arthritis (PsA). There is plenty of evidence that early diagnosis of PsA remains suboptimal leading to poorer outcomes.

Objectives: The objective of this proof-of-concept study was to utilise community pharmacists in collaboration with the local Rheumatology service to screen patients with psoriasis aiming to achieve earlier diagnosis of PsA.

Methods: A pilot site was identified including a community pharmacy with a neighbouring GP surgery. An educational session was organised with the team to help them understand the need for the project. Logistics were finalised and a dedicated teaching was delivered covering PsA and Psoriasis Epidemiology Screening Tool (PEST) tool. PEST was chosen for its high sensitivity and specificity and positive NICE recommendation.

The dispensing personnel highlighted all patients requesting prescribed standard psoriasis-treating topical applications to the pharmacists. They confirmed the history of psoriasis with the patients, ensured the absence of a formal diagnosis of arthritis and offered the PEST questionnaire. Those who scored positive were signposted to their GPs for further consultation. The data was gathered anonymously and analysed to assess the utility of the service.

Results: 37 patients were identified during the 12-week proof of concept phase. 24 (65%) participants were women. Median age of the group was 48 years (range 19–73). 23/37 (62%) were white Caucasians with eight Asian and three each of Afro-Caribbean or Mixed race background. 18/37 (48%) answered yes to three or more of five-question PEST tool thereby scoring positive. Ten (27%) replies were negative and another nine (24%) declined to participate. No reasons were offered for not filling in the questionnaire. Two of the positive patients have since been reviewed by GP and referred to Rheumatology for further evaluation.

Conclusions: To our knowledge, this is the first study ever conducted utilising community pharmacists to employ a screening questionnaire to help early identification of possible PsA patients. This novel approach of involving community pharmacy helps explore new and proactive ways of early detection of psoriasis patients at risk of PsA and challenges the traditional model of confining the screening process to GPs in primary care. Early findings have already identified nearly half of this cohort with hitherto potentially undiagnosed PsA. This pioneering development highlights a new model of care streamlining the diagnostic pathway thereby providing better quality of care. Considering over 90% of psoriasis is managed in primary care, it would also encourage quicker assessment by a rheumatologist without burdening the already busy GP practices. Focused strategy and better utilisation of community pharmacists can be pivotal to providing better care for PsA patients in the long term.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.1305

FRI0631 **WORKFORCE REQUIREMENTS IN RHEUMATOLOGY: A SYSTEMATIC LITERATURE REVIEW INFORMING THE DEVELOPMENT OF A WORKFORCE PREDICTION QUALITY APPRAISAL TOOL**

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Background: Workforce requirement studies should be conducted in order to ensure the right number of people with the right skills, in the right place at the right time to deliver organizational objectives.

Objectives: As part of the EULAR project to develop points to consider for the conduction of workforce studies in rheumatology, we reviewed the literature on workforce prediction with the aim to develop a workforce prediction quality appraisal tool and apply it to existing studies in rheumatology.

Methods: Two literature searches were performed in Ovid MEDLINE, EMBASE, CINAHL, Cochrane Library and the grey literature comprising: (1) an update of a previous systematic literature review (SLR) of workforce prediction studies in rheumatology[1] and (2) a hierarchical SLR of workforce prediction studies in other medical fields. We extracted data on type of model used, details on need, demand and supply factors considered in the model, and other relevant aspects such as regional heterogeneity or uncertainty analyses. Based on the results, key

general as well as specific need/demand, and supply factors for workforce calculation in rheumatology were identified and each factor was assigned a quality level (low, moderate, high). The quality appraisal tool was applied to the existing workforce modeling studies in rheumatology.

Results: Data was extracted from 14 original workforce prediction studies in rheumatology and 10 SLRs in other fields. Studies used a variety of prediction models based on a heterogeneous set of need and/or demand and/or supply factors. While only a few studies attempted to empirically validate the prediction quality of the model (n=3), the consensus was that an integrated model including all these factors is expected to have the highest validity. Based on the different factors considered in existing studies, our quality appraisal tool included the three groups of factors: general factors (e.g. type of the model, stakeholder involvement), need/demand factors (e.g. scope of diseases covered by rheumatologists, morbidity, demography) and supply factors (e.g. time dedicated to clinical work, entry to profession, demographic composition of workforce) (table 1). The majority of studies scored low or moderate on most of the factors.

