

BACKGROUND

Socioeconomic deprivation has been associated with conflicting international IBD outcomes, and the UK evidence remains limited to **single-centre cohorts or older datasets**. Thus, **whether inequalities extend across IBD care pathway is unclear**.

AIM

To investigate **socioeconomic deprivation effects** on **1. IBD characteristics**, **2. IBD related healthcare burden & 3. treatment patterns** in a large UK cohort

METHODOLOGY

NIHR IBD BioResource | N = 42,308

- N= 45102 (6.2% excluded – IMD unavailable)

20,833 CD (49.2%)	20,202 UC (47.7%)	1,273 IBDU (3.0%)
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Deprivation Measure = Index of Multiple Deprivation (IMD) in Quintiles

Q1 15.7%	Q2 19.5%	Q3 21.8%	Q4 21.6%	Q5 21.4%
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Most deprived ← → Least deprived

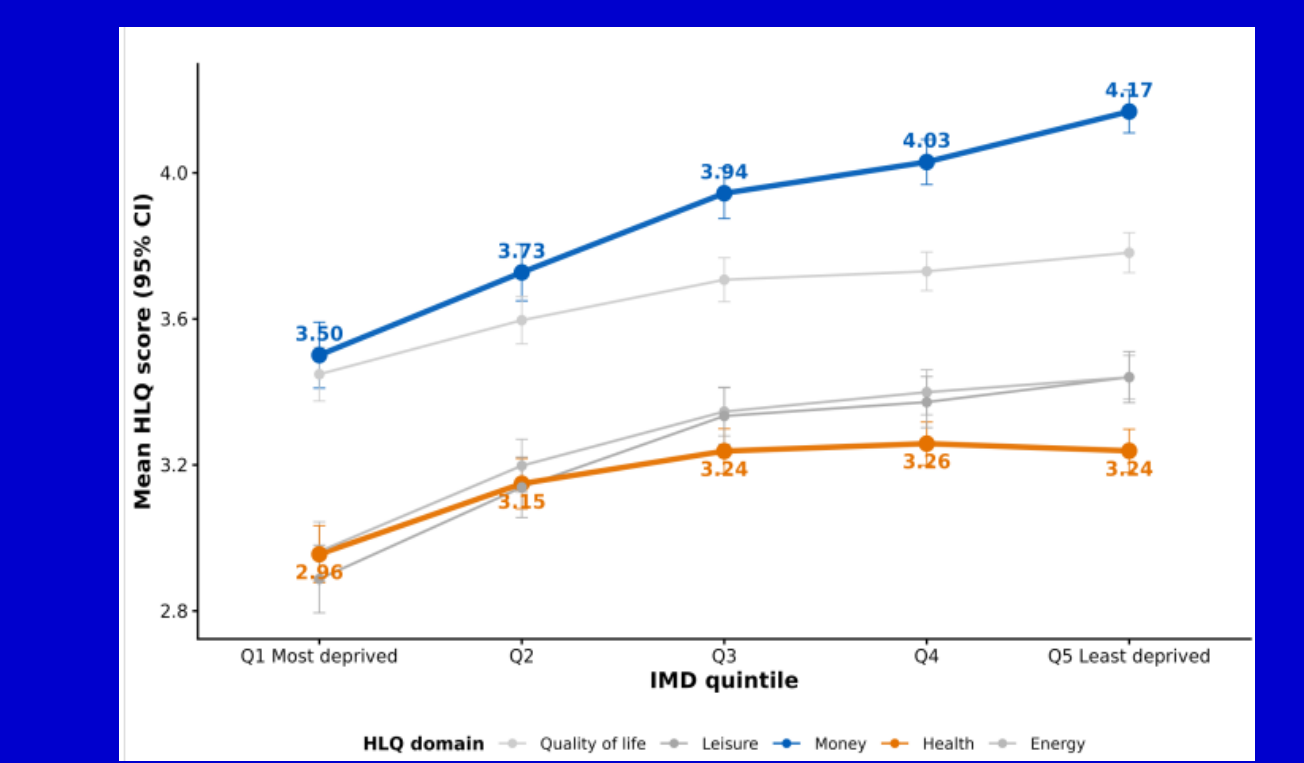
Statistical Analysis

