

# Disease frequency and characteristics of patients with systemic sclerosis and systemic sclerosis-associated interstitial lung disease: a US cohort study

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## OBJECTIVES

- To estimate prevalence and incidence rates of SSc and SSc-ILD in the MarketScan® claims database
- To describe patient characteristics among incident cases of SSc and SSc-ILD in the MarketScan® claims database

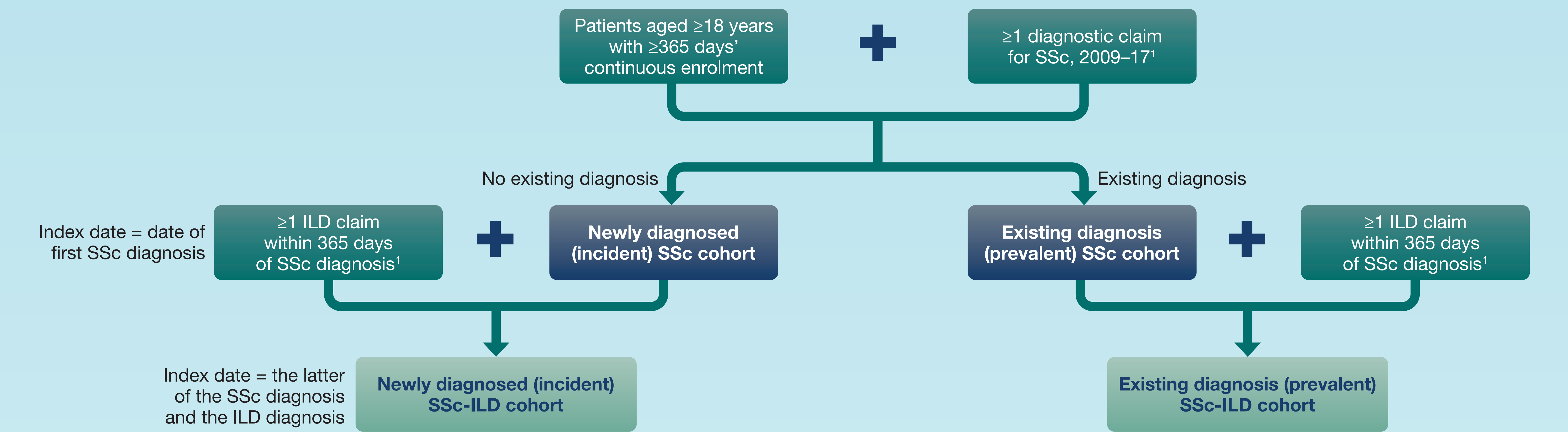
## STUDY DESIGN

US IBM® MarketScan® claims database (2008–17)

De-identified outpatient, inpatient and pharmaceutical claims of privately insured patients  
Descriptive analyses performed using Aetion Evidence Platform™ (v3.12)

**Prevalence:** number of incident and existing cases divided by number of patients at risk

**Incidence rate:** number of incident cases divided by person-years at risk



<sup>1</sup>Primary analysis required ≥1 claim for SSc; for SSc-ILD, ≥1 claim for SSc plus ≥1 claim for ILD was required. The sensitivity analysis required ≥2 claims for SSc; for SSc-ILD, ≥2 claims for SSc plus ≥2 claims for ILD within 365 days prior, on or after the SSc claim was required.

## RESULTS

ESTIMATED PREVALENCE AND INCIDENCE RATE OF SSc AND SSc-ILD BETWEEN 2009 AND 2017

Total patients at risk: 78,964,708

PRIMARY ANALYSIS (≥1 claim for SSc or SSc+ILD)				
	Number of new and existing cases	PREVALENCE per 100,000 persons	Number of new cases	INCIDENCE per 100,000 person-years
SSc	56,923	72.1	34,820	18.3
SSc-ILD	15,005	19.0	8,252	4.3

