

RWD42 Epidemiology, Healthcare Resource Utilization, and Costs of Ulcerative Colitis and Crohn's Disease Patients in Taiwan: A National Health Insurance Research Database (NHIRD) Study

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OBJECTIVE

- There is little understanding of the epidemiology and disease burden of Ulcerative Colitis (UC) and Crohn's Disease (CD) patients in Taiwan.
- Given the potential burden of these diseases in Taiwan, further understanding is required.
- Therefore, this study examined the epidemiology, healthcare resource utilization (HCRU), and costs related to people with UC and CD in Taiwan.

CONCLUSION

- Case numbers of UC and CD have been increasing during the study period, including among those treated with targeted therapies.
- These people present a significant burden for the healthcare system in Taiwan.
- This study provides valuable insights into the epidemiology, healthcare resource utilization, and costs related to people with UC and CD in Taiwan, which can inform healthcare policy and resource allocation strategies.



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STUDY DESIGN

Data Source

- Taiwan's National Health Insurance Research Database (NHIRD) was used to perform a retrospective claims-based analysis of people with UC and CD.

Study Period

- Data from January 1, 2016, through December 31, 2020, was used as the study period and the index period included data from January 1, 2017, through December 31, 2018, as the index period (Figure 1).

UC and CD Population

- Participants were enrolled if they: 1) held catastrophic illness certificates for UC (ICD-10-CM code K51) or CD (ICD-10-CM code K50) during the index period and 2) were ≥18 years of age. Participants were excluded if they left the database within 1 year following the index date, or they were not in the database in the pre-index period.

Targeted Therapy Subgroup

- Participants were stratified into cohorts based on usage of targeted therapies vs. not using targeted therapies during the one year following index. The targeted therapies used for the cohort definitions included infliximab, adalimumab, golimumab, vedolizumab, certolizumab, and ustekinumab.

Targeted Therapy Subgroup

- In a cross-sectional analysis, for each calendar year (January 1 through December 31) from 2016 to 2020, the total number of people with UC and CD (and the targeted therapy subgroup) was measured. In the longitudinal analysis, patient counts, HCRU and costs were estimated for people with UC and CD.
- Costs were reported in New Taiwan Dollars (NTD), with 1 USD = 32.36 NTD as of 11/10/2023
- Healthcare resource utilization included the number of hospitalizations, including the hospital days and frequency, emergency department (ED), and outpatient visits. The health resource utilization measures considered all-cause and disease-related measures for the hospitalization and visits.

Figure 1. UC and CD case counts in Taiwan from 2016-2020 (aged 18 years and above)

