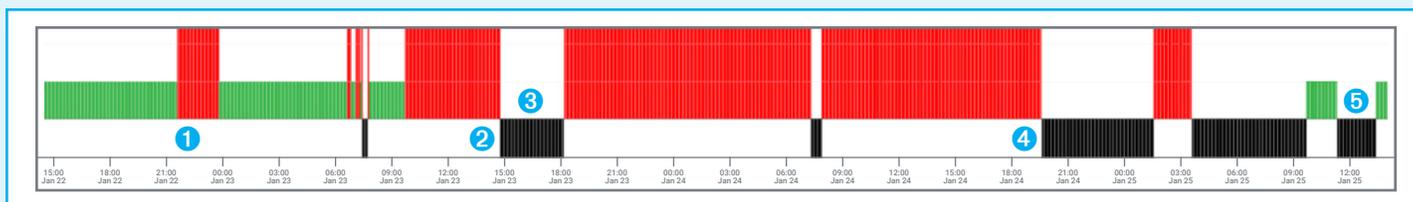


## Case Study: Undetected Hemorrhage



Uncontrolled bleeding is the most common cause of preventable mortality following both military and civilian trauma. Catastrophic hemorrhage is the second leading cause of mortality following a traumatic injury and is responsible for nearly half of all deaths within the first 24 hours. Delay in recognizing substantial bleeding results in larger volumes of blood loss, higher resuscitation requirements and severe physiologic derangements.<sup>1</sup>

### Clinical Story

- 1 Post-op day 1: 22:00 Retrospective review of patient after abdominal surgery showed variability between AHI Stable (green) and AHI Unstable (red) outputs.
- 2 Post-op day 2: 14:30 Bleeding was noticed at surgical site.
- 3 Surgical team performed bedside bleeding control.
- 4 Post-op day 3: 19:00 Clinicians recognize that the bleeding had not stopped despite the intervention from the previous day. Rapid response called for hemorrhage, and the need for emergent surgical repair.
- 5 Post-op day 4: 12:00 Patient hemodynamically improved post surgery and moved to Step-Down.

### Patient

Age: 81  
Sex: Male  
Hospital: Michigan Medicine  
Reason for admission: Abdominal Surgery  
Length of stay: N/A

### Opportunity

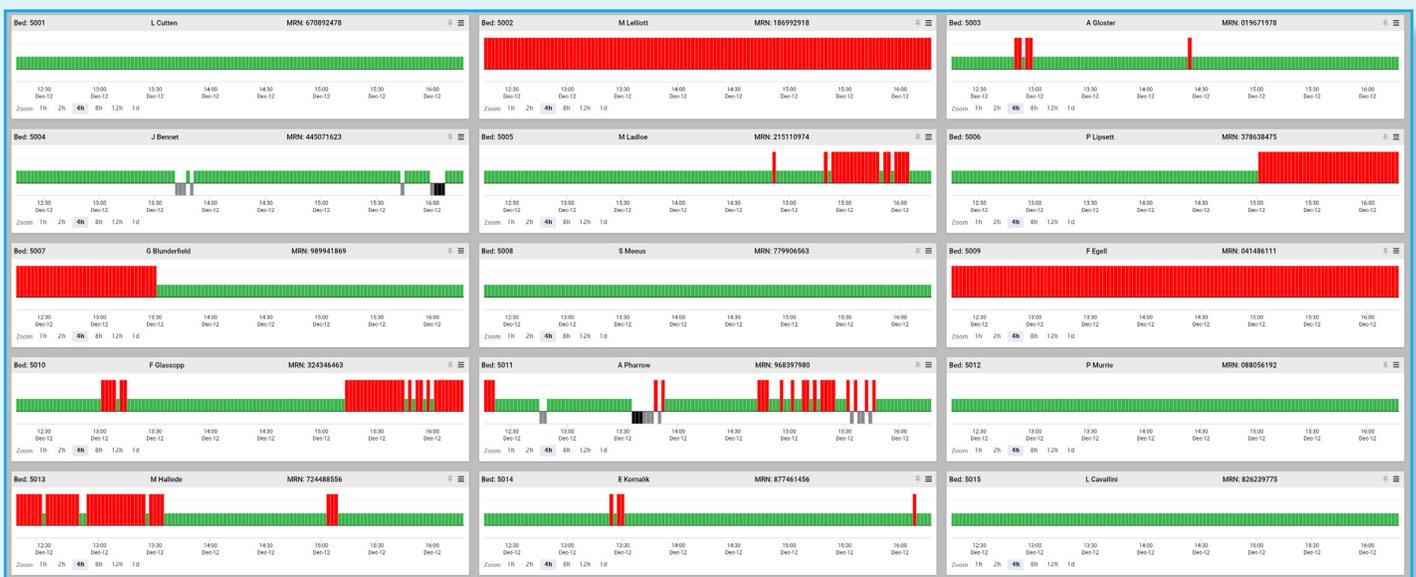
Through retrospective review, 37 hours before RRT call and second surgery, AHI provided consistent, low-noise affirmation that patient was hemodynamically unstable (red) until post-surgery on day 3, when patient was hemodynamically stabilized and recovering. The 37 hours of AHI warning were a missed opportunity for better care that could have been realized if AHI were available. The gaps in the data are during surgery and transport.

