and hospital organisation factors. Geographical Information Systems are used to display maps describing adjusted estimates of variation in outcomes across NHS CCG areas.

Variation in outcome of surgery across Clinical Commissioning Groups (2014-2016)

Results: 210,725 primary TKR/UKR were identified nested in 207 clinical commissioning group areas. 57% of patients were women, with an average age 70 years (SD ±9 years). Whilst we identified a number of factors that predicted outcomes of surgery (e.g. age, gender, co-morbidity, deprivation, baseline function, surgical volume, numbers of orthopaedic surgeons, beds, operating theatres), these factors did not explain the observed geographical variations in outcomes of surgery across CCGs. The absolute predicted change in OKS varied from 13.0 to 18.8, predicted 6-month complication rate from 2.9% to 5.8%, predicted revision from primary TKR/UKR undertaken in 2014-2016 0.7% to 1.8%, predicted mean length of stay 2.9 to 6.6 days, bed-day cost £4758 to £8693 (Figure).

Conclusion: We have identified potentially unwarranted variations in patient outcomes of knee replacement surgery. This variation cannot be explained by differences in patients case mix, surgical factors, or hospital organisational factors. This information is informative to patients in making a decision in where they have their surgery, and to commissioners in monitoring variations in outcomes of surgery.

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OP0307

STANDARDS OF CARE FOR RHEUMATOID ARTHRITIS: GAPS IN IMPLEMENTATION EXPERIENCED BY PATIENTS AND RHEUMATOLOGISTS ACROSS 33 EUROPEAN COUNTRIES

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Background: Eumusc.net, a EULAR and EU supported initiative (which took place from 2008 to 2013) aimed to raise and harmonize quality of care for patients with rheumatic and musculoskeletal diseases across European countries. As part of Eumusc.net, 16 user-focused standards of care (SoC) for rheumatoid arthritis (RA) were developed.

Objectives: To evaluate gaps in quality of care using the Eumusc.net SoCs among patients and rheumatologists across Europe and to investigate the contribution of individual- and country-level characteristics to care gaps

Methods: Fifty RA patients and 50 rheumatologists from each of 34 countries were invited to participate in a survey. For each SoC, levels of importance and care were rated for received by patients or provided by rheumatologists on a scale from 0 to 10 (=best). Care gaps were calculated as difference from the maximum score for care received multiplied by the score for importance of care [0 (no gap) - 100], and defined as 'problematic' when the gap was >30 and importance ≥6. Individual- and country-level (GDP in tertiles) determinants of care gaps were analysed in multilevel logistic regression models, with patients clustered in country of residence. For patients, individual factors included gender, age, disease duration (years), level of education (low, high), work status (retired, disabled, working, not working), literacy, patient organisation membership and overall health (0-10). For rheumatologists, individual factors were gender, age, years of experience and work setting (university hospital and non-university hospital/private practice).

Results: In total, 1,422 patients from 27 and 1,044 rheumatologists from 33 European countries, respectively, were included. Patients had a mean (SD) age of 57.2 (13.2) years and 74% were female. For rheumatologists, the mean age was 47.7 (10.5) and 53% were female. After ranking the SoCs on percentage of problematic gap, the 7 SoCs in the top 10-ranks for both patients and rheumatologists (Table) were: *diagnosis within 6 weeks, information about patient organisations, availability of treatment plan, receiving a schedule of regular assessment, vaccination-related information, information about adequate physical exercise and training on aids, devices and ergonomic principles*. The least frequent problematic SoC for both patients and rheumatologists was *adequate DMARD received* (6% and 3%).

Multilevel analyses revealed large variation across countries for patients (all models p<0.01) and for the majority of analyses for rheumatologists, despite adjustment for individual characteristics. In addition, patients with higher education and lower self-reported health experienced problematic gaps more frequently. Among rheumatologists, patterns in determinants across SoCs were less consistent. For about half of the SoCs, rheumatologists from lower GDP countries identified problematic gaps more often compared to those from medium or high GDP countries (see Table).