01 DESCRIPTIVE χ² / Fisher Kruskal–Wallis	02 PRIMARY ANALYSIS Ordinal IMD Q5 → Q1 Multivariable M1*	03 POST-HOC Categorical IMD Q5 reference BH-FDR
04 OUTCOME MODELS Logistic • ordinal Multinomial • linear KM/log-rank • Cox	05 ROBUSTNESS Additional: Comorbidity • EIMs • era Sensitivity: BMI • HLQ Interactions: era • smoking	06 EXPLORATORY Healthcare-burden drivers Mutually adjusted models

M1* Age at diagnosis • sex • ethnicity • smoking • disease phenotype • year of diagnosis
Phenotype: CD – location, behaviour, perianal disease • UC – extent

SOCIOECONOMIC PROFILE

DOES IMD CAPTURE SOCIOECONOMIC DISADVANTAGE?

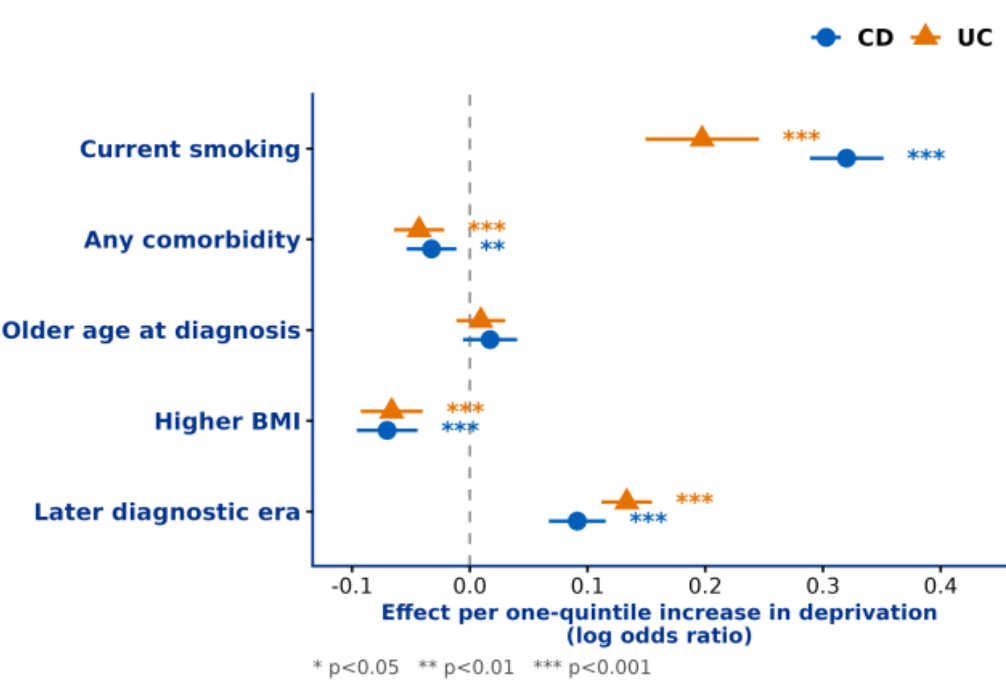


[HLQ panel] aOR — Money: CD 0.79, UC 0.77; Health: CD 0.91, UC 0.88

IMD closely tracked **financial difficulty**, but only weakly tracked **self-reported health**.

PARTICIPANT CHARACTERISTICS

WHO DIFFERS BY DEPRIVATION?



