InFluo

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JOHNS HOPKINS BIOMEDICAL ENGINEERING

Background

- **Abscesses**, infected fluid collections, can develop in the body and need to be removed to prevent sepsis.
- **Percutaneous catheters** generally drain fluid for **weeks to months**.
- Catheters **often clog**, leading to repeat procedures, longer drainage times, and higher costs for patients and hospitals.

Opportunity

USA
3,986,655 drains placed across hospitals in 2023[1]

JHMI
1000 drains placed anually between 2009 and 2023[1]

Average cost of a procedure is **$505.50** and complications occur approximately **19%** of the time[2]

TOTAL
$2.391 billion market size overall[2]

COM
$381 million market size for complications[2]

1. Karimov, J. "Incidence of chest tube clogging after cardiac surgery: a single-centre prospective observational study." European Journal of Cardio-Thoracic Surgery. 2013.
2. "Cost of Abscess Incisison and Drainage." *Care Calculator by Sidecar Health*.

Need

Interventional radiologists need a method to **percutaneously drain fluid collections** in order to **reduce repeat patient visits** caused by **high viscosity fluid and clot formation obstructing the catheter**.

Only 1 procedure

Drains variety of fluids

Meshes into workflow

Simple to use

Less expensive

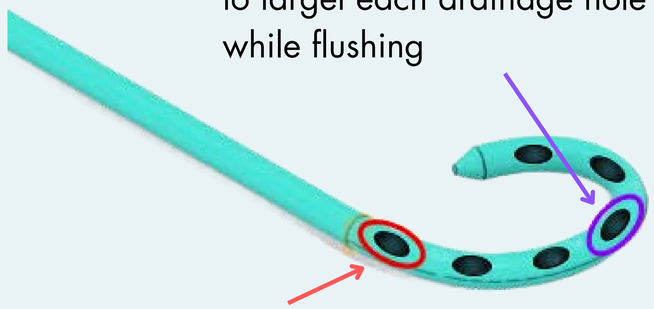
Comfortable

Our Innovation

We developed a device that **integrates within current drainage workflow**. By targeting the currently ignored **side drainage holes**, we can **revolutionize flushing efficacy**.

Improved Flushing

Our device makes it possible to target each drainage hole while flushing



Generally during flushing, saline solution will escape from the first drainage hole

User Scenario

Preparation: Gather saline solution and syringe.

Inserting Syringe: Connect syringe to flushing device.

Flushing: Inject saline solution into catheter while device is inserted

Progressive Unclogging: Every side drain hole is unclogged