

## Workflows and clinical utilization of dynamic mapping data in radiofrequency catheter ablation of cardiac arrhythmias

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**Introduction:** Previous publications suggest that the use of high-density (HD) mapping leads to better substrate visualization and may lead to improved procedural outcomes. A novel dynamic mapping software, utilizes the HD grid mapping catheter (HD Grid) to display beat-to-beat, dynamic regional mapping data (LiveView). Incorporation of real-time dynamic mapping data into routine mapping/ablation workflows may further enhance the clinical benefits of HD mapping during radiofrequency (RF) catheter ablation procedures.

**Purpose:** To examine the clinical utility and common workflows when dynamic mapping data was used during RF ablation procedures among operators with various experience levels.

**Methods:** Observational procedural data including procedure time, total RF time, and workflow preference were prospectively collected in catheter ablation cases utilizing LiveView from May to September 2020. Mapping and ablation strategies were determined at the operator's discretion. Total percentage exceed 100% when multiple usage were reported.

**Results:** A total of 428 cases were collected from over 25 operators in 11 European countries. LiveView was used in a variety of cases including atrial fibrillation (paroxysmal and persistent), atrial flutter (typical and atypical), and VT (ischemic, non-ischemic, and idiopathic). Visualization of real-time mapping data from the current location of the HD Grid was commonly used after creation of traditional full-chamber maps (319/428, 74.5%). While operators in over 55% of the cases indicated that the use of dynamic display during mapping helped identify areas that were under ablated (238/428, 55.6%), using LiveView did not affect the lesion delivery strategies in those regions. LiveView was also used as a primary method for confirmation of pulmonary vein isolation (PVI) in 213 cases (49.8%). The most common reported usage of LiveView among the 428 cases analyzed was PVI confirmation/gap identification (75.2%), ablation line gap identification (41.1)%, and identification of breakthrough activation (23.6%)

**Conclusions:** This initial analysis demonstrated the diverse clinical utilization of LiveView dynamic display during RF catheter ablation procedures, including atrial and ventricular arrhythmias. Without causing significant changes to normal workflow, dynamic display of regional signals allows for rapid identification of ablation targets. When used during RF delivery, real-time assessment of regional activation patterns helped improve outcomes by rapidly identifying critical ablation location and ensuring successful lesion delivery. A further study that examines the impact of dynamic display on procedure efficacy may be warranted.