

## A Novel Dashboard to Predict Optimal Dosing for IBD

What if you could calculate the optimal dose of infliximab for a child with inflammatory bowel disease at the click of a button? That's the idea behind a novel, clinician decision support dashboard under development at Cincinnati Children's. The RoadMAB dashboard, which is fully integrated into the medical center's electronic health record (EHR), pulls data from the patient's chart to calculate a recommended dose. The data includes body weight, infliximab levels and predictive inflammatory blood biomarkers such as erythrocyte sedimentation rate and albumin.

“Standard dosing regimens of infliximab are associated with improved outcomes, but the standard dose doesn't work for more than half of the children who use it,” says Phillip Minar, MD, MS, a pediatric gastroenterologist at Cincinnati Children's. “Every physician has their own approach to optimize therapy, and many of us change the starting dose based on our experience. The dashboard standardizes the calculation, whether you are trying to establish a starting dose or adjusting the treatment plan for a patient who has been on the drug before but hasn't achieved a therapeutic result.”

The dashboard uses pharmacokinetic model-informed strategies to provide a recommended dosing scenario. It also presents graphs to help the physician visualize how alternative dosing regimens could affect the patient-specific drug level at subsequent infusions.

### Pragmatic Research to Compare Dosing Strategies

Minar is leading a pilot study at Cincinnati Children's with the goal of generating supportive data to conduct a pragmatic multicenter, randomized controlled study. The study will compare dashboard dosing to the typical dosing strategy (standard of care) of proactive therapeutic drug monitoring without the dashboard. The pilot study is funded by the Crohn's and Colitis Foundation and the Cincinnati Children's Research Foundation with the goal to expand the study to additional pediatric centers across the US. The objectives are to identify which method is most effective in delivering the right dose to the right patient to achieve targeted drug levels, improve patient-reported outcomes and attain gut healing with minimal side effects.

Minar and his Cincinnati Children's colleagues in pediatric gastroenterology, pharmacokinetics and information systems began developing the dashboard in 2019. They worked with software designers to create a user-friendly interface that can be embedded into different EHRs, including Epic and Cerner.

“We have engaged various clinicians for the final dashboard design to maximize usability, and we have good data so far showing that the dashboard works,” Minar says. “One of our next steps is to incorporate additional biologic therapies to the dashboard. These drugs have broad indications, which means that someday other specialties could utilize the dashboard. As a result, children with conditions such as rheumatoid arthritis, psoriasis, bone marrow transplant complications and other concerns could benefit from this enhanced level of precision dosing.”

To learn more about the dashboard or research study, contact Phillip Minar, MD, MS at [phillip.minar@cchmc.org](mailto:phillip.minar@cchmc.org).