Table 1 Workforce prediction quality appraisal tool

Factor*	Evidence grading	N of studies
General factors		
Type of model	Low: model that was only based on demand or need or supply factors Moderate: integrated model that considered demand, need and supply (supply (s)=demand (d) at baseline) High: integrated model that considered demand, need and supply (s<=>d at baseline)	N=4 N=6 N=4
Regional heterogeneity	Low: regional heterogeneity was not considered Moderate: calculations were performed on national level but anticipated regional discrepancies are discussed High: calculations took into account relevant regional profile of the country	N=8 N=4 N=2
Need/demand factors		
Scope of diseases covered by rheumatology specialty	Low: either not listed or not deemed representative (e.g. insufficient number of disease groups, unjustified author's estimate etc.) Moderate: stated but the probability that they are representative is limited High: stated and the probability that they are representative is high	N=3 N=5 N=6
Projection of population development	Low: not considered or only size of population is included Moderate: age or/and sex structure and/or other factors were included but using single data source and not relying on published statistics High: age or/and sex structure and/or other factors were included using more than one source and relying on published statistics or national population projections	N=6 N=8 N=0
Supply factors		
Time spent on clinical (rheumatologic) care	Low: not considered Moderate: % of time dedicated to clinical duties was defined without detailed estimation of number, duration, and type of visit OR % of time dedicated to clinical duties was calculated through estimating the number, duration and type of visits, but using single data source High: % of time dedicated to clinical duties was calculated through estimating the number, duration and type of visits, using more than one published data source	N=4 N=10 N=0
Demographic trends in workforce	Low: not considered Moderate: one demographic trend (e.g. ageing, feminization, millennial trend) was considered High: more than one demographic trends were considered	N=6 N=3 N=5

* 6 out of the 21 factors of the tool are depicted in this excerpt

Conclusions: The existing evidence on workforce prediction in rheumatology and other fields is scarce, heterogeneous and of low or moderate quality. The workforce prediction quality appraisal tool will enable future evaluation of workforce prediction studies. This review informs the EULAR points to consider for the conduction of workforce requirement studies in rheumatology.

REFERENCE:

1. Dejaco C, et al. Arthritis Care Res (Hoboken) 2016.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2228

FRI0632 **IMPACT OF A TIGHT CONTROL MULTIDISCIPLINARY RHEUMATOLOGY PROGRAM ON THE QUALITY OF LIFE OF PATIENTS WITH AUTOIMMUNE DISEASES IN COLOMBIA**

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Background: Autoimmune diseases are chronic inflammatory pathologies of complex etiology and variable clinical expression that usually affect young individuals, generating chronic pain and altering their functionality. Therefore, one of the mainstays of the treatment is to improve the quality of life (QoL) of these patients

Objectives: To determine the impact of a tight control multidisciplinary rheumatology program in the QoL of patients with rheumatoid arthritis (RA), Systemic lupus erythematosus (SLE) and seronegative spondyloarthropathies (SpA).

Methods: A analytical quasi-experimental study was conducted were 3812 patients with RA, 590 patients with SLE and 605 patients with SpA were included and followed between February 2015 and December 2016. Two separated measurements of QoL were developed through the EuroQol Five Dimensions Questionnaire (EQ-5D) by time trade-off (TTO) valuation technique and the visual analogue scale valuation technique (EQ-VAS). Sociodemographic characteristics

were analyzed with univariate statistic. The impact on QoL was determined by McNemar test and repeated measures analysis of variance (rANOVA)

Results: The most affected dimensions of the EQ-5D were pain/discomfort and anxiety/depression, while the least affected was self-care. When comparing each dimension before and after the entry to the tight control program, a significant increase in the proportion of patients that perceive level 1 for each aspect evaluated was found. In addition, significant improvement was found in the global EQ-VAS (table 1)

Table 1 Percentage of the levels of EuroQol by dimension according to the diagnosis

