



Pre-operative optimization in patients with inflammatory bowel disease

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No Disclosures





What shall we talk about?

- ❑ **Optimization** : what is it?
- ❑ Do patients with IBD need **optimization** more than other patients?
- ❑ A **roadmap** for optimization?
- ❑ Evidence about **Optimization**
- ❑ Challenges
- ❑ **OSRC** role in IBD research
- ❑ The prospective of **optimization**





IBD is thought to result from
an **inappropriate inflammatory** response to the
gut microbial flora in
genetically predisposed individuals





What is Optimization?

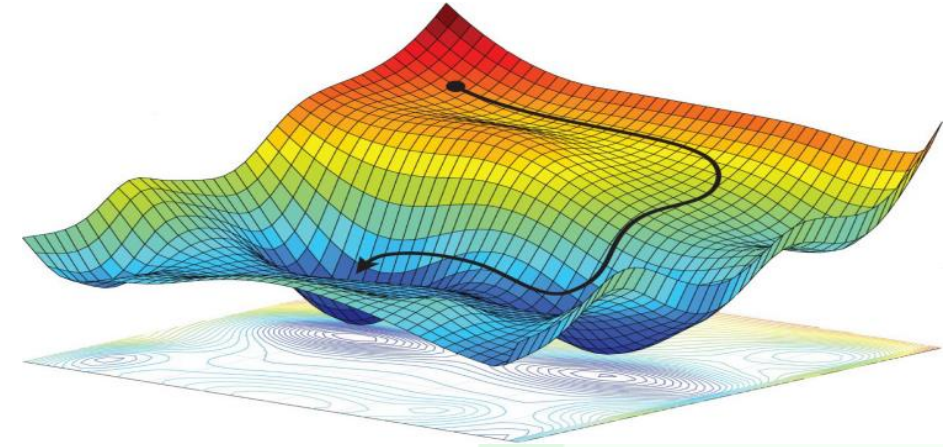
Dictionary:

The act of making something as good as possible (Cambridge)

The action of making the best or most effective use of a situation or resource (Oxford)

Preparing the **patient** and the **surgeon** for operation and postoperative recovery

The goal of “optimizing” patients’ health prior to surgery is to minimize the risk of postoperative complications, decrease length of stay in the hospital, reduce unplanned re-admissions and enhance the overall health and surgical experience.



