

The Problem

Leaks within the gastrointestinal tract cause non-sterile food and bacteria to leak into the sterile body cavity, which is **fatal if left untreated**. Currently, **there are no FDA-approved devices specialized for gastrointestinal leaks**, so surgeons and gastroenterologists are left to improvise their own devices. This results in a **2-3x increase** in standard upper endoscopy duration, and devices' bulkiness **traumatizes surrounding tissues**. If a prepackaged slim device was available, it would lead to **higher clinician efficiency** and **better patient outcomes**.

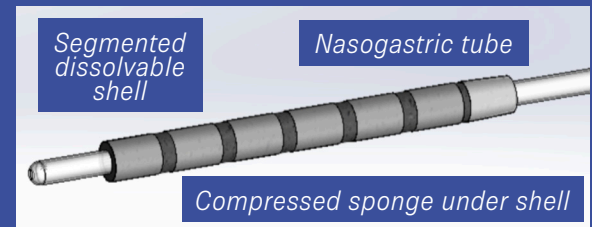
6.5M GI surgeries/yr in USA
1.3M GI leak incidents
\$175K added to patient bills
32.1 extra days in hospital

The Solution

Simpl-E-Vac delivers endoscopic vacuum therapy (EVT or E-Vac), an emerging effective treatment, to a GI leak using a customer-inspired approach:

- » **Ready-to-use:** nasogastric tube + guide wire + multi-layered sponge system
- » **Adaptive leak sizing:** dissolvable shell + self-expanding sponge

Simpl-E-Vac will reduce the cost to perform EVT to hospitals, and results in better clinician efficiency for improved patient outcomes.



Left: status-quo device

Right: simpl-e-vac device sterilized in disposable pouch

The Strategy

Go-to-market:

- » **Target "champion" clinicians** through conferences and journals
- » **Access Value Analysis Committees** through connections at large research hospitals in top 20 US metropolitan areas
- » **License design** to existing manufacturers, like KCI, who sell vacuum therapy devices

Financials:

- » **FDA 510(k) clearance in year 3, market in year 4**
- » 40% of sales revenue directed towards operations

Total Accessible Market: global vacuum therapy device market in 2022, increasing to **\$2.5B by 2030**

Serviceable Accessible Market: global internal surgical vacuum therapy device market in 2022 (11.8% of TAM)

Serviceable Obtainable Market: US internal surgical vacuum therapy device market in 2022



Core features:	Improvised	Eso-SPONGE	VacStent	Simpl-E-Vac
Fully seals leak site	●		●	✓
Creates vacuum		●	●	✓
Adaptable sizing	●		●	✓
Easy tool preparation		●	●	✓
Prevents leak infection	●	●		✓
Enables feeding			●	✓

Traction

- » Patent-pending technology
- » IRB application under review for human subject study; mannequin tests passed
- » 3rd Place awardees at 2023 Dempsey Startup Competition
- » 2023 Regional NSF I-Corps Grant awardees with 30+ customer discovery interviews conducted
- » Summer 2023 CoMotion Innovation Gap Fund winners

The Team Engineering + Clinical Expertise

Anya Prasad — UW Mechanical Engineering alumna
Tom Mikolyuk — UW Mechanical Engineering alumnus
Kane Guo — UW Mechanical Engineering alumnus
Duy Do — UW Mechanical Engineering student
Dr. Eric Seibel — UW Mechanical Engineering faculty
Dr. Adam Templeton — UW Medicine gastroenterologist
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