(15.7%) patients had a revised diagnosis at 1 year-follow-up, and 7 (4%) vs. 12 (11%) were re-referred, respectively. For demographics, clinical, US, and laboratory characteristics see Table 1 where median values and inter-quartile range (IQR) for all parameters.

Conclusion: Adding routine US examination to the first clinical visit reduces time to diagnosis markedly, lowers the number of clinical visits needed thereby reducing the time patients spent away from work, and freeing time for visits in the FTC to be used for other patients

Table 1.

		Comparative cohort	US cohort	P
		(n=109)	(n=163)	
Age	Median [IQR]	55.5 [42;69]	53 [40;67]	0.44
	Mean $\pm$ SD	54.7 $\pm$ 16.1	53.2 $\pm$ 17.2	
Time to diagnosis days	Median [IQR]	12.4 [10;42]	0 [0;25]	<0.01
	Mean $\pm$ SD	30.6 $\pm$ 32.2	12.4 $\pm$ 17.3	
Visits in FTC	Median [IQR]	3 [2;3]	2 [1;2]	<0.01
	Mean $\pm$ SD	2.8 $\pm$ 1.1	2.1 $\pm$ 1.3	
US assessments in the FTC	Median [IQR]	1 [0;1]	1 [1;1]	<0.01
	Mean $\pm$ SD	0.8 $\pm$ 0.7	1.1 $\pm$ 0.27	
Swollen joint count (0-28)	Median [IQR]	0 [0;1]	0 [0;2]	0.19
	Mean $\pm$ SD	1.1 $\pm$ 2.1	1.8 $\pm$ 3.1	
Tender joint count (0-28)	Median [IQR]	1 [0;5]	1 [0;5]	0.06
	Mean $\pm$ SD	3.1 $\pm$ 3.7	3.1 $\pm$ 5.2	
Grey-scale US sum score (0-72)*	Median [IQR]	1 [0;3]	4 [1;8]	<0.01
	Mean $\pm$ SD	2.8 $\pm$ 5.9	6.3 $\pm$ 7.9	
Colour Doppler US sum score (0-36)*	Median [IQR]	0 [0;0]	0 [0;2]	<0.01
	Mean $\pm$ SD	1.2 $\pm$ 4.0	2.8 $\pm$ 5.9	
CRP (mg/l)	Median [IQR]	4 [1;16.5]	3 [1.75;12]	0.42
	Mean $\pm$ SD	13.4 $\pm$ 23.1	9.6 $\pm$ 14.6	

P, p-value for Mann-Whitney U test for comparing independent data.* US sum score for both hands and feet.

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POS0261 DIAGNOSTIC PERFORMANCE AND CLINICAL UTILITY OF TWO REFERRAL RULES FOR INFLAMMATORY ARTHRITIS

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Background: The Rotterdam Early Arthritis Cohort (REACH) rule [1] and Clinical Arthritis RuE (CARE) [2] are both evidence-based and easy-to-use methods developed to identify the presence of inflammatory arthritis (IA) in patients suspected by their general practitioner (GP). However, the clinical utility of both models in daily clinical practice in an independent primary care setting has not yet been established. While developed for recognizing IA, we believe that it is also important that the broader spectrum of inflammatory rheumatic diseases (IRDs) is correctly classified from primary care, to facilitate appropriate referral towards outpatient rheumatology clinics.

Objectives: The primary objective was to determine the diagnostic performance and clinical utility of the REACH and CARE referral rules in identifying IA in an independent population of unselected suspected patients from primary care. Secondly we will assess the diagnostic performance and clinical utility of both models in identifying IRDs.

Methods: This prospective observational diagnostic study consisted of adults newly suspected by their GP for the need of referral to the rheumatology outpatient clinic of the Maasstad Hospital in Rotterdam. Primary outcome was IA, consisting of rheumatoid arthritis, axial spondylitis and psoriatic arthritis. Secondary outcome was IRD, defined as IA plus arthritis in systemic disorders such as systemic lupus erythematosus, systemic sclerosis and morbus sjögren. Rheumatologist diagnosis was used as gold standard. To evaluate the clinical performance of the REACH and CARE referral rules in this population, diagnostic accuracy measures were investigated using the Youden index (J) [3]. Moreover, a

net benefit approach [4] was used to determine clinical utility of both rules when compared to usual care.

Results: This study consisted of 250 patients (22.8% male) with a mean age of 50.8 years (SD 13.9 years). In total 42 (17%) patients were diagnosed with IA and 55 (22%) with an IRD. Figure 1 presents the diagnostic performance in IA (Figure 1A) and in IRD (Figure 1B). For the primary outcome, the REACH model shows an AUC of 0.72 (95% CI 0.64-0.80) and the optimal cut-off point is indicated (J). The CARE model shows an AUC of 0.82 (95% CI 0.75-0.88) and at J there is a somewhat higher sensitivity and specificity. When taking the broader spectrum of IRDs as outcome, the AUC was 0.66 (95% CI 0.58-0.74) for the REACH and 0.76 (95% CI 0.69-0.83) for the CARE model. The net benefit analysis with either IA or IRD as outcome showed that the CARE was of the highest clinical value when compared to usual care.

Figure 1: ROC curves; blue lines indicating the REACH model and red lines indicating the CARE model

Conclusion: Both the REACH and CARE model showed a good diagnostic performance for detecting IA in an independent population of unselected suspected patients from primary care. Although not specifically developed to recognize the entire spectrum of IRDs, the CARE shows a good performance in doing so. When evaluating clinical utility, we see that both rules have a net benefit in recognizing IA as well as IRDs compared to usual care, however the CARE shows superiority over the REACH. By using the CARE, over half of all suspected patients can be withheld from expensive outpatient rheumatology care, implied by the high specificity of 70%. These results support the idea that incorporating these easy-to-use methods into primary care could lead to providing patients the right care at the right place and improving value based health care.

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POS0262 IDENTIFYING EROSION DISEASE FROM RADIOLOGY REPORTS OF VETERANS WITH INFLAMMATORY ARTHRITIS USING NATURAL LANGUAGE PROCESSING

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Background: The presence of erosive disease influences diagnosis, management, and prognosis in inflammatory arthritis (IA). Research of IA in large datasets is limited by a lack of methods for identifying erosions.

Objectives: To develop methods for identifying articular erosions in radiology reports from veterans with IA.

Methods: Included veterans had ≥ 2 ICD codes for ankylosing spondylitis (AS), psoriatic arthritis (PsA), or rheumatoid arthritis (RA) between 2005- 2019, in Veterans Affairs Corporate Data Warehouse. Chart review & annotation of radiology notes produced the reference standard, & identified erosion terms that informed classification rule development. A rule-based natural language processing (NLP) model was created & revised in training snippets. The NLP method was validated in an independent reference sample of IA patients at the snippet & patient levels