health record (EHR) is a powerful tool to capture coded diagnoses at a population level, accurately identifying SLE births is challenging. Our objective was to develop and externally validate algorithms for identifying births to SLE patients.

**Methods** We used two EHR-based datasets: Vanderbilt Synthetic Derivative and Dukes Clarity. Potential cases had at least 1 SLE code (ICD-9: 710.0 or ICD-10:M32.1*, M32.8, M32.9) and at least 1 ICD-9 or ICD-10 code for pregnancy-related diagnoses. At Vanderbilt, 100 potential cases were randomly selected for chart review and each classified as a case if SLE was diagnosed by a rheumatologist, nephrologist, or dermatologist. Using this dataset, positive predictive values (PPVs) and sensitivity were calculated for combinations of counts of SLE ICD-9 or ICD-10 codes provided by any clinician and by a rheumatologist (rheumatology coded), antimalarial use, positive ANA, and checked lupus labs (dsDNA, C3 or C4). F-score measured the performance of each algorithm. At Duke, potential cases were compared with the Duke Autoimmunity in Pregnancy Registry; cases outside of this registry underwent chart review. Vanderbilt served as a training set; Duke served as validation.

**Results** From Vanderbilt's 2.8 million subject records, we identified 433 potential cases. Of the 100 cases randomly selected for chart review, 39 had confirmed SLE and a history of a birth. Of Dukes 659 potential cases, 545 were included in a validation set of which 208 had confirmed SLE. In the training set, algorithms with ICD-10 codes had higher PPVs than algorithms with ICD-9 codes (table 1). The algorithm with the highest F-score of 88% was 4 counts of ICD-9 or ICD-10 codes and checked lupus labs. Algorithms validated well in the Duke dataset. In the validation set, 1 ICD-9 or ICD-10 code (by a rheumatologist) performed best (F-score: 82%).

**Conclusions** We have developed and validated algorithms to detect SLE patients with births in the EHR. The highest performing algorithms use SLE ICD-9 or ICD-10 codes and clinical parameters or ICD-10 codes alone. Algorithms using more SLE coded visits have greater PPVs at a cost to sensitivity. While the PPV and sensitivity nears 90%, EHR cohorts remain complementary to prospective cohorts. However, in the era of big data, developing methods to identify SLE births accurately is critical to examine adverse outcomes such as preterm births.

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### Abstracts

#### HEALTH-RELATED QUALITY OF LIFE IN TUNISIAN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background Systemic lupus erythematosus (SLE) is a chronic inflammatory disease which can affect different aspects of the patient's life, leading to an impairment of health-related quality of life (HRQOL).

The aim of our study was to investigate the role of demographic, clinical, immunological and psychological aspects in influencing the HRQOL of Tunisian patients with SLE and to compare the efficiency of both generic and specific questionnaires of QOL.