Methods Using ICD 10 codes for SLE (M32, M320, M321, M328, M329), we identified reproductive aged (ages 16–50) female SLE patients, who presented to the outpatient rheumatology clinic at Parkland Hospital between 07/01/17 and 10/31/17. We performed a retrospective chart review of the documentation of contraception use. We also assessed medication use including potential teratogenic medications.

Results Among 112 clinic encounters, contraceptive use was documented in 60% of encounters. Amongst those women prescribed a potentially teratogenic medication, documentation of contraception was present in 68% of clinic notes. In our patient population, the most commonly prescribed potentially teratogenic medication was mycophenolate mofetil followed by methotrexate. The average age of women who were on potentially teratogenic medicine and had documented contraception was younger (mean 31, SD 7.2) than those in whom contraception was not documented (mean 38, SD 8.6). Greater than 50% of those patients on potentially teratogenic medicine used less reliable contraceptive methods: abstinence or condoms. Providers rarely documented other information in regard to reproductive health such as pregnancy planning and the desire to have children.

Conclusions Contraceptive use documentation amongst reproductive aged women with SLE in a safety net hospital is often lacking even amongst those on potentially teratogenic medication. Documentation of contraception is more common in younger women. Identifying barriers to contraceptive use documentation and implementing interventions to facilitate documentation is a future goal.

CS-10

CRITERIA FOR CLINICALLY RELEVANT IMPROVEMENT IN CHILDREN & ADOLESCENTS WITH CHILDHOOD-ONSET SYSTEMIC LUPUS ERYTHEMATOSUS

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Background There is international consensus around a core set of variables (cSLE-CRVs) to assess response to therapy with childhood-onset systemic lupus erythematosus (cSLE) [global assessment of patient well-being (Patient-global), physician

Abstract CS-10 Figure 1 CHILI scores were calculated from logit scores using multivariate logistic models considering either absolute differences between the baseline and follow-up time point at the time of follow-up relative of the baseline visit in the trainings-dataset. The range of the improvement score has been standardized to range from 0–100, the higher (lower) score indicates higher (lower) likelihood of improvement. The CHILI score = $100 \times \text{raw score} / (1 + \text{raw score})$. The raw score is calculated as follows: raw score = $\text{Exp} (5.1 + 0.47 \times \text{SLEDAI} + 0.7 \times \text{MD-global} + 1.1 \times \text{PC-ratio} - 0.32 \times \text{patient-global} + 0.002 \times \text{CHQ-Phs})$

assessment of cSLE activity (MD-global), disease activity index score, urine protein to creatinine ratio (PCR), Child Health Questionnaire physical function summary score (CHQ-Phs)]. Percentage changes of these cSLE-CRVs are used in the Provisional PRINTO-ACR- EULAR Criteria of Response to Therapy of cSLE (PCI). In a small dataset, we have previously shown that the PCI and the Systemic Lupus Responder Index only have fair accuracy in detecting cSLE improvement. The Objective of this research was to 1) validate the PCI and 2) develop for Children an Index of Lupus Improvement (CHILI) as a tool to measure response to therapy, with focus on *clinically relevant improvement* (CRI_{cSLE}).

Methods Pediatric subspecialists (n=213) in treating cSLE were invited to define CRI_{cSLE} and rate a total of 433 unique patient profiles for the presence/absence of CRI_{cSLE} and various levels of improvement. Patient profiles included the cSLE-CRVs and routine laboratory tests at a baseline and follow-up time-point. To measure CRI_{cSLE} we tested the PCI, and developed the candidate CHILI criteria that considered a) absolute and b) percentage changes of the cSLE-CRVs (baseline vs follow-up) in a trainings-dataset and initially validated these criteria in the validation-dataset. Criteria accuracy was assessed by kappa statistics (PCI) and the area under the ROC curve (AUC; range: 0–1)], respectively.

