

An Inflammatory Bowel Disease (IBD) Decision Support Tool Predicts Drug Specific Remission and Improves Provider Mastery in Treatment Selection

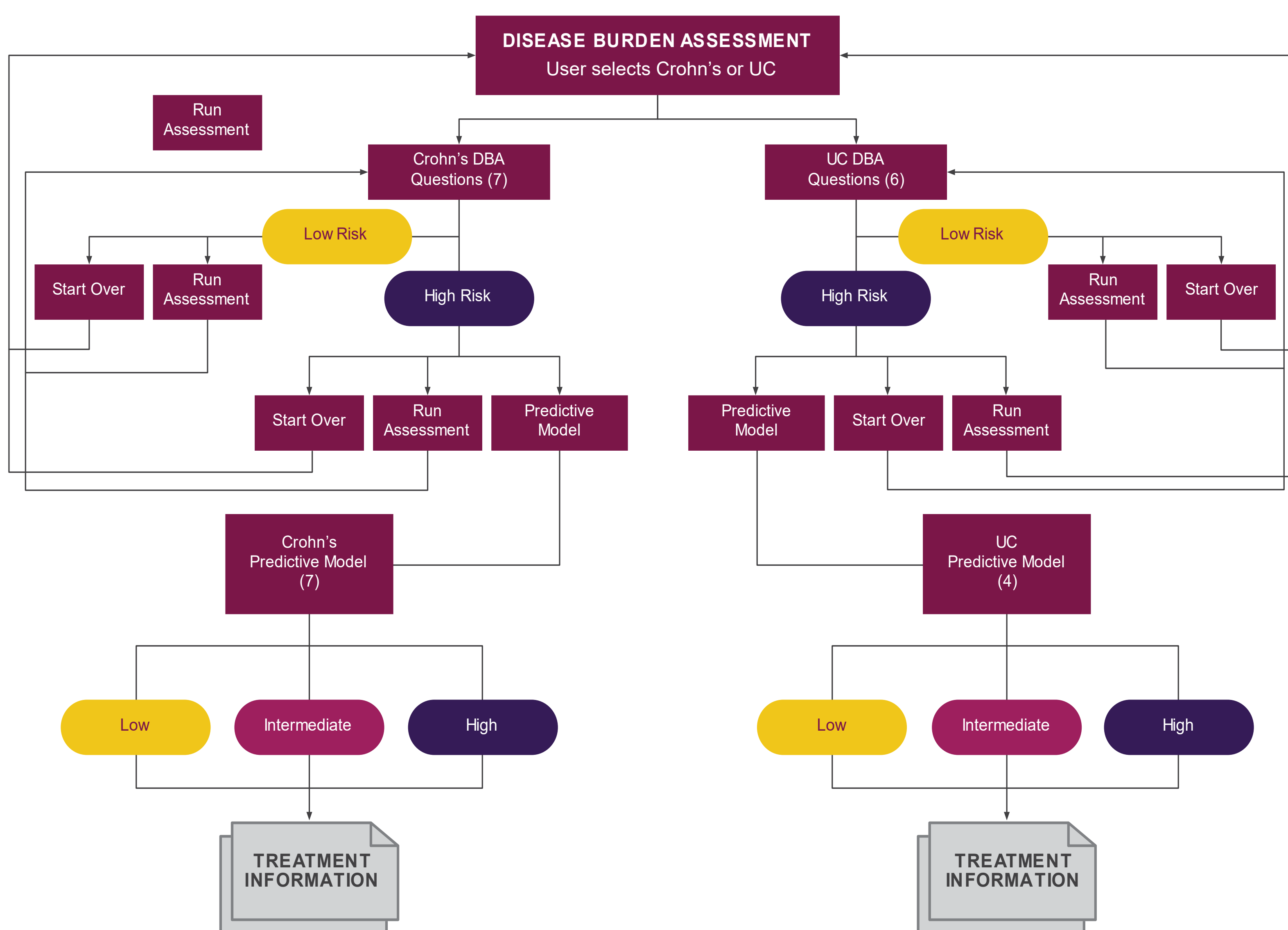
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Introduction

The IBD Clinical Decision Support Tool (CDST) was built and validated as a means of predicting response to treatment in Crohn's Disease or Ulcerative Colitis. We aimed to study the impact of this web-based tool on providers to-date. Also, we further aimed to study whether the prediction models were drug specific.