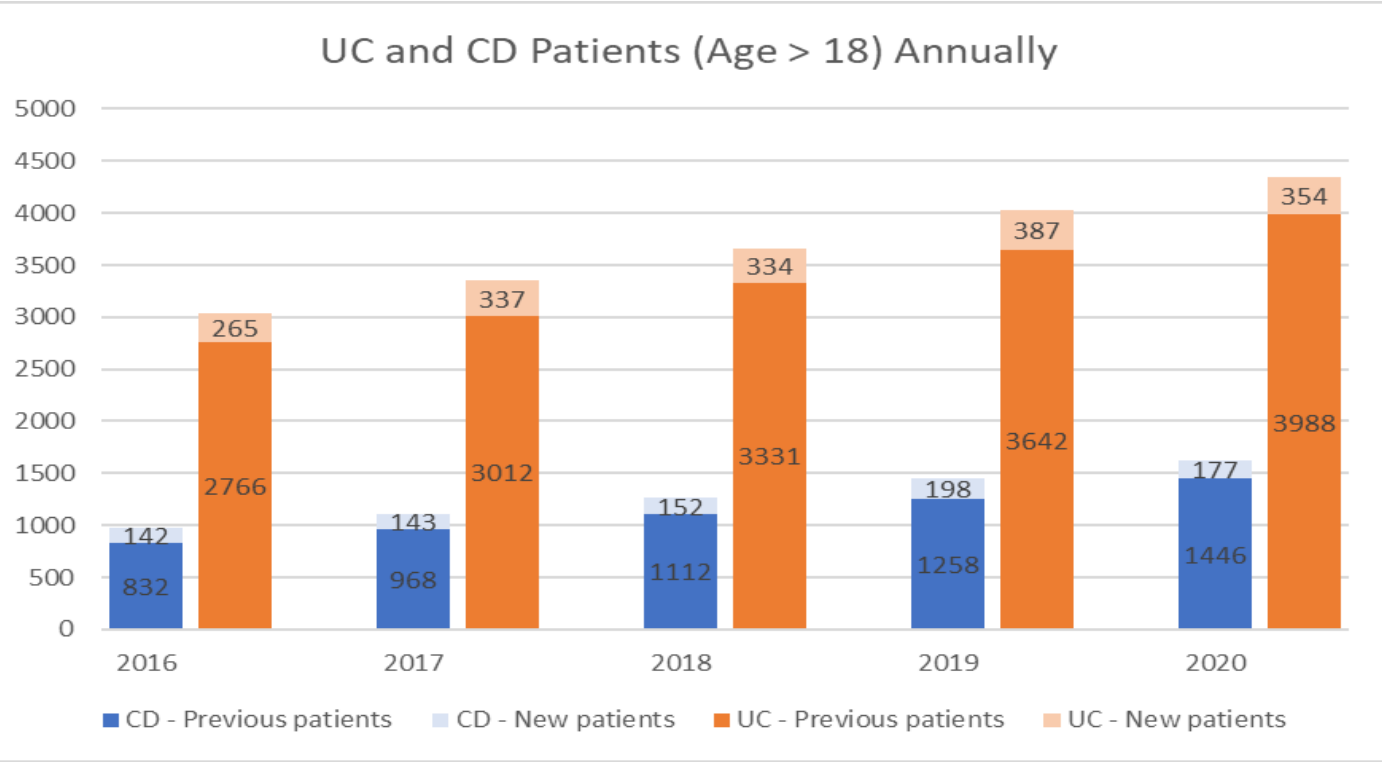


Table 1. Healthcare Resource Utilization

Healthcare Resource Utilization	CD patients		UC patients	
	Year 1 (n = 235)	Year 2 (n = 215)	Year 1 (n = 569)	Year 2 (n = 537)
Hospitalizations (All Cause), n (%)	107 (45.53%)	78 (36.28%)	167 (29.35%)	108 (20.11%)
Hospital Days, mean ± SD	23.28 ± 32.17	17.59 ± 27.66	18.98 ± 56.94	18.24 ± 58.96
Frequency, mean ± SD	2.50 ± 2.46	2.26 ± 2.16	2.12 ± 2.22	2.15 ± 2.78
Hospitalizations (Disease-related), n (%)	74 (31.49%)	47 (21.86%)	102 (17.93%)	44 (8.19%)
Hospital Days, mean ± SD	20.43 ± 25.19	12.45 ± 25.22	11.87 ± 12.07	9.75 ± 8.99
Frequency, mean ± SD	2.12 ± 1.98	1.79 ± 1.94	1.64 ± 1.28	1.41 ± 0.84
ED Visits (All Cause), n (%)	95 (40.43%)	66 (30.70%)	156 (27.42%)	128 (23.84%)
Frequency, mean ± SD	2.71 ± 2.99	2.94 ± 4.72	1.57 ± 1.08	1.56 ± 1.09
ED Visits (Disease-related), n (%)	41 (17.45%)	21 (9.77%)	36 (6.33%)	20 (3.72%)
Frequency, mean ± SD	1.90 ± 2.27	2.24 ± 2.93	1.17 ± 0.38	1.25 ± 0.91
Outpatient Visits (All Cause), n (%)	235 (100%)	215 (100%)	569 (100%)	534 (99.44%)