Results During an international consensus conference agreement on a definition of CRI_{cSLE} was achieved. Response rate to patient profile ratings was 91% (194/214). The PIC had no more than fair accuracy (kappa <0.43). There was consensus (92.3%) that the CHILI is preferable to the PCI to measure CRI_{cSLE}. As shown in the figure 1, considering absolute changes of the cSLE-CRVs, a CHILI score of ≥ 54 (range 0–100) was highly accurate for identifying CRI_{cSLE} (AUC=0.93; sensitivity=81.1%; specificity=84.2%) in the validation-dataset. Likewise CHILI scores exceeding 15, 68 and 92 reflected minor, moderate and major improvement for values (all: AUC >0.92, sensitivity: >93.1%; specificity: >73.4%), respectively.

Conclusions The CHILI is a new highly accurate index to capture improvement in the overall course of cSLE. This index is also useful to categorize the degree of cSLE response to therapy.

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Background Adherence to hydroxychloroquine (HCQ), the standard-of-care treatment among patients with systemic lupus erythematosus (SLE) is suboptimal and interventions to date to improve this have been largely unsuccessful. Individual-level factors, including younger age and non-white race/ethnicity, have been implicated. While contextual influences such as area-level poverty are known to contribute to health behaviors and to SLE-related damage, no studies to date investigate the role of these factors on HCQ adherence. We therefore aimed to use multilevel models to understand the effects of sociodemographic variables (area-level racial composition, poverty, educational attainment) and health resource concentration (numbers of physicians, pharmacists, hospitals) on HCQ adherence while also accounting for potential individual-level factors.

Abstract CS-11 Table 1 Models examining the odds of HCQ adherence (PDC $\geq 80\%$) vs nonadherence (PDC <80%) with 95% Credible Intervals by contextual factors

Area-level sociodemographics and health resources	Odds ratio (OR)	95% Credible Intervals
Zip Code-level Percent Black (ref=lowest tertile)		
Tertile 2	0.85	0.74–0.98
Tertile 3	0.81	0.69–0.96
Zip Code-level Percent White (ref=lowest tertile)		
Tertile 2	0.93	0.81–1.08
Tertile 3	1.13	0.94–1.34
Zip Code-level Percent Hispanic (ref=lowest tertile)		
Tertile 2	0.92	0.77–1.07
Tertile 3	0.90	0.74–1.06
Zip Code-level Percent below Federal Poverty Level (FPL) (ref=lowest tertile)		
Tertile 2	0.98	0.83–1.16
Tertile 3	1.02	0.88–1.19
Zip Code-level Educational attainment (ref=HS or less)		
Some college	1.10	0.83–1.46
College graduate	1.00	0.83–1.19
Zip Code-level Composite Percent Black/Percent below FPL* (ref=Group 1)		
Group 2	0.88	0.73–1.04
Group 3	0.87	0.70–1.07
County-level number of hospitals per capita** (ref=lowest tertile)		
Tertile 2	1.13	0.97–1.31
Tertile 3	1.30	1.07–1.58
State-level number of rheumatologists per capita** (ref=lowest tertile)		
Tertile 2	1.22	0.95–1.55
Tertile 3	1.16	0.89–1.47

Each variable was examined in a separate model adjusted for age, sex, race/ethnicity, SLE risk adjustment index, lupus nephritis, diabetes, antidepressant use, corticosteroid use, immunosuppressive use, number of lab tests, number of medications, healthcare utilization, calendar year at index date, and random effects at each level. Bolded 95% credible intervals do not cross 1 and Bayesian p-value was <0.05.

*Group 1=zip codes with the lowest tertiles of percent black and percent below FPL, Group 3=zip codes with the highest tertiles of % black and % below FPL

**Models also adjusted for zip code percent black

Methods We identified SLE patients with new use of HCQ (no use in ≥ 6 months) in Medicaid (2000–2010) from 28 U. S. states. We required 12 months of continuous enrollment after HCQ initiation with complete drug dispensing data and measured adherence using the proportion of days covered

CS-11

THE EFFECTS OF CONTEXTUAL SOCIODEMOGRAPHIC FACTORS AND HEALTH RESOURCE CONCENTRATION ON HYDROXYCHLOROQUINE ADHERENCE AMONG U.S. MEDICAID BENEFICIARIES WITH LUPUS

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