Optimization Roadmap: Surgeon

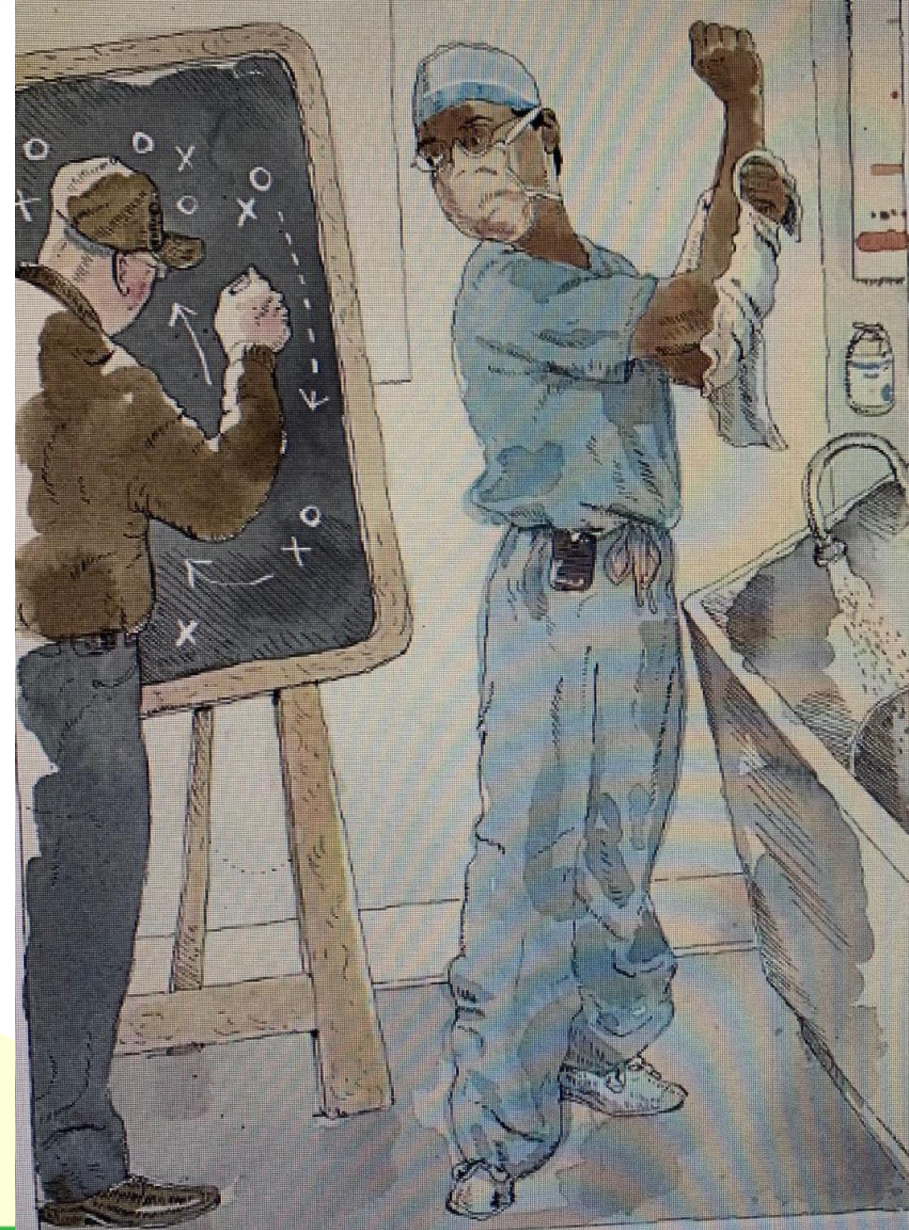
☐ Multi-disciplinary team conference

- Windsor. Colorectal dis 2007
- Mekechuk Inflamm Bowel Dis 2008
- Ricci et al Digestive and Liver Disease 2008
- Hernández-Sampelayo et al Journal of Crohn's and Colitis 2010
- Habal et al Aliment Pharmacol Ther 2012
- Garrick et al. Frontline Gastroenterology 2013
- Panes et al Journal of Crohn's and Colitis 2014
- Calvet et al Journal of Crohn's and Colitis 2014 (consensus statement: Quality indicators for IBD Comprehensive Care)
- Gasparetto et al Journal of Multidisciplinary Healthcare 2015
- Malgras et al. Dig Dis Sci 2015
- Bennett et al World J Gastroenterol 2015
- Louis et al Journal of Crohn's and Colitis 2015
- Law et al. Inflamm Bowel Dis 2016
- And more...

☐ CT and MRI scanning

- Spinelli et al. Aliment Pharmacol Ther. 2014 Nov;40(9):1009-22.
- Patel. Nat Rev Gastroenterol Hepatol. 2016 Dec;13(12):707-719
- Zangenberg et al Int J Colorectal Dis. 2017 Dec;32(12):1663-1676

☐ IBD surgeon?





Optimization Roadmap Patient

- ❑ **Preoperative medications?**
 - Medications to treat **IBD**
 - Steroid **stress dose**
 - **Antibiotics** (prophylaxis and/or treatment)
- ❑ **Nutrition**
- ❑ Correction of **anaemia**
- ❑ **Abscess drainage**
- ❑ Psychological and physical **rehabilitation**
- ❑ Enhanced Recovery Pathways (**ERP**)
- ❑ **Thrombo-embolic** prophylaxis
- ❑ **Smoking** cessation
- ❑ **Bowel preparation**
- ❑ **Treatment of comorbidity**
- ❑ **Timing of intervention**





❑ **Preoperative medications?**

- Medications to treat **IBD**

In patients needing surgical intervention for inflammatory bowel disease, biological treatment **can be continued** during peri-operative period.

In patients needing surgical intervention for inflammatory bowel disease, immunomodulators **can be continued** during the peri-operative period.

Steroid **withdrawal** is strongly recommended prior to surgical interventions in patients with IBD whenever possible. Where complete withdrawal is not achievable, progressive tapering to the lowest dose is recommended

- **Antibiotics** (prophylaxis and/or treatment)

Longer use of pre-operative prophylactic antibiotics in IBD **might be beneficial**

Zerbib. Aliment Pharmacol Ther. 2010





❑ Preoperative medications?

