

# Could an Escalation of Therapy or Intervention (ETI) calculator be used to triage appointments for patients with ulcerative colitis?

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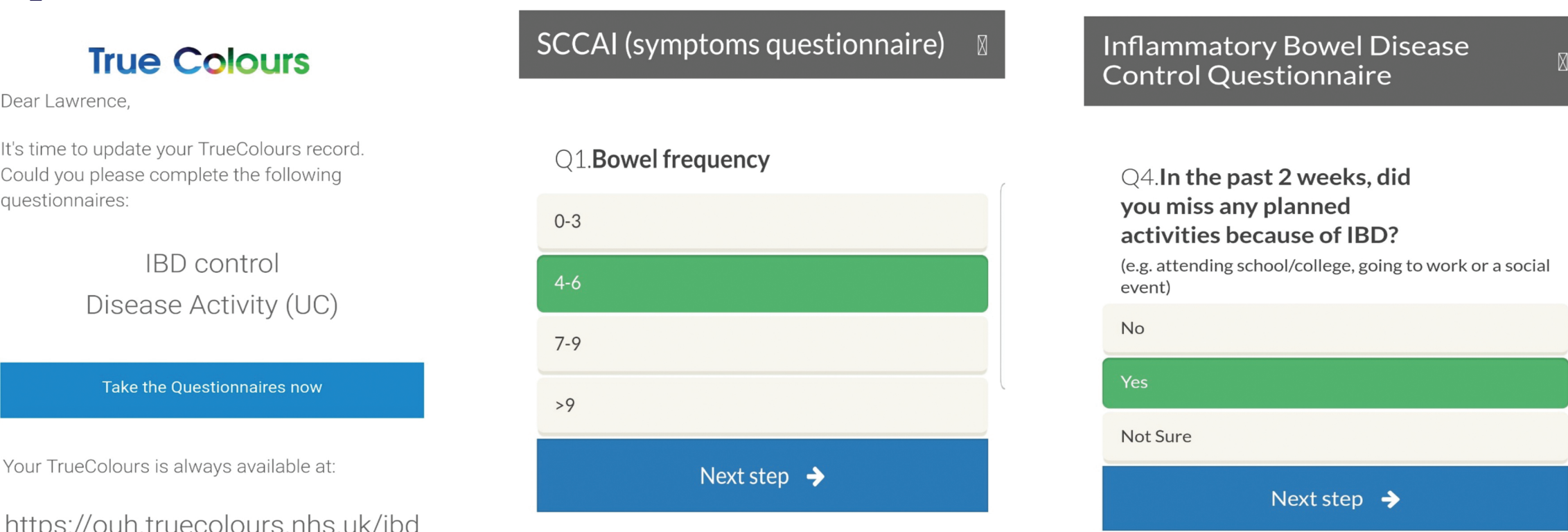
## Background

- Conventional follow up for Ulcerative Colitis (UC) places great demand on health services
- Demand might be better managed by targeting appointments at those patients who need therapeutic decisions such as an escalation of therapy or an urgent intervention (for example, colonoscopy)
- The aim of this study was to further validate the TrueColours UC (TCUC) Escalation of Therapy or Intervention (ETI) calculator in an IBD outpatient clinic setting

## Method

- TCUC is a web-based program that works through e-mail prompts that link to disease-specific questionnaires (See figure 1).

Figure 1: TCUC prompts & example questions



- In previous work, a logistic regression model on data collected through TCUC was used to create an ETI calculator (See figure 2).
- This calculator produces a probability of escalation of therapy or intervention at an outpatient appointment (OPA), based on patient-reported symptoms (SCCAI) and QoL (IBD-Control).
- From June to November 2018, 207 patients with UC under standard hospital follow-up actively using TCUC from the same centre were examined.
- For each OPA, the probability of escalation was calculated using their most recent SCCAI & IBD-Control scores.
- Clinic letters were assessed for the outcome of escalation of therapy or intervention.

## Results

- 48/207 patients had a total of 53 OPAs over the 6 month period
- 33/53 (62%) OPAs resulted in no treatment escalation
- 16/53 (30%) had escalation of therapy
- 4/53 (8%) had de-escalation of therapy
- Setting the threshold for a timely OPD at a 5% estimated probability of treatment escalation, 13/16 (81%) escalation events would have been correctly identified.
  - Escalation events missed: increasing oral 5-ASA dose (n=2), flexible sigmoidoscopy (n=1)
- Setting the estimated probability of escalation at 25%, only 9/16 (56%) escalation events would have been correctly identified.
  - Further 4 escalation events missed: commencing topical therapy (n=2), increasing azathioprine dose (n=1)

Figure 2: ETI calculator for patients with UC

SCCAI	Points	+	IBD CONTROL	Points	=	TOTAL POINTS	Probability of Escalation
0	0		0	24		0	0.01
1	7		1	22		13	0.05
2	14		2	21		34	0.25
3	21		3	20		47	0.50
4	29		4	18		59	0.75
5	36		5	16		80	0.95
6	43		6	15		100	0.99
7	50		7	14			
8	57		8	12			
9	64		9	11			
10	71		10	9			
11	79		11	8			
12	86		12	6			
13	93		13	5			
≥14	100		14	3			
			15	2			
			16	0			

## Conclusion

- Models that predict the likelihood of the need for escalation of therapy or intervention during an outpatient appointment, based on real time, remotely collected patient data, have the potential to improve outpatient clinic resource utilisation.
- Using the ETI calculator, up to 62% of planned outpatient appointments could have been deferred at the 5% threshold for treatment escalation or intervention likelihood.