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EULAR 'POINTS TO CONSIDER' FOR THE CONDUCTION OF WORKFORCE REQUIREMENT STUDIES IN RHEUMATOLOGY

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Background: EULAR has developed several recommendations and strategies for early referral, diagnosis and treatment of rheumatic diseases. These strategies, however, can only be implemented if sufficient manpower is available. An estimation of how many rheumatologists are needed to meet current and future population needs must be provided in order to counsel health care planners and decision makers. Current methods used for forecasting manpower are disparate, as are the variables incorporated into workforce projection models. Consequently, projections for the need of rheumatologists may vary by a factor of five between studies.⁽¹⁾

Table. EULAR points to consider for the conduction of workforce requirement studies in rheumatology

No	Recommendation	LoA	LoE*
1	Workforce models should integrate supply, demand and needs of the respective geopolitical entity (e.g. municipality, region, state, country), and should express results as full time equivalents and as number of rheumatologists.	9.5 (0.9) 95%≥8	5
2	Workforce models should provide projections over a period of 5-15 years.	9.1 (1.1) 90%≥8	5
3	Workforce models should not assume a current balance between supply and need.	9.6 (0.7) 100%≥8	5
4	Workforce models should, where possible, rely on several data sources and include uncertainty analyses.	9.8 (0.4) 100%≥8	5
5	Workforce models should be regularly updated; updates should include an analysis of the actual performance (i.e. prediction validity) of the previous model.	9.5 (0.6) 100%≥8	5
6	Workforce needs for patient care should be based on the prevalence and referral rates of diseases managed by rheumatologists as well as on an estimation of time needed per patient.	9.7 (0.7) 100%≥8	5
7	Workforce needs for patient care should consider current and future demographics, sociocultural characteristics of the population and disease patterns.	9.5 (0.9) 95%≥8	5
8	Workforce needs and supply should consider work outside rheumatology patient care (e.g. administrative tasks, research, teaching, non-rheumatologic disease management), as well as patient care performed by other health professionals in rheumatology.	9.4 (0.9) 95%≥8	5
9	Workforce supply should account for demographic composition of rheumatologists, the number of rheumatologists entering and leaving the workforce, and generational attitudes of rheumatologists towards scope of practice and work-life balance.	9.1 (2.3) 85%≥8	5
10	Workforce models should consider the effects of medical developments, including new technologies, medications, artificial intelligence and e-health, on demand and supply.	9.4 (1.1) 85%≥8	5

Numbers in column 'LoA' indicate the mean and SD (in parentheses) of the LoA, as well as the percentage of task force members with an agreement ≥8.

LoA, Level of agreement; LoE, level of evidence according to Oxford Centre for Evidence-Based Medicine 2011 levels of evidence

*study design does not correspond to any of the levels of the OCEBM

Objectives: The aim of this project was to develop EULAR points to consider on the methodology of future workforce calculation models for rheumatologists in order to produce reliable, standardised and realistic estimates.

Methods: The EULAR Standardised Operating Procedures were followed. A systematic literature review (SLR) was conducted to retrieve workforce models in rheumatology and other specialties. The task force consisted of 20 experts (rheumatologists, health professionals and representatives from PARE) from 11 EULAR countries and the USA. Points to consider were based on expert opinion informed by the SLR, followed by group discussions with consensus obtained through informal voting. The level of agreement with the recommendations was voted anonymously.

Results: A total of 10 points to consider were formulated (table 1). The task force recommends models integrating supply (=workforce available to rheumatology), demand (=health services requested by the population) and needs (=health services that are considered appropriate to serve the population). Projections of workforce requirements should consider all factors relevant for current and future workload in and outside rheumatology patient care. Forecasts of workforce supply should consider demography and attrition of rheumatologists, as well as the effects of new developments in health care.

Conclusions: These are the first EULAR points to consider providing guidance on the methodology and the parameters to be applied in future national and international workforce requirement studies in rheumatology.

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THE POTENTIAL USES OF AN INFODEMOLOGY APPROACH FOR HEALTH-CARE SERVICES IN RHEUMATOLOGY

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Background: Infodemiology can help achieve the patient-centred care model. It is the science of determinants and distribution of information on electronic media. It can provide data to develop, collect, and evaluate metrics and indicators for information and communication patterns that are related to epidemiologic data or are useful for public health, policy making or even clinical practice. Google Trends (GTr) and Google AdWords (GAd) are two useful tools to assess demand-based infodemiology indicators. Its use is scanty in rheumatology.

Objectives: To illustrate the potential use of GTr and GAd, we present three case-studies: A) What search terms related to rheumatology are typed by people in Mexico (MX), the United States of America (USA), and Canada (CAN)? B) What is the search volume for specific DMARDs typed by people in MX, USA, and CAN?, and C) What is the positioning of the search term "arthritis" compared with two non-rheumatic diseases ("hepatitis C", "breast cancer") among MX, USA, and CAN?

Methods: GTr output is a relative search volume (the biggest volume is transformed to 100 and the rest are given as a proportion of it) and GAd output is the average number of searches per unit of time. We ran 3 different queries (MX, USA, CAN) for each case-study using GTr and GAd for years 2015–2017. Results were exported to a database for further analysis. Search volumes were adjusted per country's population and expressed as crude rates (searches per million; spm) when appropriate.

Results: To look for information on "rheumatology" people used 298 (MX), 654 (USA), and 637 (CAN) associated terms. "Arthritis" had 656, 550, and 548 associated terms in MX, USA, and CAN, respectively. For "arthritis treatment" there were 635, 569, and 569 associated terms in MX, USA, and CAN, respectively. Regarding DMARDs, there were 1,053 million searches during this period: methotrexate (28.5%), adalimumab (15.6%), rituximab (10.4%), and infliximab and etanercept (8.6% each). However, for every b- or tsDMARD search, there were fourteen (USA, CAN) to fifty-eight (MX) "turmeric" searches for the "treatment of arthritis". In 2015, search volume for "arthritis" was 120, 638, and 668 spm in MX, USA, and CAN, respectively. For 2016 and 2017 figures remained similar for MX and CAN, but showed a 12% increase for the USA. In MX, "hepatitis C" had 114 spm in 2015, with a 32% increase by 2017. The USA and CAN had 1131 and 648 spm in 2015, with a 5% increase and an 8% decrease by 2017, respectively. For "breast cancer", search rates were 4 times higher than for "arthritis" for the three years in MX, with an average increase of 250% each October, concurrent with public awareness campaigns. In the USA and CAN, search volume was 36% and 56% less than that for "arthritis", with a 57% and 33% increase each October, respectively.

Conclusions: Infodemiology can have an added value to traditional research designs. It can serve for diverse purposes, such as assessing the penetration and impact of public awareness campaigns, patients' perceived needs, the appearance of new remedies, the positioning of diseases, disease-related cultural differences in ethnic groups, people perceptions on specific health-care systems, etc.

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