		RA N=3812		SLE N=590		SpA N=605		Total N=5007		P- Value
		Initial (%)	Final (%)	Initial (%)	Final (%)	Initial (%)	Final (%)	Initial (%)	Final (%)	
Mobility	1	43	55,7	59,8	45,4	56,5	65,9	46,1	52,6	0,003
	2	54,9	42,1	38,8	52,8	41,5	32,4	53,4	46,4	
	3	2	2,2	1,4	1,8	2	1,7	0,5	1	
Self-care	1	61	69,1	76,9	62,7	70,1	79,2	59	67,4	0,001
	2	37,8	29,4	21,9	36,2	28,5	19,5	40,3	32,2	
	3	1,1	1,5	1,2	1,1	1,4	1,4	0,7	0,3	
Usual activities	1	48	55,8	61,4	49,7	56,8	68	48,6	52,2	0,001
	2	47,9	41,3	35,8	46,5	40,8	30	47,9	45,5	
	3	4,1	2,9	2,9	3,9	2,7	2	3,5	2,3	
Pain/discomfort	1	23,3	31,7	33,2	24	32	40,3	19,7	25,8	0,002
	2	53,3	54,4	50,7	53,4	54,1	48,6	56,9	57,2	
	3	23,4	13,9	16,1	22,5	14	11	23,5	17	
Anxiety/depression	1	56,5	65,6	53,9	56,1	65	66,1	56,5	60,7	0,001
	2	33,4	27,5	35,9	33,8	27,8	26,3	34,2	31,7	
	3	10,2	7	10,2	10,1	7,1	7,6	9,3	7,6	
Global VAS mean (SD)		68,8 (19,8)	70,4 (22,6)	72 (19,8)	68,8 (19,9)	70,5 (22,2)	75 (18,6)	65,7 (20,5)	65,9 (21)	0,001

Significant statistical differences were found for all the dimensions in each pathology (initial vs final) except:

¹ Self-care in SLE ($p=0,719$)

² Usual activities in SpA ($p=0,337$)

³ Anxiety/depression in SpA ($p=0,27$)

⁴ Global VAS in SpA ($p=0,889$)

Conclusions: The tight control multidisciplinary rheumatology program is an efficient strategy to improve the QoL and the health perception of patients with chronic autoimmune diseases which impacts on the functionality, performance of everyday activities and productivity

REFERENCE:

- Wang L, Wang FS, Gershwin ME. Human autoimmune diseases: A comprehensive update. *Journal of Internal Medicine* 2015;278(2015):369–395. doi:10.1111/joim.12395

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5916

FRI0633

HOW DO WE IMPLEMENT THE EULAR RECOMMENDATION THAT RHEUMATOLOGISTS CAN SEE EARLY ARTHRITIS PATIENTS WITHIN SIX WEEKS AFTER SYMPTOM ONSET? A FIVE-YEAR COMPARATIVE STUDY OF AN EARLY ARTHRITIS RECOGNITION CLINIC.

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Background: Early treatment of inflammatory arthritis (IA) associates with improved outcomes. Therefore, the first recommendation in the 2016 update of the EULAR guidelines for management of early IA states that patients presenting with IA should be seen by a rheumatologist ≤ 6 weeks. Data on how to implement this recommendation are lacking. A screening clinic situated in between primary and secondary care, the Early Arthritis Recognition Clinic (EARC), has previously shown to increase early identification of rheumatoid arthritis patients. However, it is unknown if this effect is sustained when applied for several years and if this approach is of added value to identify patients within the 6-week limit set by EULAR.

Objectives: To study if an EARC approach can lead to sustained early identification of patients with IA (as compared to regular referral to our Early Arthritis Clinic (EAC)) and to determine the efficacy to identify patients ≤ 6 weeks after symptom onset.

Methods: To promote early recognition of IA, the EARC was initiated in September 2010 in the Netherlands. General practitioners (GPs) were instructed to refer to this screening clinic without a scheduled appointment if they were unsure about the presence of IA (instead of a 'wait-and-see' approach or performing additional tests). At the EARC, patients were seen for a 5-minute visit by an experienced rheumatologist who performed a full 66-joint examination for clinical synovitis. GPs can also refer directly to the EAC, where patients are seen < 2 weeks' time. Thus, GPs in our region can refer directly for a full visit in secondary care, or to a short visit to a screening clinic that is situated in between primary and secondary care. Patients identified with IA at the EARC or after (direct) referral to the EAC between September 2010 and December 2014 were compared for symptom duration at IA identification.

