv and 39.7 beds per 100,000 population in Pleven.

Nevertheless, a persistent issue remains the absence of rheumatologist specialists in certain regional cities such as Montana, Pernik, Kyustendil, Blagoevgrad, Gabrovo, and Haskovo. While this is a favorable development, it does not significantly impede the population's access to specialized rheumatology care. It is imperative to continue discussions on this matter with the Ministry of Health and the Bulgarian Medical Association (BMA) to devise a comprehensive solution applicable to all medical specialties.

In conclusion, over the past decade, rheumatology in the Republic of Bulgaria has witnessed rapid development. The number of rheumatologists has doubled, with a third of them exclusively practicing outpatient care. This has led to a commendable level

**Table 2. Number of rheumatologists and their distribution in hospital and outpatient facilities in larger rheumatology centers\***

| City/District                          | Burgas  | Varna   | Pleven  | Plovdiv | Sofia     | Stara Zagora | Total for Bulgaria |
|----------------------------------------|---------|---------|---------|---------|-----------|--------------|--------------------|
| Number of population by district       | 289.254 | 362.876 | 148.692 | 469.806 | 1.217.692 | 207.954      | 6.519.789          |
| Number of hospital beds                | 20      | 60      | 59      | 221     | 139       | 12           | 555                |
| Hospital structures                    | 1       | 3       | 4       | 7       | 7         | 2            | 34                 |
| Total number of rheumatologists        | 10      | 19      | 12      | 49      | 57        | 8            | 196                |
| Rheumatologists in HC                  | 5       | 12      | 10      | 41      | 45        | 4            | 135                |
| Rheumatologists in OC                  | 5       | 7       | 2       | 8       | 12        | 4            | 61                 |
| Number of graduates                    | 4       | 4       | 4       | 19      | 4         | 1            | 32                 |
| Rheumatologists per 100,000 population | 3.46    | 5.23    | 8.1     | 10.43   | 4.68      | 3.85         | 3.54               |
| Beds per 100,000 population            | 6.9     | 16.5    | 39.7    | 47.0    | 11.4      | 5.8          | 10.0               |

\*NSI. Population of the Republic of Bulgaria 6,519,789 (around 6,520,000), as of September 7, 2021 [2]

of saturation of rheumatological specialists and hospital beds per 100,000 population.

### **QUALIFICATION IN RHEUMATOLOGY AND HEALTH SERVICE QUALITY**

The training is conducted across several avenues:

- Postgraduate courses, arranged by Medical Universities.
- Attendance at national congresses, conferences, workshops, regional, local, and other scientific gatherings organized by the Bulgarian Society of Rheumatology (BSR).
- Participation in European and global congresses, conferences, and other international scientific events.
- Engagement in ongoing education programs organized by the BMA.
- The courses organized by Medical Universities are meticulously planned and cover contemporary topics. Led by proficient instructors, these sessions provide essential qualifications and certifications mandated by the NHIF. There is significant interest in primary rheumatology courses, thematic courses, and musculoskeletal ultrasound examination courses.

Bulgarian rheumatologists have ample opportunities to engage in prominent national and international forums, where intricate issues within the specialty and the latest advancements in rheumatology are deliberated. At each EULAR congress, Bulgarian rheumatologists actively contribute through posters or oral presentations. It's rare to find a rheumatologist who hasn't attended at least 2-4 international scientific events annually.

From 2019 to 2023, the Bulgarian Society of Rheumatology (BSR) organized 11 national forums, including 5 national conferences. Notably, 9 of these forums featured esteemed foreign speakers with significant contributions to rheumatology. Particularly memorable were the two meetings with Prof. Baraliakos, with another planned for 2024. Other distinguished foreign guests at the National Conferences included Filip Severich, Kodrina Ankuta, Nemanja Damyanov, Dimich, Lubinka Damyanovska, Karamfilovski, Korochina, Carlo Selmi, Olena Zimba, Armen Gasparian, and Stefka Radenska.