Table. Frequency and determinants of care gaps perceived by patients and rheumatologists (top-7 SoCs with highest % of respondents reporting a problematic gap)

SoC description	(rank)	% (n) of respondents indicating problematic gap**	Gender: fem vs male	Education: high vs low	Overall health	GDP: low vs high	GDP: medium vs high
Odds ratio from multilevel logistic regression (>1 indicates higher odds for problematic gap)							
Diagnosis within 6 weeks	Patient (1) Rheum (1)	50% (811) 57% (622)	ns ns	1.97* na	0.92* na	2.24* ns	ns
Info about relevant patient organisations and trusted sources	Patient (5) Rheum (2)	38% (587) 35% (362)	ns ns	1.44 na	0.88* na	na 4.71*	2.26*
Availability of a treatment plan	Patient (8) Rheum (9)	36% (587) 19% (205)	ns ns	2.18* na	0.83* na	ns ns	ns
Patients are informed about vaccination	Patient (6) Rheum (6)	37% (490) 24% (252)	ns ns	1.48* 0.52*	1.69* na	0.87* na	ns 4.81*
Schedule of regular assessment of disease received	Patient (9) Rheum (7)	36% (560) 22% (233)	ns ns	1.39* 0.67*	1.87* na	0.79* na	ns 2.47*
Info on adequate physical exercise	Patient (10) Rheum (8)	36% (563) 20% (216)	ns ns	1.45* na	1.56* na	0.88* na	ns ns
Training on aids, devices, and ergonomic principles	Patient (3) Rheum (4)	38% (521) 31% (324)	ns ns	na na	0.83* na	na 4.72*	ns 4.97*

SoC: Standard of Care; GDP: gross domestic product; rheum: rheumatologist; ns: not significant; na: not applicable; * p-value<0.05; ** data presented for only complete pairs (i.e. when both importance and level of implementation were rated by the respondent)

Conclusion: For most SoCs, problematic gaps were identified in essential aspects of RA care, and substantial differences across countries were observed.

In general, patients identified problematic gaps in SoCs more frequently than rheumatologists did. These findings can help to evaluate quality of care and to work towards improvement of care for RA patients in Europe.

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OP0308

QUALITY OF CARE PREDICTS OUTCOME IN SYSTEMIC LUPUS ERYTHEMATOSUS – CROSS SECTIONAL ANALYSIS OF A GERMAN LONG-TERM STUDY (LULA COHORT, 2011–2015)

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Background: Systemic lupus erythematosus (SLE) is a chronic disease, which is still associated with significant morbidity and mortality¹. Recommendations for the management of SLE patients exist²⁻⁵, but information on its implementation and the resulting impact on long-term outcome remain unclear.

Objectives: Our aim was to study the quality of SLE medical care in Germany to understand gaps and to analyze the association to long-term outcome parameters.

Methods: In the LuLa-study information on demographics, clinical and medical care parameters are assessed annually by self-reported questionnaires among a representative sample of SLE patients in Germany (LuLa cohort, n=572). In 2013 additional questions on the management of care, as mentioned in current guidelines and recommendations, were surveyed. Ten items predicting a good clinical care (quality measures) were evaluated and an overall score with a minimum of 0 points and a maximum of 10 points was calculated. The ten items are taking antimalarials, osteoporosis protection at a dose above 7.5mg prednisolone equivalent per day or taking ≤ 7.5mg per day, vaccination, blood pressure, fat metabolism counseling, urine examination and blood test once a year, treatment of comorbidity fat metabolism disorder, osteoporosis and hypertension. Health related quality of life (Short Form Survey, SF-12/36), damage (Brief Index of Lupus Damage, BILD) and disease activity (Systemic Lupus Activity Questionnaire, SLAQ) were chosen as relevant proxies for long-term outcome.

Using linear regression, we examined the relationship between the quality measures and outcome parameters, adjusted for age, disease duration and gender.

