Clinical Story

1. Patient had colostomy surgery on September 3.
2. ECG data collection began on Sept 5 (6:00 PM) in Surgical Acute Care ICU.
3. Mobility test, patient was ambulatory.
4. Patient was considered stable and transferred to a lower level of care.
5. Patient deteriorated, was sent for a CT scan, internal bleeding detected.
6. Patient was transferred to surgery for an exploratory laparotomy. Two liters of blood and stool were found collected in abdominal cavity and a leak from internal surgical site.
7. Patient bounced back to post-surgical ICU within 24 hours of transfer to lower level of care.

Patient

- **Age:** 58
- **Sex:** male
- **Hospital:** Michigan Medicine
- **Reason for admission:** colon cancer
- **Length of stay:** 20 days

Opportunity

With AHI, there was a potential opportunity to recognize the gradual patient deterioration well in advance, thereby avoiding failure to rescue, transfer to lower level of care, and eventual bounceback.

The study revealed that adverse events (AE) were common after the transition from ICU to hospital ward. 18% of ICU discharges experienced an AE within seven days (most within three days) of transfer from ICU to hospital ward. Six percent of those AEs resulted in permanent disability or death. More than one third of those AEs were considered to be preventable.1

---

1 - Sauro, Khara M, Andrea Soo, Chloé de Grood, Michael MH Yang, Benjamin Wiersta, Luc Benoit, Philip Couillard et al. "Adverse Events After Transition From ICU to Hospital Ward: A Multicenter Cohor Study." Critical care medicine 48, no. 7
FIFTH EYE™ and its FDA De Novo granted AHI (Analytic for Hemodynamic Instability) reveals trends that indicate if a patient is deteriorating, or responding well to care. It provides clinicians with the priceless opportunity to identify potential bounce back episodes.

Based on pattern analysis of a Lead-II ECG waveform, AHI provides colored outputs every two minutes, revealing signs of hemodynamic stability (green) or instability (red).

Hemodynamic instability is a life-threatening complication in critically ill or injured patients, defined as hypotension combined with tachycardia (low systolic blood pressure < 90 mmHg or mean arterial pressure (MAP) < 70 mm Hg and high heart rate ≥ 100 bpm).

STRENGTH IN NUMBERS: Study population consisted of 222 consecutive eligible hospitalized patients, average age 58.8 years (range 19 to 92 years), 56.3% male/43.7% female.

Roughly 9,082 hours of ECG data analyzed across study population including diverse set of ailments and treatments. Diversity in dataset supports external validity of testing for purposes of generalizing results beyond study site population.