As a longstanding tradition, recent years have witnessed the active participation of leading Bulgarian specialists from various medical fields in the national events organized by the Bulgarian Society of Rheumatology (BSR). These specialists hail from diverse disciplines including imaging diagnostics,

orthopedics, immunology, microbiology, neurology, neurosurgery, cardiology, dermatology, endocrinology, ophthalmology, psychiatry, gynecology, genetics, and law. These interdisciplinary gatherings have proven highly beneficial, garnering keen interest from rheumatologists. They spark vibrant discussions, enrich the knowledge of all participants, and foster improved collaboration among different medical specialties.

Particularly noteworthy is the strong partnership forged with Prof. Kyurkchiev and his team of immunologists, who have actively participated in national rheumatology conferences and other events for the past nine years. Additionally, Prof. Chorbakov from the Bulgarian Academy of Sciences (BAS) has been a regular attendee for the last five years.

Furthermore, three joint meetings between the Rheumatology and Dermatology Societies have been held. These sessions delved into various aspects of treatment with biological agents and JAK inhibitors (JAKi). Notably, dermatologists are increasingly prescribing biologic/targeted synthetic disease-modifying antirheumatic drugs (b/tsDMARDs) for patients with psoriatic arthritis (PsA). However, significant disparities exist in the treatment approaches for PsA and psoriasis (PsO). Dermatologists lack the expertise to determine which medication to recommend for a specific phenotype of PsA or how to manage musculoskeletal manifestations. Thus, it is imperative to address this issue in upcoming meetings with dermatologists scheduled for this year.

Between 2019 and 2023, considerable emphasis was placed on regional and local meetings for rheumatologists. At the initiative of the Bulgarian Society of Rheumatology (BSR) and with support from pharmaceutical companies, a total of 33 regional and an equal number of local meetings were organized. These gatherings typically drew between 8 to 50-60 attendees. Rheumatologists responded positively to this format as it minimized theoretical lectures in favor of in-depth discussions on challenging diagnostic and therapeutic cases. This format encouraged active participation, allowing colleagues to freely ask questions and share opinions.

Furthermore, a new cohort of young Bulgarian rheumatologists achieved success in obtaining the second level of competence in the EULAR ultrasound course (Teach the Teacher – TTT), certifying them as teachers in international courses. Following the adoption of new EULAR training regulations for musculoskeletal ultrasound in Bulgaria, N. Stoilov, S. Marincheva, and V. Boyadzhieva from Sofia, along with R. Karalilova and Todorov from Plovdiv, were cer-

tified. Additionally, during this period, five young rheumatologists attained certification for the Advanced level – level I of competence: Ermencheva, Zhekova, Kopchev, Shumnalieva from Sofia, and Sapundjieva from Plovdiv.

Over the past three years, national conferences have featured workshops aimed at enhancing the qualifications and knowledge of rheumatologists. These workshops covered various topics such as musculoskeletal ultrasound (MSU), computed tomography (CT) and magnetic resonance imaging (MRI) of the skeleton, capillaroscopy, and examination of crystals in synovial fluid. The speakers delivered presentations with great competence and clarity, focusing mainly on practical applications.

In recent years, our country has adopted several innovative methods that have become standard practice in rheumatology. These include ultrasound examination of musculoskeletal structures and vessels, MRI examination of musculoskeletal structures, CT and MRI examination of vessels, spiral CT, thermography, and modern immunological research. Moreover, a wide range of therapeutic strategies used in Europe and the USA have been implemented, including treatment with various biological agents, targeted synthetic disease-modifying antirheumatic drugs (BPARDL), pulse therapy with cyclophosphamide and immunoglobulins, local intra-articular and peri-articular procedures, and plasmapheresis. The majority of rheumatologists have completed fundamental specialized courses and possess robust theoretical and practical training. It can be objectively stated that Bulgarian rheumatology has attained a commendable standard, fully aligning with European standards.

However, one notable weakness is the underutilization of opportunities for continuous professional development offered by the Bulgarian League for Rheumatology (BLS). In the upcoming years, special attention should be devoted to addressing this issue.