Results: 65.5% of the patients consulted a rheumatologist as a main contact for their disease. On average 6.1 points of the 10 quality measures were met (SD 1.7). The fulfillment of these quality measures varied between 22.8% (fat metabolism counseling) and 97.6% (osteoporosis protection at a dose above 7.5mg prednisolone equivalent per day or ≤ 7.5mg per day). Fulfilling more clinical care items in 2013 was predictive for high disease-related quality of life (SF-36, p=0.004), low progress in disease-related damage (BILD, p=0.048) and low disease activity (SLAQ, p=0.046) in the subsequent years.

Conclusion: Our study illustrates a strong link between the quality of care and important SLE outcome parameters: quality of life, disease-related damage and disease activity assessed by a self-reported questionnaire. Consistent considerations of these care parameters, which are recommended in several management guidelines, yield a positive effect on outcome. An interdisciplinary approach with general practitioners and other specialists is certainly beneficial and warranted. German Clinical Trial Register, www.germanctr.de, DRKS00011052

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OP0309

OPTIMIZATION OF FLARE MANAGEMENT IN PATIENTS WITH RHEUMATOID ARTHRITIS: RESULTS OF A RANDOMIZED CONTROLLED TRIAL

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Background: Flares in rheumatoid arthritis (RA) are common [1]. The shortage of readily available specialized care may hinder early detection and timely management of RA flares. Engaging non-physician rheumatology providers in care of RA flares may be beneficial.

Objectives: To evaluate the effect of a nurse-led flare management intervention versus usual care between rheumatology visits on flare occurrence and RA disease activity in patients with RA.

Methods: Patients with established RA (2010 ACR criteria) were randomized to the intervention versus usual care. The Flare Assessment in Rheumatoid Arthritis (FLARE-RA) questionnaire was administered monthly during the 24-month follow-up to all patients in the intervention arm to assess flare status. The results of the FLARE-RA questionnaire and patient's response to the question "Are you currently in a flare of your RA?" were recorded. Telephone nurse-led counseling or a visit with a mid-level rheumatology provider within 7 days of detection of flare was offered to patients in the intervention arm who indicated they were in flare. Patients in the usual care arm were followed by their rheumatology providers according to standards of care. OMERACT9 definition of flare was used to compare flare occurrence between the study arms. All patients completed satisfaction surveys at baseline and at the end of the follow-up.

Results: 150 patients with RA were randomized to intervention (n=75) versus usual care (n=75). At baseline, the majority of patients in the intervention arm (51%) and in the usual care (60%, p=0.32) were interested in expedited appointments with a rheumatology provider if in RA flare. There were no differences between the study arms at baseline in age, sex, tender joint counts, pain intensity, patient and physician global assessments, C-reactive protein levels, DAS28-CRP, CDAI, or SDAI. Despite randomization, patients in the intervention arm had lower swollen joint counts (1.1±2.7 vs 2.4, p=0.003) and Health Assessment Questionnaire (HAQ) score (0.6±0.6 vs 0.9±0.6, p=0.005) than those in the usual care arm. The number of patients in the intervention arm who completed the FLARE-RA questionnaires at baseline, 6, 12, 18, and 24 months was 75, 37, 27, 13, and 23, respectively. Patients in the intervention arm completed a median of 8.5 (range 1–24) questionnaires. RA flare was reported on 122 (19%) of these questionnaires; average FLARE-RA score: 2.57. Patients agreed to have an expedited clinic visit with a rheumatology provider during 39 (32%) of flares. The majority of patients preferred to self-manage their flare (76, 62%) or receive nursing advice over the phone 7 (6%). There were no differences in DAS28-CRP, CDAI, SDAI, anti-rheumatic treatment change by rheumatology provider, RA flare by OMERACT9 definition, or remission by CDAI between the study arms over 24-month follow-up. At the end of the study, a higher proportion of patients in the intervention arm (44%) versus the usual care arm (21%, p=0.04) reported positive effect of participation in the study on the management of RA flares.

Conclusion: The majority of patients expressed interest in expedited rheumatology appointments for their RA flares on their baseline patient-satisfaction survey. However, during the study, patients in the intervention arm largely preferred self-management and/or over-the-phone counseling. The nurse-led flare