[demographic forest]

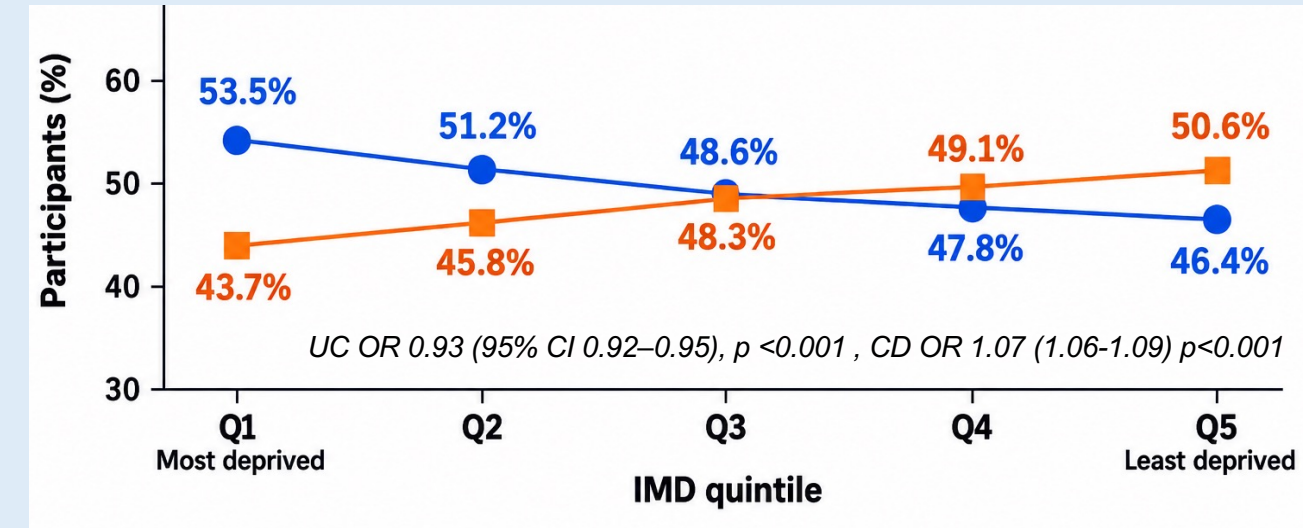
COHORT CONTEXT UC **older** at diagnosis than CD • Predominantly **White/White British** • **Specialist-confirmed diagnosis > 99.6%**

RESULTS

1 IBD CHARACTERISTICS

A | Diagnostic Distributions

◆ ↑ Deprivation → ↑ CD | ↓ UC



B | Disease Phenotypes

◆ Broadly **STABLE** across deprivation

Phenotype	Overall Pattern	With ↑ deprivation
CD location	L1 > L3 > L2 > L4	↓ L3 vs L1 *
CD behaviour	Inflammatory most common	↔
CD perianal	—	↔
UC extent	E2 > E3 > E1	↔

CD location: L1, ileal; L2, colonic; L3, ileocolonic; L4, upper GI.

C | Extra-Intestinal Manifestations

CD	↔ overall EIMs
UC	↑ deprivation → ↓ recorded EIMs (p=0.028)

Symbols: ↑ increase/higher; ↓ decrease/lower; → direction of association; p<0.05, *p<0.01, **p<0.001; ↔, p≥0.05.

