

Clinical Evidence Series

Continuous Patient Monitoring in the Catheterization Laboratory: Usability and Operational Impact Assessment



What's different

Continuous patient monitoring replaces transitions between stationary monitors with a transportable monitor (IntelliVue X3) that travels with the patient, allowing uninterrupted monitoring across the cath-lab pathway, reducing re-cabling, and standardizing workflow from pre-holding through procedure and recovery.



Interpretation

Continuous patient monitoring demonstrated high usability and strong staff acceptance, with perceived improvements in patient safety and workflow consistency. In a highly optimized cath-lab environment, CPM did not result in measurable reductions in preparation times, suggesting value is primarily driven by usability and workflow standardization rather than efficiency gains.



Key takeaways

Continuous patient monitoring in the cath-lab demonstrated high usability and strong staff acceptance, with clinicians reporting improved perceived patient safety, comfort, and workflow consistency.



Background

- Intrahospital patient transport and care transitions are associated with workflow inefficiencies and potential gaps in continuous physiologic monitoring
- Monitoring systems that stay with the patient across care areas may improve staff experience, perceived safety, and workflow consistency



Study design and methods

- **Design:** Prospective, pre/post observational study
- **Setting:** High-volume cardiac catheterization laboratory
- **Participants:** 15 cath-lab nurses completed usability and experience surveys with 1,042 procedures included for operational time analysis
- **Intervention:** Continuous patient monitoring using IntelliVue X3 transport monitor integrated across pre-holding, cath-lab, and transport



Objectives

Evaluate the usability, staff experience, and operational impact of continuous patient monitoring in a cardiac catheterization laboratory.



Results

Usability: The CPM workflow achieved a SUS score of 70

Patient experience (staff-reported): Positive perceptions related to patient comfort, reduced re-cabling, and fewer electrode replacements

Staff experience: Clinicians rated the system highly on the USE questionnaire with an overall score of approximately 6 out of 7. Sub-scores included:

- Ease of use: 6.4 / 7
- Ease of learning: 6.7 / 7

Operational efficiency: Cath-lab preparation times were similar between workflows:

- Mean pre-procedure preparation time:
 - o Stationary workflow: 12.8 ± 4.95 minutes
 - o CPM workflow: 13.1 ± 5.58 minutes
- Mean post-procedure preparation time:
 - o Stationary workflow: 10.6 ± 4.27 minutes
 - o CPM workflow: 11.3 ± 5.47 minutes