The quality of rheumatic services has seen a significant improvement, now meeting the volume and diversity standards set by the EU. In Bulgaria, the practice of rheumatology adheres to the guidelines and consensus documents outlined by EULAR, ACR, and the Ministry of Health (MOH). National consensus documents have been established for the treatment of various rheumatic conditions such as rheumatoid arthritis (RA), ankylosing spondylitis (AS), psoriatic arthritis (PsA), osteoarthritis (OA), gout, systemic lupus erythematosus (SLE), and progressive systemic sclerosis (PSS). Additionally, consensus documents on capillaroscopy and musculoskeletal ultrasonography

in rheumatology have been developed. Recommendations have been issued to rheumatologists regarding the management of rheumatic patients amidst the COVID-19 pandemic, including guidelines for vaccination. The Pharmacotherapeutic group (PTR) has undergone five revisions, regularly updating information on all registered antirheumatic medications in Bulgaria. In 2023, updates were made to the RA, AS, and systemic sclerosis consensus documents, along with the development of recommendations for reproductive health in patients with rheumatic diseases.

The establishment of registers for inflammatory joint diseases (RA, AS, and PsA) commenced at the end of 2021. Currently, the RA and AS registers are undergoing testing, while the PsA register is nearing completion.

However, several challenges hinder the provision of better rheumatological healthcare. These include the uneven distribution of rheumatologists across different regions of the country, the absence of rheumatologists in some regional cities, low reimbursement rates for outpatient care, insufficient funding allocated to specialists for laboratory and instrumental research, and inadequate reimbursement rates for medical procedures.

## **INTERACTION OF BSR WITH THE INSTITUTIONS**

BSR collaborates with reputable public organizations such as the Ministry of Health, NHIF, Bulgarian Medical Association (BMA), and patient's organizations. In 2021, following challenging negotiations with the NHIF and the Society of Orthopedics, we prevented the removal of codes 81.92, 83.96, and 83.97 from clinical pathway (CP) 89.1, CP 90.1, and CP 91, respectively, although they were reclassified as codes for completing paths. In 2022, through concerted efforts and support from relevant institutions, we successfully reinstated these codes as therapeutic procedures for CP 89.1, CP 90.1, and CP 91. Additionally, new codes were introduced in the CP for laboratory and instrumental research, and some code contents were revised. Currently, several research activities lack codes. To address this issue, we propose collaborating with the Ministry of Health and the National Center of Public Health and Analyses to establish a joint working group to create and implement codes with relevant content. A new code, CP 89.3 for systemic diseases with a severe course, was established. Two new commissions were formed to implement outpatient procedure (OP) 38.

In negotiations in 2023, we successfully negotiated a 10-20% price increase for CP 89.1, CP 90.1, CP 91, and a 40% increase for CP 89.3, which will cost BGN 1,400. Additionally, three new commissions under OP 38 will be established at UMHAT „Burgas“, UMHAT „Palmed“, and UMHAT „Heart and Brain“ in Pleven. We secured the performance of OP 42 in diagnostic consultation centers and medical centers (MC), with a set price of BGN 150. At the 2022 General Assembly, it was resolved that patients receiving costly treatment should be examined by specialists in the OC, who will prescribe medication under the conditions of OP 42. Under current regulations, this practice is not permitted, as patients can only be examined either according to the general protocol for all diseases or the OP 42 protocol, which excludes the use of financial resources for other treatments.

Expert meetings occupies a very important place in the work of BSR. For the period 2019-2023, 13 expert meetings were held. The leading rheumatologists of the country participated in them and all current problems in rheumatology and new therapeutic strategies were discussed. On the basis of the decisions made, motivated proposals were made to the Ministry of Health and the NHIF to improve the rheumatology activity, as well as proposals for changes and additions to the existing consensuses and recommendations. The chairman of the BSR took part in the expert councils dedicated to the vaccination of immunocompromised patients, rare diseases and the use of off-label medicinal products.