2 HEALTHCARE BURDEN

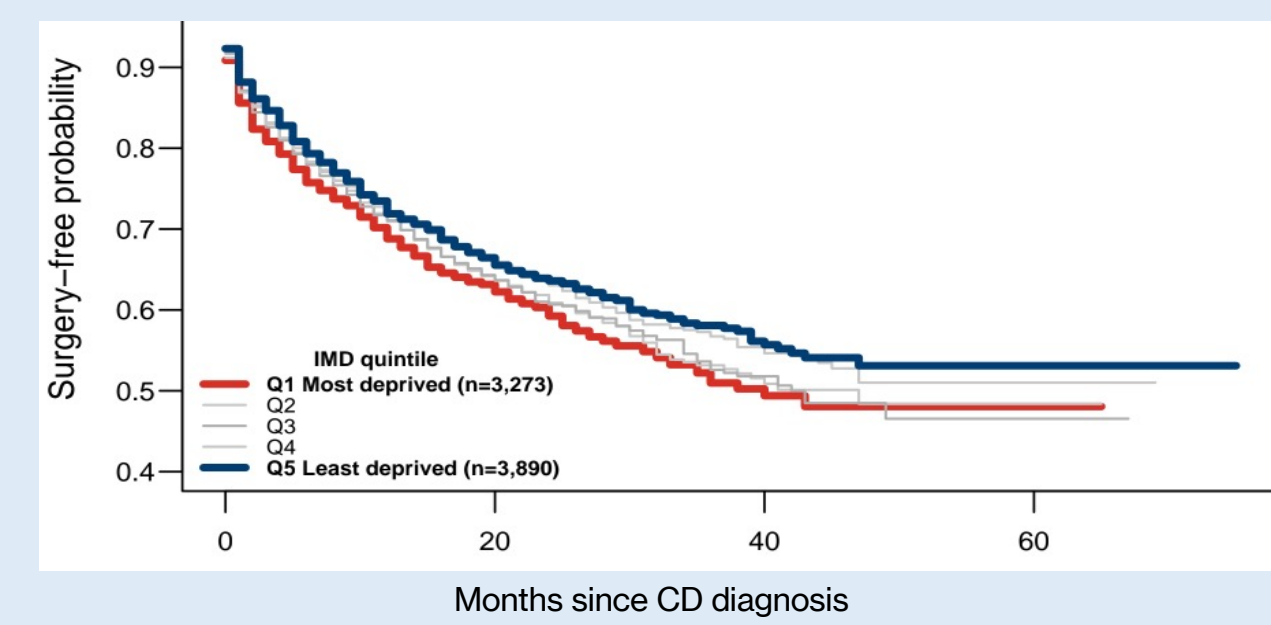
Outcome	Cohort	N	Q1 vs Q5 prevalence	M1 adjusted OR
Hospital admission	CD	14,022	64.4% → 57.1%	0.95 (0.92-0.98) ***
Hospital admission	UC	13,575	42.9% → 39.9%	0.94 (0.91-0.97) ***
Major surgery, any	CD	14,569	36.2% → 32.3%	0.95 (0.92-0.98) ***
Major surgery ≤2 y	CD	14,293	19.3% → 14.7%	0.94 (0.91-0.97) ***
Perianal surgery, any	CD	14,569	10.0% → 11.2%	1.05 (1.02-1.08) ***
Perianal surgery ≤2 y	CD	14,438	3.9% → 4.0%	1.02 (1.00-1.04) **
Colectomy, any	UC	13,652	5.0% → 4.8%	0.96 (0.93-0.99) ***
Colectomy ≤2 y	UC	13,652	2.4% → 2.0%	0.84 (0.81-0.87) ***
Steroid use, ever	CD	14,891	65.5% → 65.0%	0.99 (0.97-1.01) NS
Steroid use, ever	UC	14,329	59.4% → 60.6%	1.01 (0.99-1.03) NS
Oral steroids ≤2 y	CD	13,820	39.4% → 38.1%	0.97 (0.95-0.99) **
Oral steroids ≤2 y	UC	13,519	35.9% → 33.6%	0.94 (0.91-0.97) ***

Q1 Quintiles Q5 M1 adjusted OR (95% CI)

GREATER DEPRIVATION

↑ More Hospital Admissions — CD & UC
Associations attenuated after BMI adjustment