**FIFTH EYE™ AHI** is the FDA De Novo granted Analytic for Hemodynamic Instability, easily implemented with existing non-invasive ECG monitors. AHI provides updated colored bars every two minutes, revealing signs of hemodynamic stability (green) or instability (red).

AHI was developed in collaboration with clinicians at the University of Michigan. AHI uses real-time computing based on pattern analysis of a Lead-II ECG waveform to give clinicians updated information within their existing workflow, without requiring manual data input, score calculations, or complex integrations. It can identify at-risk patients in any hospital setting that involves continuous ECG monitoring, not just the ICU.

AHI is intended to describe an adult patient's hemodynamic status and indicate if a patient is showing signs of hemodynamic stability or instability. Signs of hemodynamic instability are defined as hypotension (systolic blood pressure <90 mmHg or mean arterial pressure (MAP) <70 mmHg) combined with tachycardia (heart rate ≥ 100 bpm).

**STRENGTH IN NUMBERS:** In an FDA reviewed clinical study, AHI identified hemodynamic instability with 96% sensitivity and 85% specificity compared to traditional vital signs-based reference standard. The study population consisted of over 28,000 AHI outputs across 222 consecutive eligible hospitalized patients. Diversity in the population, ailments and treatments of the study supports external validity of testing for purposes of generalizing results beyond study site population.



Multi-patient views help prioritize hospitalized adult patients to avoid failure to rescue.

- Prioritization of patients on nurse and physician rounds.
- Efficient shift-change huddle.
- Real-time feedback post-procedure and clinical interventions.
- Nurse empowerment with no nurse burden.
- Patient risk assessment at transfer to higher or lower level of care.
- Resource utilization (beds, clinicians).

**Experience the beauty of AHI:**

- Non-invasive accessibility. More expedient, less complication. Remote monitoring.
  - One lead, multiple reads. Continuous monitoring to give rapid indication.
  - Confidence in assessment. 96% Sensitivity. 85% Specificity.
  - No additional work for clinicians. Easily integrated into existing ECG monitors and workflow.
  - Outside of patient room.
  - Less stress caused by the unknown. AHI provides clear/accurate assessment of patient trending.
  - Developed in collaboration with Clinicians at Michigan Medicine | University of Michigan Hospital.
- AHI was born in a hospital and trained by clinicians.

Learn how AHI can help you better manage clinical care.  
 Email [info@fiftheye.com](mailto:info@fiftheye.com) or visit [fiftheye.com](http://fiftheye.com)