Methods: CDST

The US IBD Health Outcomes Clinical Decision Support Tool (CDST) is a web-based interactive point-of-care tool designed for clinicians to assess disease burden and provide guidance on optimal treatment selection based on prognostic and predictive modeling for patients with Crohn's disease (CD) or ulcerative colitis (UC).



Utilize the US IBD Health Outcomes CDST



Participate in RMEI IBD Activities

The IBD Clinical Decision Support Tool was developed by Parambir Dulai, MD in conjunction with RMEI and the US Health Outcomes Consortium, a collaboration of leading IBD centers across the US. These activities were supported by an educational grant from Takeda Pharmaceuticals U.S.A., Inc.

Results: CDST

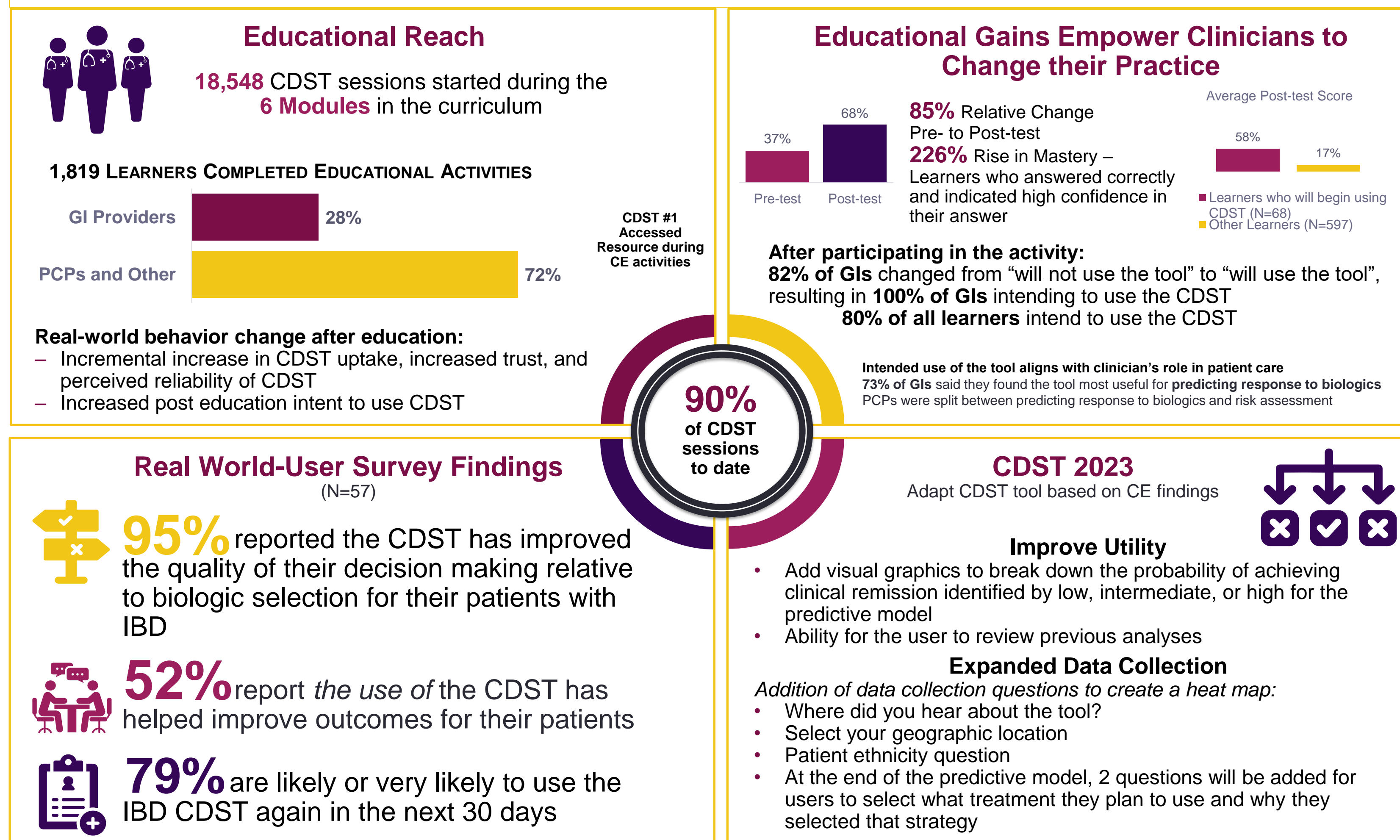


CDST Phase I & II to Phase III

	Phase I & II Oct 2019 – Nov 2021	Phase III Dec 2021 – Mar 2023
Utilization	3,822 Sessions	20,671 Sessions* Counting all sessions
Disease Focus	61% CD 39% UC	55% CD 45% UC
Predictive Model Utilization*	55% CD analysis 55% UC analysis	69% CD analysis 63% UC analysis
Treatment Utilization**	32% CD analysis 35% UC analysis	48% CD analysis 48% UC analysis
Device Usage	76% desktop 24% mobile	53% desktop 47% mobile

*Note potential bot traffic
 *Predictive Model Utilization: How many users that started the process proceeded to the Predictive Model portion of the CDST?
 **Treatment Utilization: How many users proceeded to the Treatment portion of the CDST?