Frequency, mean ± SD	40.58 ± 26.63	36.56 ± 23.63	36.68 ± 21.90	33.35 ± 21.64
Frequency (rheumatology), mean ± SD	1.31 ± 4.37	1.31 ± 4.25	0.71 ± 2.86	0.59 ± 2.62
Frequency (gastroenterology), mean ± SD	13.84 ± 9.37	11.71 ± 8.34	10.68 ± 9.35	8.87 ± 8.20
Frequency (surgical), mean ± SD	4.98 ± 10.86	3.22 ± 6.72	4.71 ± 7.43	3.68 ± 6.54
Frequency (infection), mean ± SD	0.05 ± 0.40	0.10 ± 0.53	0.15 ± 1.42	0.18 ± 1.69
Frequency (TCM), mean ± SD	2.59 ± 7.46	2.77 ± 7.04	2.83 ± 7.48	2.66 ± 7.23
Outpatient Visits (Disease-related), n (%)	205 (87.23%)	181 (84.19%)	511 (89.81%)	438 (81.56%)
Frequency, mean ± SD	17.84 ± 11.07	15.19 ± 9.68	15.11 ± 8.77	13.63 ± 8.11
Frequency (rheumatology), mean ± SD	0.76 ± 3.45	0.69 ± 3.39	0.44 ± 2.31	0.41 ± 2.20
Frequency (gastroenterology), mean ± SD	11.24 ± 9.09	10.13 ± 8.29	9.62 ± 9.05	8.66 ± 7.96
Frequency (surgical), mean ± SD	3.55 ± 8.34	2.49 ± 6.49	3.68 ± 6.54	2.90 ± 5.39
Frequency (infection), mean ± SD	0.03 ± 0.32	0.03 ± 0.28	0.01 ± 0.15	0.04 ± 0.72
Frequency (TCM), mean ± SD	0.50 ± 2.81	0.48 ± 2.05	0.52 ± 3.34	0.63 ± 3.52

