The Reusable ECG Lead Problem:

33-77% of ECG lead wires are contaminated, placing patients at risk of surgical site infections (SSI)

41.8% of ECG alarms are clinically irrelevant "leads off" alarms

The Single-Patient-Use ECG Cable & Lead System Impact:

- 25% reduction in leads off alarms
- 29% reduction in surgical site infections

The Reusable ECG Lead Problem:

- Background:
  - Electrocardiographic (ECG) monitoring is required for coronary artery bypass graft (CABG) surgery patients
  - Reusable ECG lead wires (rECG) are standard of care, though a single-patient-use cable and lead system (spECG) has been shown to decrease surgical site infection (SSI) and reduce clinically irrelevant "leads off" ECG alarms

- Methods:
  - A 1-year cohort model (Fig.1) simulates the care pathway for a facility performing 200 Medicare CABG procedures annually
  - Mean CABG population: 73 years & 30% female
  - After CABG, patients recover in the ICU, then transfer to the general ward (GW) and finally discharge to a care facility (25.5%) or home (74.5%)
  - ECG monitoring is for 58 days while in hospital
  - Complete transition from rECG to spECG
  - Significance tested using 2,000 probabilistic sensitivity analyses and one-way sensitivity analysis

- Results:
  - Across 200 CABG patients, the annual cost of care with rECG was ~$7 million (~$35,000 per patient)
  - Both annual costs and costs after 10 days are in line with previous publications
  - A combined 2,062 hospital days including 472 ICU days were accumulated
  - There were 49 readmissions linked to SSIs
  - Transition to spECG reduced mean costs by ~$100,538 (~$500 per patient)
  - Costs savings derived from a mean of $532 ($230 to $1,077)
  - 25 fewer hospital days (4.2 in the ICU)

- Cost drivers:
  - The additional LoS due to SSIs and DSWIs on the general ward were key outcome drivers
  - The proportion of SSIs that are DSWIs impacts the additional LoS and costs after 10 days are in line with studies

- Conclusion:
  - Model results are in line with real-life costing studies
  - Surgical site infections are a cost driver for CABG procedures
  - The surgical site infection reduction benefit of Kendal Single-Use ECG cable and lead systems are likely to translate into Medicare cost savings
  - Reduced "leads off" alarms did not drive cost differences, but may represent a substantial benefit to patient and staff satisfaction

- References:
  - Nabagiez et al. Am Heart J. 2014
  - Zhang, Z et al. J Am Coll Cardiol. 2015