↑ Earlier Major Surgery — CD

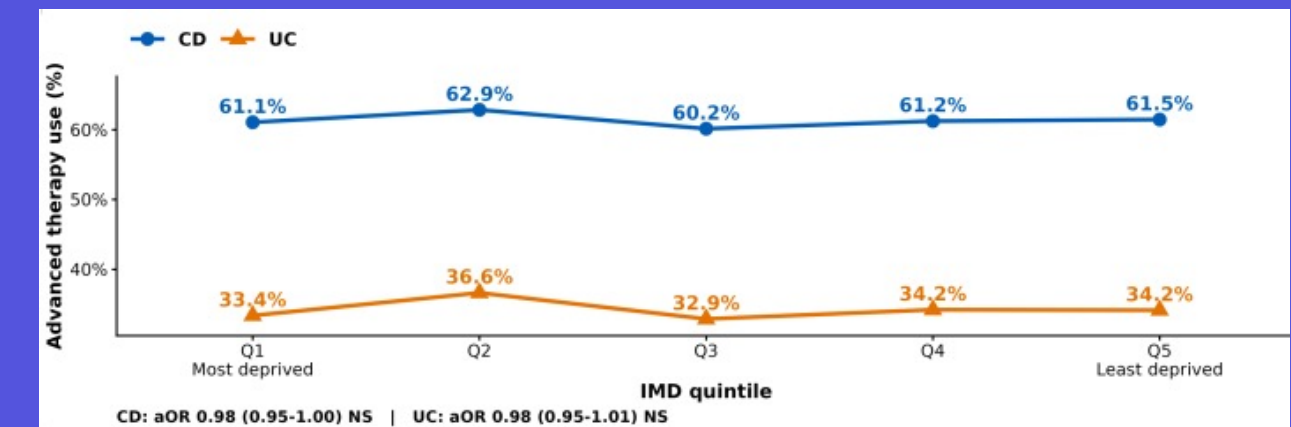


log-rank p=.003, Cox p<0.05
↔ Perianal surgery & UC colectomy

3 TREATMENT PATTERNS

A | ADVANCED THERAPIES EXPOSURE

◆ **SIMILAR EXPOSURE** – CD & UC



↔ Advanced therapies use

B | TREATMENT LADDER

◆ **SIMILAR PATTERN** across deprivation

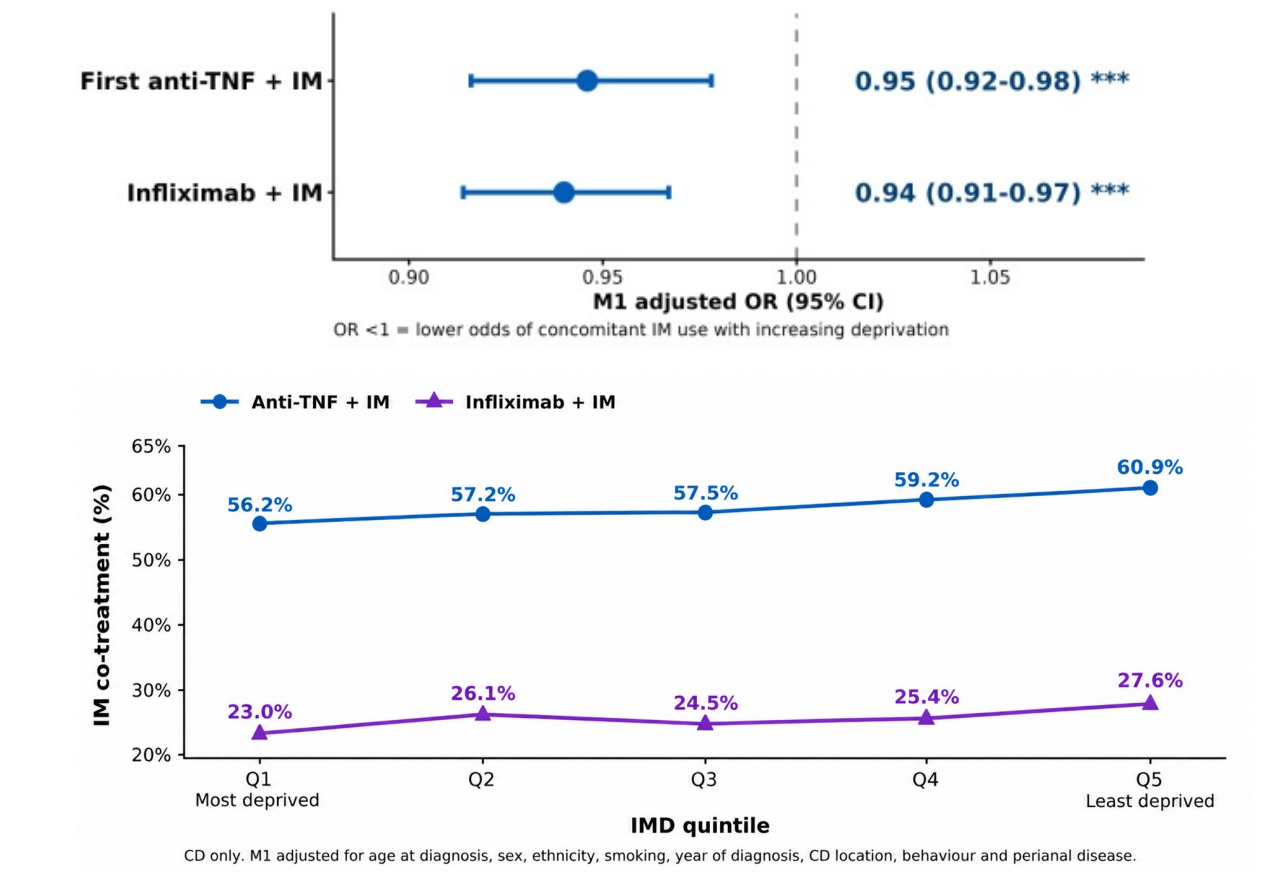
CD	Thiopurines > steroids > 5-ASA > biologics
UC	5-ASA > steroids > thiopurines > biologics
First Advanced therapy	Infliximab most frequent, followed by adalimumab (later-line choices less frequent).

C | SAFETY & PERSISTENCE

No **deprivation gradient** in **Adverse Events** or **Time-to-Treatment Failure** were observed across therapies

D | CD - ADVANCED THERAPIES + IMMUNOMODULATOR CO-TREATMENT

◆ **Greater deprivation** → **lower IM co-treatment with Advanced Therapies in CD**



• Association persisted in biologic-era (≥1999) analyses
ROBUSTNESS CHECK

ADDITIONAL ANALYSES

Additional Adjustment → Key associations **persisted***
BMI sensitivity → **Minimal change** after BMI adjustment
HLQ → CD **hospital admission** persisted
Interactions → Largely **none†**
Exploratory → **Phenotype > demographics** for healthcare burden

*Admission, CD major surgery & thiopurine use
†Exception: era × UC colectomy ≤2 y, p=0.048

LIMITATION

- IMD: **Area-level** deprivation
- PROMs: Limited HLQ coverage (**10.8%**)
- Observational: **Residual confounding** & **healthcare-access** effects

FUTURE DIRECTIONS

Why do higher healthcare burden arise with deprivation?

Investigate: Access to care • Hospitalisation details • Surgical pathways • Individual EIMs • etc
→ **Identify modifiable drivers of health inequality**

CONCLUSION

Greater deprivation was associated with greater IBD healthcare burden
More hospital admissions in **CD & UC** • Earlier major surgery in **CD**

Disease phenotype and overall medical management were broadly similar across deprivation groups
Comparable advanced therapy exposure • Lower anti-TNF + IM co-treatment with greater deprivation in **CD**

Differences in healthcare burden were evident despite broadly similar disease phenotype and treatment exposure
→ **Identifying the drivers of these differences should be the next priority**