- Medications to treat IBD

In patients needing surgical intervention for inflammatory bowel disease, biological treatment **can be continued** during peri-operative period.

How Confounding Factors Were Addressed in the Different Studies?

- Type of medication
- Time interval between medication and surgical intervention
- Drug concentration in the peripheral blood (serum levels of biological agents)
- Antidrug antibodies

Factors with questionable impact e.g. Type of surgical intervention, access to abdominal cavity, BMI, ASA, disease phenotype, previous resections, length of resected segment, duration of operation, preoperative intra-abdominal sepsis, disease duration, urgency of surgical intervention, surgeon's experience the type/configuration of anastomosis or stoma .

Factors expected to have large impact but were less well studied e.g. Preoperative optimization & bowel preparation

Factors which would be expected to have a large impact e.g. medications, nutrition, smoking, Crohn Disease Activity Index

The screenshot displays the Crohn's & Colitis 360 website. The header includes the journal title 'CROHN'S & COLITIS 360' and the 'CROHN'S & COLITIS FOUNDATION' logo. A navigation bar contains links for 'Issues', 'More Content', 'Submit', 'Alerts', and 'About'. A search bar is located on the right. The main content area features the article title 'Biological Treatment and the Potential Risk of Adverse Postoperative Outcome in Patients With Inflammatory Bowel Disease: An Open-Source Expert Panel Review of the Current Literature and Future Perspectives' by the 'Open Source Research Collaborating Group (#OpenSourceResearch)'. The article is from 'Crohn's & Colitis 360, Volume 1, Issue 3, October 2019, otz021', published on 08 August 2019. Metrics shown include 9 citations, 2,338 views, and 43 altmetrics. A sidebar on the right offers 'Email alerts' (Article activity, Advance article, New issue, In progress) and 'More metrics information'. The article's 'Background' section states: 'There is widespread concern that treatment with biologic agents may be associated with suboptimal postoperative outcome after surgery for inflammatory bowel diseases (IBD). We aimed to search and analyze the literature regarding the potential association of biologic treatment on adverse postoperative outcome in patients'.

Open Source Research Collaborating Group, Biological Treatment and the Potential Risk of Adverse Postoperative Outcome in Patients With Inflammatory Bowel Disease: An Open-Source Expert Panel Review of the Current Literature and Future Perspectives, Crohn's & Colitis 360, Volume 1, Issue 3, October 2019, otz021



❑ Nutrition

The **prevalence** of malnutrition is higher in patients with active disease and in CD compared with UC. Malnutrition in surgical IBD patients worsens clinical outcomes

In the pre-operative period, all patients should be **routinely screened for malnutrition**. In those identified to be at risk, full nutritional assessment should be performed.

Preoperative exclusive enteral nutrition in patients with stricturing or penetrating Crohn's disease improves nutritional status and may reduce post-operative complications.

In malnourished patients with CD administration of **parenteral nutrition** preoperatively may reduce overall postoperative complications.





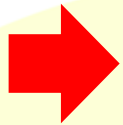
❑ Correction of **anaemia**

Iron deficiency anemia affects approximately 45% of patients with IBD, negatively impacts the quality of life and significantly burdens healthcare system.

Pathogenesis of iron deficiency in IBD patients is multifactorial, including intestinal bleeding, malabsorption, and inadequate oral intake.

Screening for anaemia is recommended prior to IBD surgery

Oral iron is safe, affordable, and easy to administer, BUT patients often suffer from intolerable gastrointestinal side effects, and particularly in IBD patients, oral iron may increase inflammation and contribute to flares.



Intravenous iron is considered first-line treatment for patients with active disease, severe anemia, oral iron intolerance, and erythropoietin requirements





❑ Abscess drainage

Radiologically guided **percutaneous drainage** can avoid surgery in up to 30% of patients presenting with spontaneous Crohn's-related intra-abdominal abscesses.

BUT **without subsequent surgery** patients will have worse prognosis in terms of recurrence, LOS, re-admission, and stoma construction.

Option in **selected** patients with poor health status or poor prognostic factors

Surgery is indicated after abscess drainage but when?

An **interval of at least 2 weeks** after successful PD correlated with reduced risk of abscess recurrence, help to control CD activity and achieve good preoperative optimization. .