SENSITIVITY ANALYSIS (≥2 claims for SSc or SSc+ILD)				
	Number of new and existing cases	PREVALENCE per 100,000 persons	Number of new cases	INCIDENCE per 100,000 person-years
SSc	32,732	41.5	16,820	8.8
SSc-ILD	7,767	9.8	3,120	1.6

- >80% of patients with SSc and SSc-ILD were female
- Prevalence and incidence rates of SSc and SSc-ILD were both higher in females compared with males

- Estimates of prevalence and incidence rates for both SSc and SSc-ILD were higher compared with other similar studies<sup>1,2</sup>
- The high prevalence and incidence rate of SSc in this large database analysis may be attributed to the methodology and was reduced when using ≥2 claims for diagnosis

BASELINE PATIENT CHARACTERISTICS AND DIAGNOSTIC PROCEDURES FOR INCIDENT SSc AND SSc-ILD (primary analysis)

	SSc (n=34,820)	SSc-ILD (n=8,252)
Mean age, years (SD)	53.6 (14.48)	58.3 (13.46)
Sex, n (%)		
Female	29,141 (83.7)	6,750 (81.8)
Diagnostic procedures at baseline, n (%)		
Regular lab tests	28,130 (80.8)	6,946 (84.2)
Auto-antibodies	12,598 (36.2)	3,328 (40.3)
Chest X-ray	12,147 (34.9)	5,296 (64.2)
Spirometry	5,282 (15.2)	3,623 (43.9)
Pulmonary function test	5,256 (15.1)	3,625 (43.9)
Abdomen ultrasound	4,229 (12.1)	1,435 (17.4)
Chest CT	4,678 (13.4)	3,658 (44.3)
HRCT	2,588 (7.4)	2,465 (29.9)
Lung volumes	1,619 (4.6)	1,450 (17.6)
Heart ultrasound	1,765 (5.1)	776 (9.4)
Six-minute walking test	834 (2.4)	767 (9.3)

PREVALENCE OF COMORBIDITIES AT BASELINE AMONGST PATIENTS WITH SSc AND SSc-ILD

Comorbidity, % (95% CI)	SSc (n=34,820)	SSc-ILD (n=8,252)
Skin disorders	28.8 (28.3, 29.3)	34.5 (33.4, 35.5)
Gastroesophageal reflux	17.9 (17.5, 18.3)	28.5 (27.5, 29.4)
Upper respiratory tract infections	11.1 (10.8, 11.5)	11.3 (10.6, 12.0)
Type 2 diabetes mellitus	10.2 (9.8, 10.5)	13.2 (12.5, 13.9)
Raynaud syndrome	7.8 (7.5, 8.1)	14.5 (13.8, 15.3)
COPD	7.6 (7.3, 7.9)	20.7 (19.8, 21.5)
Chronic and acute renal failure or insufficiency	6.7 (6.4, 6.9)	12.2 (11.5, 12.9)
Cardiac arrhythmia	6.5 (6.3, 6.8)	12.3 (11.6, 13.0)
Arterial hypertension	6.3 (6.0, 6.5)	13.8 (13.1, 14.6)
Urinary tract infections	6.3 (6.0, 6.5)	8.7 (8.1, 9.4)
Pneumonia	3.3 (3.1, 3.5)	11.4 (10.7, 12.1)
Pulmonary hypertension	3.2 (3.0, 3.4)	11.2 (10.6, 11.9)
Acute respiratory failure	1.5 (1.3, 1.6)	5.1 (4.6, 5.6)
Pulmonary arterial hypertension	0.1 (0.1, 0.2)	0.5 (0.3, 0.6)

## CONCLUSIONS

- Demographic characteristics were consistent with previously published literature<sup>1,3</sup>
- In this large database analysis, patients with SSc-ILD had a higher burden of disease (in terms of comorbidities) and higher healthcare resource use (in terms of diagnostic procedures) compared with patients with SSc
  - The higher burden of disease for patients with SSc-ILD may be related to these patients having other internal organ involvement and having had this disease for a longer period