STUDY DESIGN

Figure 1. Study Timeline.

RESULTS

Longitudinal Patient Flow

- In the longitudinal cohort there were 235 people with CD (Figure 2a) and 569 people with UC (Figure 2b)

Cross-Sectional Patient Counts

- The number of prevalent people with UC and CD increased each year from 2016 to 2020. In the last year of data (2020), there were 1623 people with CD and 4342 people with UC (Figure 3). On average, there were 162 new CD and 335 new people with UC cases each year in our study period.
- People with CD were predominantly male (67.27%), with the 20-39 age group accounting for 45.91% of these patients. People with UC were mostly male (60.17%) and skewed older, with those aged 40 and above comprising 70.06% of these patients in 2020.
- For the subgroup receiving targeted therapies, there were 266 people with CD in 2016, increasing to 630 in 2020. For people with UC, there were 92 patients in 2016, which increased to 281 in 2017 and 672 in 2020.

Figure 2. Longitudinal Cohort Patient Flow Diagrams. (A) CD patients, (B) UC patients

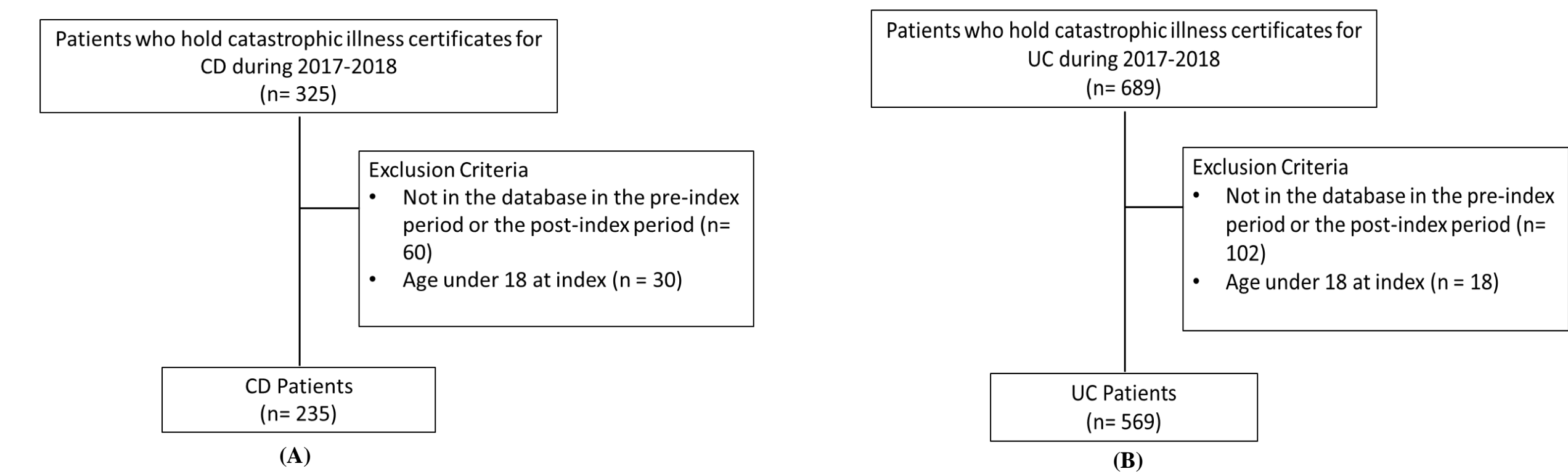


Table 2. Total Costs (NTD) for People with UC, CD.

Total Costs	People with CD				People with UC			
	Year 1 (n = 235)		Year 2 (n = 215)		Year 1 (n = 569)		Year 2 (n = 537)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
All-Cause	276,176	258,703	234,416	223,795	168,817	268,500	140,065	185,431
Medication	184,459	178,570	161,916	162,941	107,656	150,090	96,891	147,714
Non-Medication	91,717	130,086	72,500	116,351	61,162	181,940	43,174	77,994
Disease-Related	180,035	204,277	136,232	166,760	97,847	139,654	84,503	133,737
Medication	137,618	165,124	112,460	141,833	77,033	119,316	71,462	123,214
Non-Medication	42,417	70,293	23,771	48,164	20,814	44,176	13,042	19,467
Surgery	15,433	60,202	9,129	51,829	11,442	121,185	2,670	53,546
Medication	3,386	15,050	1,854	13,916	2,337	22,675	357	7,258
Non-Medication	12,046	46,239	7,274	39,288	9,106	100,961	2,313	46,293
Serious Infection	16,933	76,437	12,079	51,431	8,024	56,208	3,495	33,291
Medication	7,055	37,758	7,668	42,933	3,194	27,867	1,885	26,199
Antibiotics	1,530	8,580	557	3,216	1,004	7,883	245	2,416
Non-Medication	9,879	50,643	4,411	20,412	4,830	36,108	1,610	14,763

TOTAL COSTS

Patients with CD - Total costs

- Total average costs in the first year were 276,176 NTD, of which 180,035 NTD were disease-related costs. Medication and non-medication costs were on average 184,459 NTD and 91,717 NTD, respectively (Table 2).

Patients with UC - Total costs

- Total average costs in the first year were 168,817 NTD, with 97,847 NTD being disease-related costs. Within disease-related total costs, medication and non-medication costs were on average 77,033 NTD and 20,814 NTD, respectively (Table 2).

HEALTHCARE RESOURCE UTILIZATION

People with CD healthcare resource utilization

- In the first year of follow-up, 31.49% of people with CD had a disease-related hospitalization, with a mean hospital stay of 20.43 days (Table 1).
- For outpatient visits (disease-related), 87.23% of people experienced a visit with the most common specialty being gastroenterology comprising 11.24 visits annually (Table 1).
- For endoscopy examinations, 61.70% of people had an exam with the most common being colonoscopy (48.51%), panendoscopy (18.72%) and small bowel series (13.19%).

People with UC healthcare resource utilization

- In the first year of follow-up, 17.93% of people with UC experienced a disease-related hospitalization with a mean hospital stay of 11.87 days (Table 1).
- For outpatient visits (disease-related), 89.81% of people experienced a visit with the most common specialty being gastroenterology comprising 9.62 visits annually (Table 1).
- For endoscopy examinations, 66.08% of people had an exam with the most common being colonoscopy (63.27%) and panendoscopy (15.47%).

Disclosures: DS and BW are employees of Elysia who was sponsored to conduct the study by Eli Lilly and Company, United Kingdom. CYW, RSN, and KJN are employees of, and minor shareholders in, Eli Lilly and Company.