❑ Psychological and physical **rehabilitation**

The need for peri-operative **psychological care** for patients with IBD who undergo surgery should be considered

IBD patients experience variable degrees of **limitation in activity after surgery**.

The speed and extent of recovery are influenced by many factors and should be included in preoperative counselling

2015 European Society of Coloproctology (ESCP) collaborating group. World J Gastrointest Surg. 2019

Sarcopenia in patients with IBD is associated with more aggressive disease course and higher short and long term post operative complication rates

Perioperative **physical rehabilitation** may be beneficial to optimize postoperative recovery in IBD.

---multidimensional

---adapted to patients' baseline characteristics

Physical rehabilitation should be delivered in a **setting** that facilitates patient participation





❑ Enhanced Recovery Pathways (**ERP**)

ERP is recommended to improve immediate postoperative recovery. These protocols should be **tailored to the specific needs** of IBD patients.

Re-introduction or initiation of **biological and/or immunomodulatory** therapy after abdominal surgery depends on multiple factors such as the type of agent, the presence of residual disease, risk stratification for recurrence and postoperative complications

❑ **Thrombo-embolic** prophylaxis

Patients with IBD have increased risk of **thromboembolic events**. Thromboprophylaxis is recommended for all surgical patients and should be extended after discharge particularly in patients with relevant risk factors.

❑ **Smoking** cessation

All patients with IBD should be advised to **stop smoking** (eventually offered help to stop smoking) prior to elective surgery.





❑ Bowel preparation

Preoperative mechanical bowel preparation **might be considered** before colorectal surgery in patients with CD, especially in patients undergoing ileocolic resections for penetrating disease

Iesalnieks et al. Inflamm Bowel Dis 2018

❑ Stoma counselling

Preoperative stoma counselling and marking should be carried out by appropriately **trained specialists** such as stoma therapists or specialist nurses.

Patients can benefit from preoperative contact with patients with living with stoma or ileo-anal pouch

❑ Treatment of comorbidity

Comorbidities must be investigated and treated accordingly prior to IBD surgery e.g.

Zangenberg et al int j. colorectal dis. 2017

❑ Timing of intervention

Urgent bowel resection in patients with CD is associated with higher risk of overall post-operative complications and IASCs and compared to elective surgery

Udholm. Int J Colorectal Dis. 2021 Feb;36(2):253-263.

Iesalnieks et al. Inflamm Bowel Dis 2018

ECCO topical review: Roadmap to optimal peri-operative care in IBD. Sebastian et al. JCC 2022 IN PRESS

Udholm. Int J Colorectal Dis. 2021 Feb;36(2):253-263

Zangenberg et al int j. colorectal dis. 2017





Optimization Roadmap Patient

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 - Medications to treat IBD
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Category	Recommendations	Level of evidence
Pharmacological considerations	<ul style="list-style-type: none">• Preoperative steroid withdrawal is recommended.• Thiopurines preoperative are safe.• For elective surgeries, it may be prudent to plan the procedure remotely from the last dose of an anti-TNF agent, although the recommended duration of such delay is unclear.	IIb III III
Steroid stress dose	<ul style="list-style-type: none">• If steroid withdrawal is not possible, the patients should continue to use their daily steroid dose preoperatively with no need for extra doses.	Ib
Nutrition	<ul style="list-style-type: none">• Screening for malnutrition with a validated screening test for example NRS-2002.• Nutrition care plan for those at risk.	III
Thrombosis prophylaxis	<ul style="list-style-type: none">• Anticoagulants should be given to all patients with no obvious risk of bleeding.• If possible anticoagulants should be given 4 weeks postoperatively	III IV
Treatment of preoperative sepsis	<ul style="list-style-type: none">• Intra-abdominal abscess should be drained percutaneous using ultrasound guidance.	III
Prophylactic antibiotics	<ul style="list-style-type: none">• Oral antibiotics should be given 24 h prior to surgery complementary to the perioperative IV antibiotics given (the evidence only counts for patients with ulcerative colitis).• Longer preoperative treatment with antibiotics is not supported by evidence	II III
Mechanical bowel preparation	<ul style="list-style-type: none">• Not supported by evidence.	III
Comorbidity	<ul style="list-style-type: none">• Must be investigated and treated accordingly prior to surgery.	III
Smoking cessation	<ul style="list-style-type: none">• Smoking stop is advisable when the patient is booked for elective surgery.	III





