



Digital Extraventricular Drain (DEVD)

TECHNOLOGY NUMBER: 7397

Accelerate Blue Foundry - 2025 (Life Sciences)

Technology ID

7397

Category

Medical Devices

Life Sciences

Accelerate Blue Foundry -

2025/Life Sciences

Inventor

Rodney Daniels

Further information

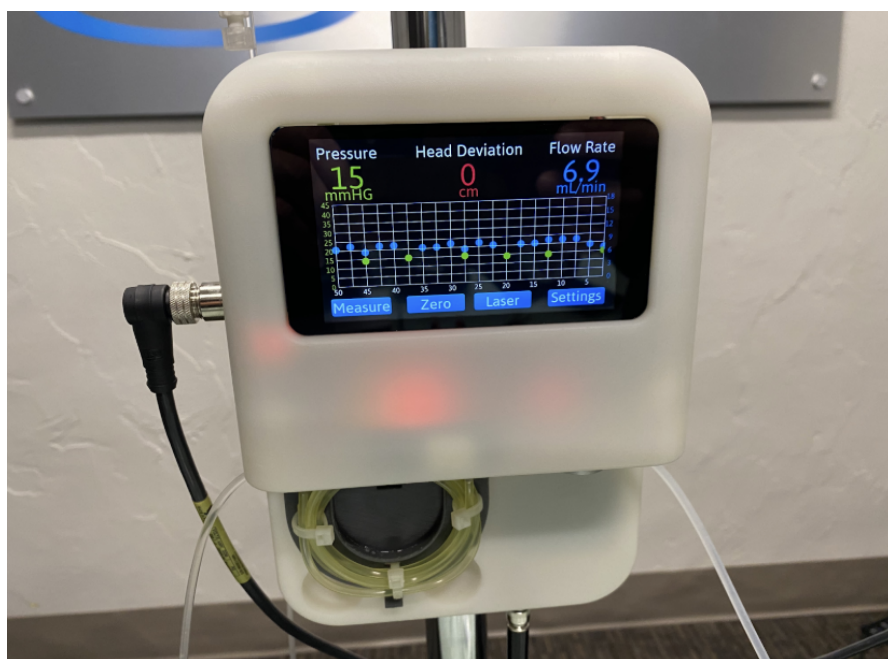
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OVERVIEW

A smart digital system for measuring and managing intracranial pressure (ICP) and cerebrospinal fluid (CSF) flow in traumatic brain injury (TBI) patients (and other neurologic disorders), automatically adapting to patient movement and condition changes, with real-time alerts and data—offering safer, more accurate care and substantial labor savings, especially in demanding settings like ICUs, field hospitals, and during patient transport.



DESCRIPTION

This technology replaces traditional, manual extraventricular drains (EVDs) with a fully digital setup that not only tracks ICP but also measures and controls the CSF flow continuously (Image Above). Unlike existing EVDs that heavily rely on frequent nurse management and adjustment and skilled clinician oversight (Image Below), this device automatically detects changes in a patient's position or status and adapts its operation accordingly. It uses integrated sensors and a control system to precisely regulate and record fluid flow, warning clinicians of any dangerous changes, and greatly reducing the chances for human error. This automation and smart alerting are completely new compared to the current standard.

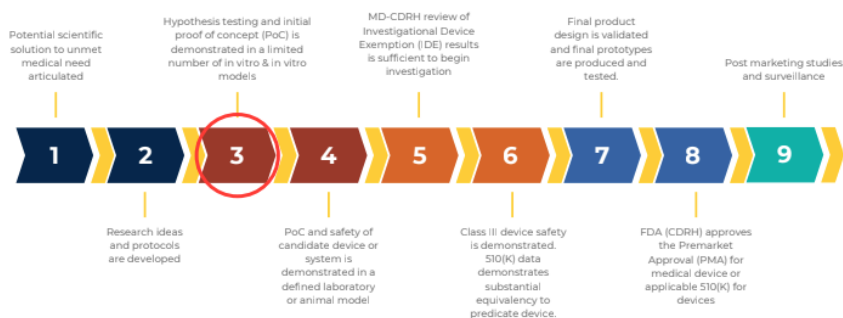


VALUE PROPOSITION

- Automatically adjusts for patient movement and condition, reducing caregiver intervention and human error.
- Continuously measures and controls ICP and CSF flow, providing immediate data and alerts for critical changes.
- Increases safety and efficiency in environments with limited staff or rapidly changing conditions, such as during transport or in intensive care.

TECHNOLOGY READINESS LEVEL

Medical Device Technology Readiness Levels



INTELLECTUAL PROPERTY STATUS

ALL ISSUED PATENTS:

- [US12109378](#)

ALL PENDING PATENTS:

- EP3713484A4 (Pending)
- US20250010045A1 (Pending)

MARKET OPPORTUNITY

There is a significant clinical need for safer, more accurate, and labor-saving systems to monitor ICP and CSF drainage after brain injuries, especially in critical care, emergency transport, military, and resource-limited hospital environments. Approximately 436,000 patients annually in the US are placed on EVDs for conditions including TBI, brain hemorrhage, brain tumor surgery, and hydrocephalus. Real-time, automated tools like this could dramatically reduce mortality and improve outcomes by catching complications earlier and minimizing errors. Hospitals, ambulance services, military medical units, and developed critical care centers are all high-value target markets.

Industry trends show a growing demand for smart medical devices that reduce clinician workload and improve patient safety, particularly in high-acuity and mobile care settings. Fellows report and other information available upon request.

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