US IBD Health Outcomes Consortium CME Initiatives & CDST



Methods: Drug Specific Prediction

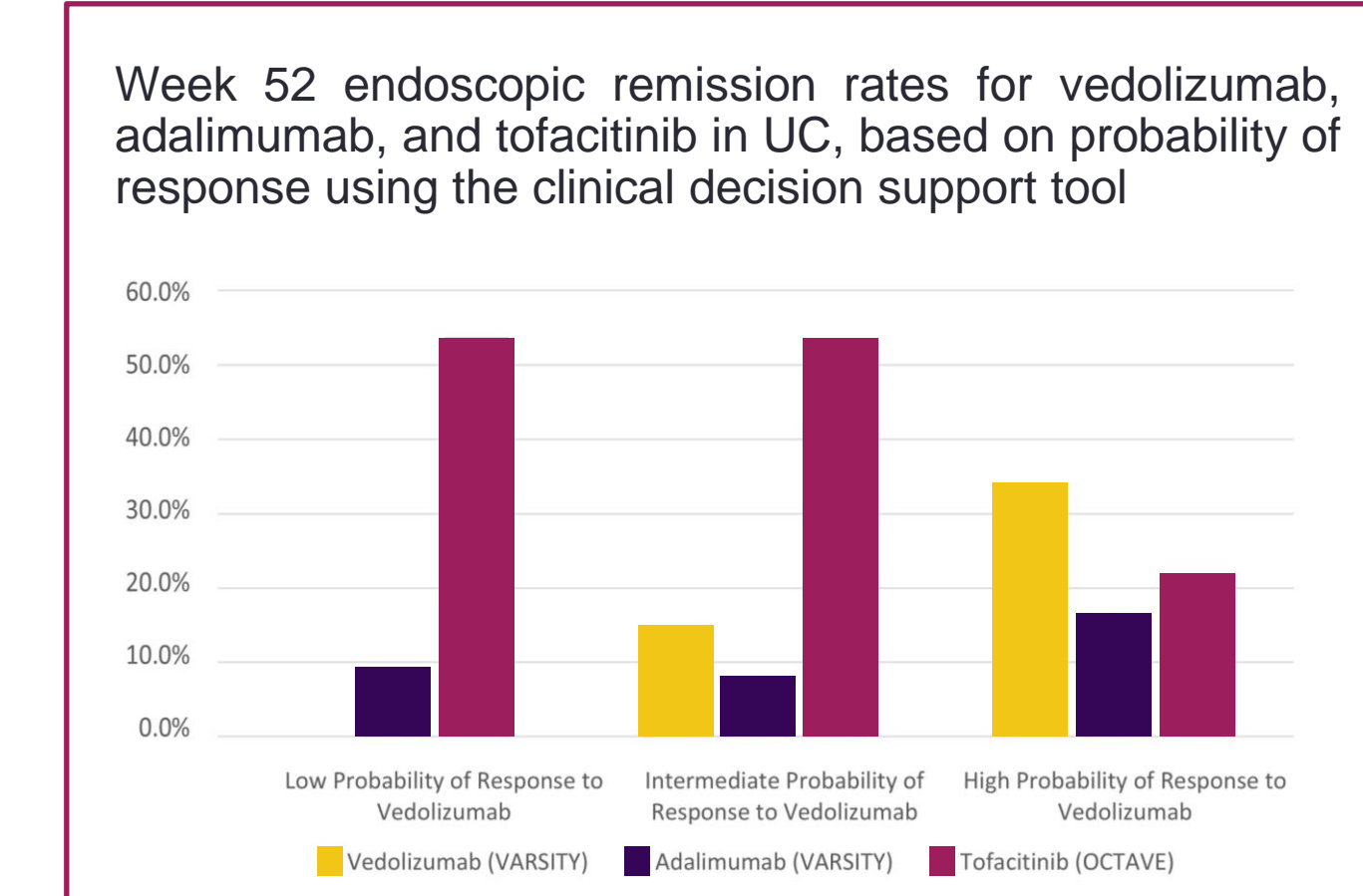
Patient level data from the VARSITY (n=207 vedolizumab; n=212 adalimumab) and OCTAVE (n=897 tofacitinib) trials were obtained through an open access platform (Vivli). Baseline demographics for all patients (endoscopic activity, TNF-antagonist exposure, disease duration, albumin) were used to calculate probability of response (low, intermediate, high) and assessments were made for differential prediction of endoscopic remission (Mayo endoscopic sub-score 0; blinded central reads) for the 3 drugs among the 3 predicted probability of response sub-groups.

The CDST was made available online through a continuing medical education (CME) initiative and users were invited to participate in an educational activity with clinical scenario-based assessments to define impacts of the CDST on knowledge, competence, and confidence. The primary outcome for the educational interventional was achievement of mastery, defined as answering the question correctly and simultaneously indicating a high degree of confidence in the answer.

The CDST is capable of differentially predicting response to therapies across predicted probabilities. Between October 2019 and March 2023, there were 20,671 CDST sessions which consists of running a patient through the treatment prediction model. A total of 1,819 users have completed the accompanying educational curriculum and impact assessment, with the CDST being the number one accessed resource by users to-date. Following their participation in the most recent education, 80% of all learners, and 100% of gastroenterologists reported intent to use the tool (82% of whom reported they would not use the tool at Pre-test). Clinicians reported intended use of the tool aligns with their role in patient care.

Results: Drug Specific Prediction

These findings, taken together with the 226% increase in mastery from Pre-test, demonstrate that the educational format and content were compelling and effective. Though users reported that implementation of CDST treatment recommendations may be affected by insurance/financial issues, the predictive output of the CDST may be effective in supporting appeals.



Conclusion

The CDST is unique among point-of-care tools in that it provides differential predictions for endoscopic remission with vedolizumab, adalimumab, and tofacitinib. This tool, which has the potential to improve patient outcomes, was supported and disseminated via web-based education. Findings from data collected during the 3 successive years of programming to-date revealed a significant increase in clinical mastery. Ultimately, clinicians engaged with this patient population who have participated in the education are more likely to use the tool regularly and correctly, as well as disseminating it amongst their colleagues.