Challenges in IBD-research

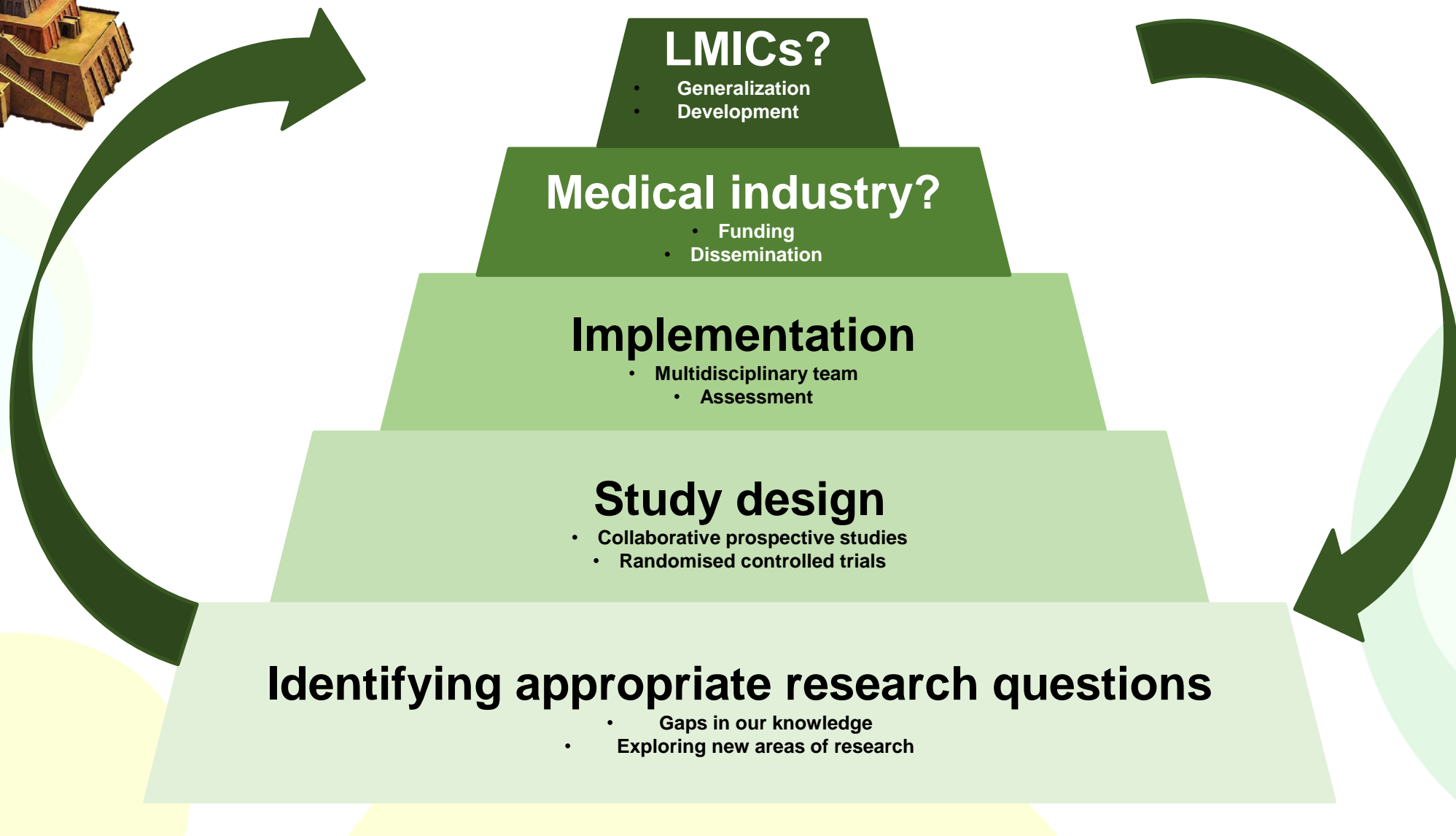
Funding

Multidisciplinary

Heterogeneity of the disease and management

Sample size





LMICs?

- Generalization
- Development

Medical industry?