The NHIF's requirements for treatment with expensive medications have been revised or augmented four times, driven by factors such as the introduction of new pharmaceuticals, updates to the Summary of Product Characteristics (SPC), and changes in national and international guidelines and recommendations. These requirements are well-balanced and align with contemporary approaches to treating rheumatic diseases. They avoid unnecessary administrative hurdles and facilitate the timely inclusion of new therapeutic options. Consequently, Bulgarian rheumatologists and patients gain access to the latest drug molecules approved by the EMA and FDA within one to two years. Notably, all biological agents and JAK inhibitors approved by the EMA are registered in

the Republic of Bulgaria, with the exception of abatacept and anakinra.

The use of biological medications in Bulgaria began in 2003, when six rheumatoid arthritis (RA) patients were treated with Remicade. Subsequently, the use of biologic agents and later JAK inhibitors became commonplace in rheumatology practice. As of December 31, 2023, a total of 12,241 patients (14.1% of the population) with inflammatory joint diseases are undergoing treatment in the country. Among them, 4,784 (15.9%) are being treated for RA, 4,730 (17.5%) for ankylosing spondylitis (AS), and 2,727 (9.1%) for psoriatic arthritis (PsA). The widespread adoption of treatment with biologic and targeted synthetic disease-modifying antirheumatic drugs (b/tsDMARDs) is notable, reflecting the absence of arbitrary administrative constraints on its use.

### SCIENTIFIC PRODUCTION AND INTERNATIONAL ACTIVITY OF BSR

Currently, there are 9 professors and 7 associate professors specializing in rheumatology. Over the reporting period, three colleagues were appointed as professors and three as associate professors. Additionally, seventeen doctors successfully defended their dissertations, earning the title of PhD, while three attained the academic rank of Doctor of Medical Sciences (DMS). Although academic develop-

**Table 3. Number of RA, PsA and AS patients treated with b/tsDMARDs**

| Rheuma Dec.2023 |    |      |                |     |      |                |    |      |
|-----------------|----|------|----------------|-----|------|----------------|----|------|
| Humira          | RA | 742  | Humira         | PsA | 577  | Humira         | AS | 1365 |
| Amgevita        | RA | -    | Amgevita       | PsA | -    | Amgevita       | AS | -    |
| Hyrimoz         | RA | 61   | Hyrimoz        | PsA | 23   | Hyrimoz        | AS | 52   |
| Hulio           | RA | -    | Hulio          | PsA | -    | Hulio          | AS | -    |
| Hukyndra        | RA | 27   | Hukyndra       | PsA | 18   | Hukyndra       | AS | 34   |
| Enbrel          | RA | 530  | Enbrel         | PsA | 250  | Enbrel         | AS | 797  |
| Erelzi          | RA | 14   | Erelzi         | PsA | 7    | Erelzi         | AS | 15   |
| Simponi         | RA | 62   | Simponi        | PsA | 49   | Simponi        | AS | 233  |
| Cimzia          | RA | 256  | Cimzia         | PsA | 86   | Cimzia         | AS | 360  |
| RoActemra       | RA | 1255 | Rinvoq         | PsA | 323  | Rinvoq         | AS | 590  |
| Mabthera        | RA | -    | Tremfya        | PsA | 284  | Xeljanz        | AS | 33   |
| Remsima         | RA | 2    | Cosentyx       | PsA | 603  | Taltz          | AS | 56   |
| Remicade (J-C)  | RA | 2    | Stelara        | PsA | 67   | Inflectra      | AS | 48   |
| Inflectra       | RA | 12   | Inflectra      | PsA | 12   | Remsima        | AS | 5    |
| Olumiant        | RA | 157  | Remsima        | PsA | 4    | Remicade (J-C) | AS | 23   |
| Rinvoq          | RA | 1123 | Remicade (J-C) | PsA | 8    | Cosentyx       | AS | 1119 |
| Jyseleca        | RA | -    | Skyrizi        | PsA | 180  | All            | AS | 4730 |
| Xeljanz         | RA | 524  | Taltz          | PsA | 131  |                |    |      |
| Rixathon        | RA | 17   | Xeljanz        | PsA | 105  |                |    |      |
| All             | RA | 4784 | All            | PsA | 2727 | All            | AS | 4730 |

ment is primarily overseen by MU, the data presented underscores the significant scientific research conducted within the rheumatology community. This is evidenced by the active participation of Bulgarian rheumatologists in numerous esteemed international forums, predominantly through poster presentations and to a lesser extent through oral presentations and lectures.