Results: Of the 1,151 patients visiting the EARC, 475 (41%) were diagnosed with IA. Firstly, proportions of patients with IA at the EARC were studied per year. These remained stable over time: 45% in 2010, 39% in 2011, 45% in 2012, 42% in 2013 and 36% in 2014. Clinical characteristics of these patients were similar over time. In the same period 675 referred patients were diagnosed with IA at the EAC; these were compared to the 475 IA patients that were identified via the EARC. Demographic characteristics were similar. However, median symptom duration of the IA patients in the EARC-group versus the EAC-group at identification of IA were 10.7 vs 17.0 weeks in 2010 ($p<0.0001$), 7.3 vs 13.7 weeks in 2011 ($p=0.0001$), 6.3 vs 9.8 weeks in 2012 ($p=0.056$), 5.6 vs 10.7 weeks in 2013 ($p=0.012$) and 5.7 vs 8.3 weeks in 2014 ($p=0.060$). Proportions of patients with IA seen by a rheumatologist ≤ 6 weeks in the EARC-group versus the EAC-group were: 34% vs 19% in 2010, 43% vs 20% in 2011, 43% vs 33% in 2012, 48% vs 30% in 2013 and 44% vs 33% in 2014.

Conclusions: A screening clinic in between primary and secondary care has sustainable benefit with regards to early identification of inflammatory arthritis and allows $> 40\%$ of patients to be identified within the timelines as recommended by EULAR.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4613

FRI0634

COST SAVINGS OF USING HLA-B*27 TAG SNP GENOTYPING TO DETERMINE HLA-B*27 STATUS IN A CANADIAN POPULATION

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Background: HLA-B*27 is a useful genetic marker for screening axSpA [1,2] to determine who can benefit from rheumatologic evaluation in a primary care setting [3]. Currently, entire HLA-B locus tests are the gold standard for determining HLA-B*27 status but they are expensive. With a sensitivity of 97.6%, the cheaper HLA-B*27 tag-SNP assay could offer a less expensive yet rigorous testing option. Specifically, the HLA-B*27 tag-SNP assay could be ordered as first-line screening test for patients with inflammatory axial pain by primary care doctors, with the HLA-B locus assay only requested by rheumatologists for patients with a negative tag-SNP test result but a strong clinical suspicion of HLA-B*27 positivity. Economic impact of this hybrid testing strategy is not yet established.

Objectives: To determine the cost savings of using the hybrid testing strategy instead of giving HLA-B locus assay to all patients with inflammatory axial pain.

Methods: We estimated the total cost of using the HLA-B*27 tagSNP assay for a sample of 510 patients who underwent the test between August 1, 2016 and July 31, 2017 in Newfoundland and Labrador, Canada. We compared this cost with the cost that would have been incurred if these same patients were instead tested with the HLA-B locus test.

Results: Total cost of testing 510 patients with HLA-B locus test was \$30,557 at an average cost of \$60 per test. Cost of testing these patients with HLA-B*27 tagSNP assay was \$1,673 (with average cost per test of \$3.28). Among those who tested negative on the HLA-B*27 tagSNP assay, 2.3% (~10 patients) would be falsely diagnosed negative. The HLA-B locus test would be ordered in half of these patients after medical history is reviewed by a rheumatologist. Hence, total costs of testing 510 patients with the HLA-B*27 tagSNP assay were \$1,963. Consequently, cost savings from using HLA-B*27 tagSNP assay instead of HLA-B locus tests were \$28,594 for this sample of 510 patients. This amounted to a 94% reduction in costs relative to the scenario where all patients are tested with HLA-B locus tests.

Conclusions: Screening for HLA-B*27 status among axSpA patients of Caucasian descent with HLA-B*27 tag-SNP testing with the gold standard HLA-B locus test only requested for those in whom such need is determined by rheumatologists can result in significant cost savings relative to giving HLA-B locus tests to all patients with inflammatory axial pain.

Acknowledgements: 1. Robinson PC, Brown MA. *Mol Immunol*. 2014;57:2–11.