

Supplementary Materials

Supplemental Table 1

| Supplemental Table I. Individual Cohort demographics | | | |
|--|-----------|-------------------|---------|
| Characteristic | Registry | Clinic Population | p value |
| | n=254 | n=94 | |
| % SLE (by ACR Criteria) | 73% | 9% | <0.001 |
| # ACR Criteria (SLE patients) | 5.8 ± 2.1 | 4.2 ± 1.2 | 0.02 |
| Age | 55 ± 15 | 65 ± 13 | <0.001 |
| Female (%) | 94 | 78 | <0.001 |
| Black Patients (%) | 65 | 23 | <0.001 |
| White Patients (%) | 33 | 77 | |
| Other Race (%) | 2 | 0 | |
| Results reported as percentage or average ± standard deviation | | | |

Supplemental Table 2

| Supplemental Table II Algorithm performance by race | | | | | | |
|---|--------------|---------------|----------------|-------------|----------------|-------------|
| # of codes | All patients | | Black Patients | | White patients | |
| | Sensitivity | 1-Specificity | Sensitivity | Specificity | Sensitivity | Specificity |
| 1 | 95% | 60% | 96% | 43% | 94% | 66% |
| 2 | 89% | 77% | 90% | 69% | 86% | 80% |
| 3 | 82% | 85% | 85% | 79% | 74% | 88% |
| 4 | 77% | 87% | 80% | 83% | 67% | 89% |
| 2 30 days apart | 92% | 76% | 92% | 69% | 92% | 79% |

| | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|
| 3 60 days apart | 83% | 85% | 85% | 79% | 78% | 88% |
| 4 90 days apart | 77% | 87% | 80% | 83% | 67% | 89% |

Supplemental Table 3

| Supplemental Table III. % of patients classified as SLE in local and national populations | | |
|---|---------------------------|----------|
| # of codes 30 days apart | percent classified as SLE | |
| | MUSC | National |
| 1 | 100 | 100 |
| 2 | 85 | 65 |
| 3 | 74 | 59 |
| 4 | 68 | 52 |

Supplemental Figure 1. Text from previously validated natural language processing algorithm and SLE criteria terms were used to search chart note, procedure, and laboratory text for terms that would identify systemic lupus erythematosus by ACR criteria (12).

“Lupus or discoid lupus or cutaneous lupus or oral ulcers or nasal ulcers or mucosal ulcers or alopecia or synovitis or joint swelling or nonerosive or serositis or pleuritis or pericarditis or pleurisy or pericardial pain or lupus nephritis or proteinuria or leukopenia or lymphopenia or thrombocytopenia or antinuclear antibody or ANA or dsDNA or double-stranded DNA or anti-SM or Smith or C3 OR Epitheli or C4 or antidouble or hydroxychloroquine or Plaquenil or kidney biopsy or nonspecific chest pain or connective tissue disorder”