Dr. Stoilov participate in the Education Committee of EULAR, where he is tasked with enhancing the quality and endorsement of courses conducted under the association's auspices.

**The following experts participated in EULAR working groups to develop and update various recommendations:**

Prof. Ts. Georgiev and Dr. V. Boyadzhieva – “EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis: 2023 update” [7]

N. Stoilov – “EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2022 update” [8]

N. Stoilov – “2022 EULAR points to consider for remote care in rheumatic and musculoskeletal diseases” [9]

V. Boyadzhieva – “2023 Update of the EULAR recommendations for the treatment of systemic sclerosis” [10]

V. Boyadzhieva – “Update of the EULAR points to consider for use of antirheumatic drugs in reproduction, pregnancy and lactation”

V. Boyadzhieva – “Update of the EULAR recommendations for physical activity in people with inflammatory arthritis and osteoarthritis”.

S. Lambova – “Reporting items for capillaroscopy in clinical research on musculoskeletal diseases: a systematic review and international Delphi consensus” [11]

R. Karalilova – “Standardization of interstitial lung disease assessment by ultrasound: results from a Delphi process and web-reliability exercise by the OMERACT ultrasound working group” [12]

R. Karalilova – “The provisional OMERACT ultrasonography score for giant cell arteritis” [13]

M. Ivanova is a full member of the ASAS working group.

A. Batalov, R. Karalilova, Z. Batalov participate in the EULAR – OMERACT working group.

Two rheumatologists – N. Stoilov and V. Boyadzhieva, participate in the working group of the international project COST – European Network on

Optimizing Treatment with Therapeutic Antibodies in chronic inflammatory diseases (ENOTTA).

R. Karalilova participates in the working group on the international project COST-

Building an open European Network on Osteoarthritis research (NetwOArk)

R. Shumnalieva participates in the COVAD working group at the University of Manchester.

S. Vladeva – Chairman of the Osteoporosis Prevention Working Group at the Health Care Department of the University of Thrace, Stara Zagora. The national model for FRAX has been created, in collaboration with the University of Sheffield. From 2022, BG FRAX is available on the website of this university and the international FRAX.

Participants in the working group are: Elena Bishov, Martin Nikolov, Asen Zlatarov.

The Journal of Rheumatology has significantly enhanced the quality of its published content and has become an esteemed platform for scholarly contributions. It is published in both Bulgarian and English languages and operates on a modern electronic platform developed by Ts. Georgiev. The journal has acquired an impact factor and is indexed in global databases. Several articles published in the journal have garnered citations in international and Bulgarian scientific literature. Presently, the Rheumatology journal is recognized as one of Bulgaria's prestigious scientific publications, boasting an Impact Score of 2.91 and an h-index of 34.

Numerous articles authored by Bulgarian rheumatologists have been featured in international journals, some with notable Impact Factors. The prolific journalistic endeavors of these colleagues have not gone unnoticed. Ts. Georgiev was appointed as the Deputy Chief Editor, while M. Ivanova and A. Batalov were selected as members of the editorial board of Rheumatology International. Additionally, M. Ivanova serves on the editorial boards of two other international journals, and A. Batalov contributes to one more. V. Boyadzhieva was named a member of the editorial boards of two international journals: *Frontiers in Pharmacology* and *Frontiers in Pediatrics*. Noteworthy contributions in peer review during the reporting period were made by Ts. Georgiev, V. Boyadzhieva, A. Batalov, M. Ivanova, Dacheva, Angelov, and S. Lambova, with over 100 reviews each, while N. Stoilov and R. Karalilova contributed over 50 reviews each.

**Problems to solve**

- Enhancing specialization planning.
- Optimizing the rheumatology network staffing nationwide.
- Improving remuneration for both hospital-based services and outpatient care.

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