- Funding
- Dissemination

Implementation

- Multidisciplinary team
- Assessment

Study design

- Collaborative prospective studies
- Randomised controlled trials

Identifying appropriate research questions

- Gaps in our knowledge
- Exploring new areas of research

A suggestion to tackle challenges in research that investigate pre-operative optimization inpatients with inflammatory bowel disease





OpenSourceResearch

Implementing information technologies
in medical research



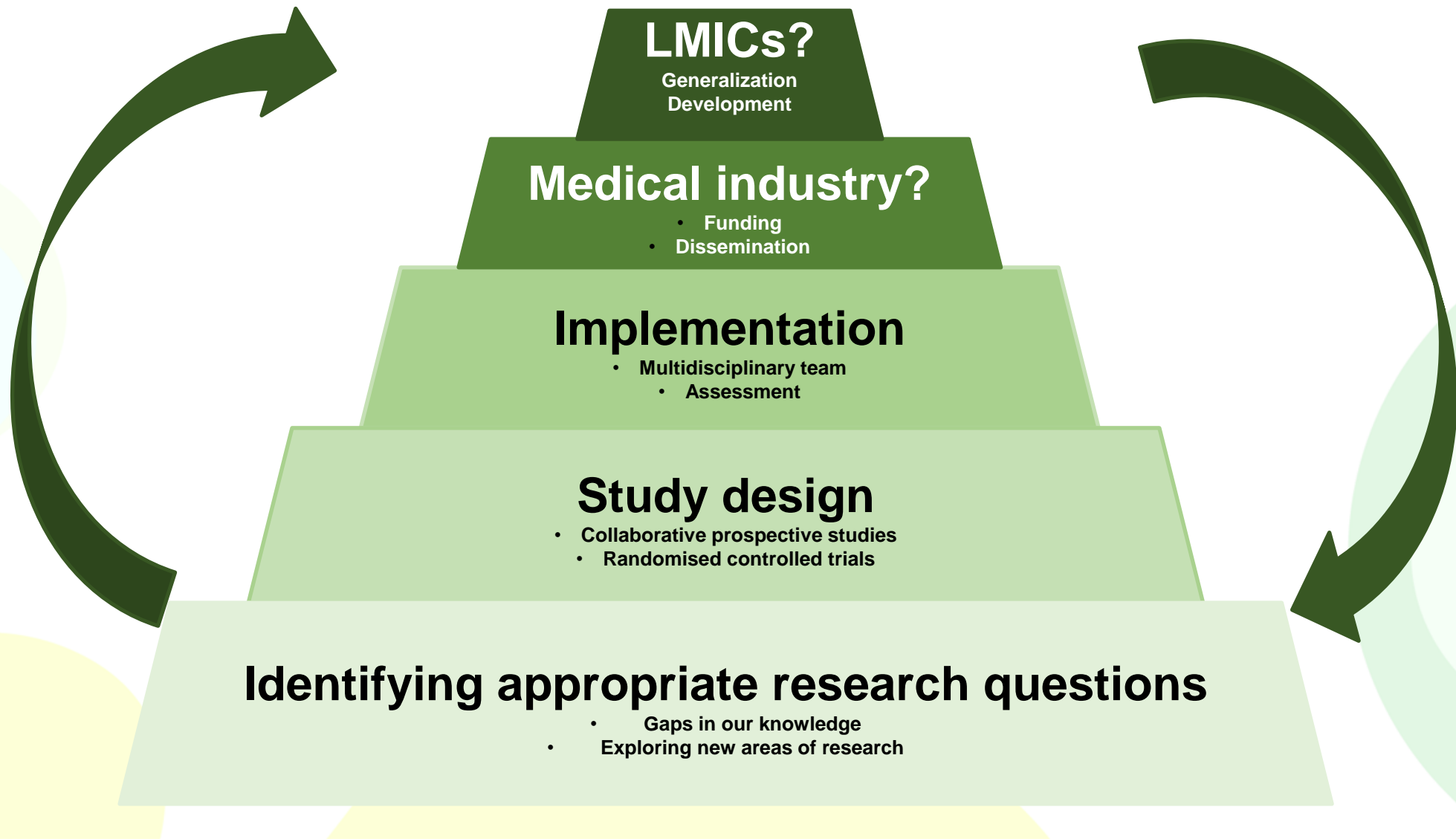


Figure 1. A suggestion to tackle challenges in research that investigate pre-operative optimization inpatients with inflammatory bowel disease

