

The Women's Board of The Johns Hopkins Hospital  
Billings Administration Building, Room 221  
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Phone: (410) 955-9341 - Fax: (410) 614-9856 - Email: jhhwb@jhmi.edu

## GRANT APPLICATION FOR FISCAL YEAR 2024

**DIRECTIONS:** Please complete the entire form. If appropriate, indicate "Not Applicable" and justify. The original application plus an electronic version is due in The Women's Board office on or before 4:00 pm on Friday, January 6, 2023. Only one (1) application from each department will be accepted. Late or incomplete applications will not be considered.

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DATE: December 27, 2022  
CLINICAL DEPARTMENT: Neurology

CONTACT PERSON: Mona Bahouth, MD, PhD  
Phone: 410-955-2228  
Email: mbahout1@jhmi.edu

TITLE OF REQUEST: Hemodynamic response to increasing activity after stroke

PHYSICAL LOCATION OF PROJECT: 12 west - Brain Rescue Unit (BRU)

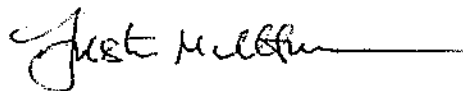
ABSTRACT (Non-technical overview - 150 words or less):

Stroke remains a leading cause of adult disability. Activity is the cornerstone for stroke patient recovery. To date, patients with acute stroke are often maintained in bed and inactive due to concern for blood pressure fluctuations during activity and fears that these fluctuations would have a direct impact on blood supply to the brain.

Optimized blood pressures promote brain perfusion after stroke minimize amount of brain injury and decrease long term disability. Blood pressure regulation after stroke is critical to brain perfusion during a time when protective autoregulatory mechanisms are impaired. To date, clinicians have avoided out of bed activities for fear of disrupting cerebral blood flow in patients who will fluctuate blood pressures drastically.

Thus, we are requesting continuous blood pressure monitors that can be used while patients are active in recovery related activities to optimize patient safety and provide meaningful data to advance the daily therapeutic activity plan.

SIGNATURE OF CLINICAL DEPARTMENT CHAIRPERSON:



(Please type) Chairperson Name: Justin McArthur MBBS, MPH

Chairperson Title: Director, Department of Neurology

Chairperson Email: [jm@jhmi.edu](mailto:jm@jhmi.edu)

**NOTE:** Questions 1-6 must be answered. Please be thorough and concise.

**1. Impact on patient care:**

The primary goal for hospitalized stroke patients is to promote out of bed activity without threatening blood flow to the brain. With the addition of these monitors we hope to more safely increase post-stroke activity on the Brain Rescue Unit. The availability of these continuous hemodynamic monitors will allow for minute by minute monitoring of hemodynamic status while patients participate in therapeutic, out of bed activities that are prescribed for recovery.

**2. Number and type of patient who will benefit annually from this award:**

An estimated 400-500 patients treated on the Brain Rescue Unit who would benefit from the availability of this technology.

**3. Significance:**

Acute stroke patients are reliant on the precise amount of blood flow to the brain after stroke to avoid additional brain injury. It is common for patients to have hypotension (low pressure) once ambulating for a variety of dysautonomic reasons and therefore have experienced prolonged bedrest to avoid this issue. Optimizing hemodynamic safety with continuous monitoring data will allow for increased therapeutic activity, avoidance of hemodynamic safety events, and the promotion of accelerated brain healing after stroke. The first weeks after stroke are a critical window for therapeutic activity to promote brain healing. With these devices and ability to monitor patients more closely, we can increase safe activity to improve long term outcome after stroke.

**4. Implications, if any, that this has to the Covid pandemic:**

Not COVID related though patients with COVID are admitted to the stroke unit and would benefit from using this device.

**5. Personnel (Please note that we cannot fund grants that incorporate any salaries.)**

No additional funding for personnel. We will teach existing staff to use these devices

**6. Budget: Total Request: \$202,320**

**A. Equipment - price per item and discount if applicable for multiples. Please add compelling justification if multiples are requested. (Itemize and justify):**

The Hemosphere advanced monitoring system allows for continuous blood pressure monitoring and measurement of cardiac output. We have requested three devices since the stroke unit average census is 15 and patients would wear the device for several hours per therapeutic activity session. The itemized quote is attached.

**B. Supplies (Itemize and justify):**

1. The Hemosphere plus Clearsight monitoring system allow us to measure continuous blood pressures, cardiac output, and intracranial flow dynamics.

2. The pressure controller cover, roll stand, and protection program allow us to store and use these devices safely

See attached for additional detail.

**C. What is the out-of-pocket cost to the patient? (Itemize and justify):**

There is no out of pocket cost to the patient

**D. Other Expenses, Hidden Costs (Please consider whether your grant proposal contains other costs that would require hospital funding, such as structural modifications for equipment installation, operating costs such as additional FTEs, training costs, etc.)\***

The only 'hidden cost' is associated with education of our staff on the use of these devices. We would incorporate it into the technology training days and our stroke team would provide additional ongoing education

**7. Have you requested funds from any other source?**

☐ Yes (What was the result?)

[Click or tap here to enter text.](#)

☒ No (Explain why)

No funds for these devices have been requested to date aside from in-department request.

\* If you have any concerns about additional costs of your grant to the hospital please feel free to contact the CFO Katina Williams @ [kwil1249@jhmi.edu](mailto:kwil1249@jhmi.edu). She is aware of our grant process. All grants selected for funding will eventually be submitted for final hospital approval by the Women's Board. It is not required for the departments to request approval from the hospital prior to submission on January 6, 2023.