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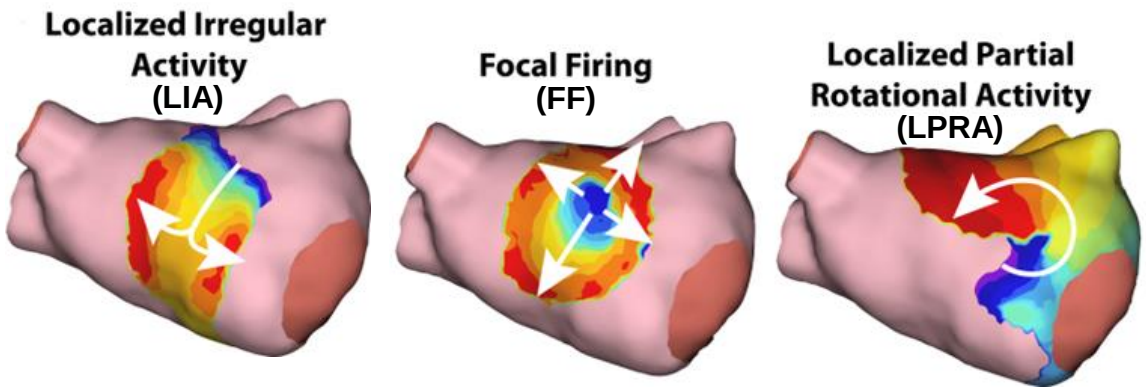
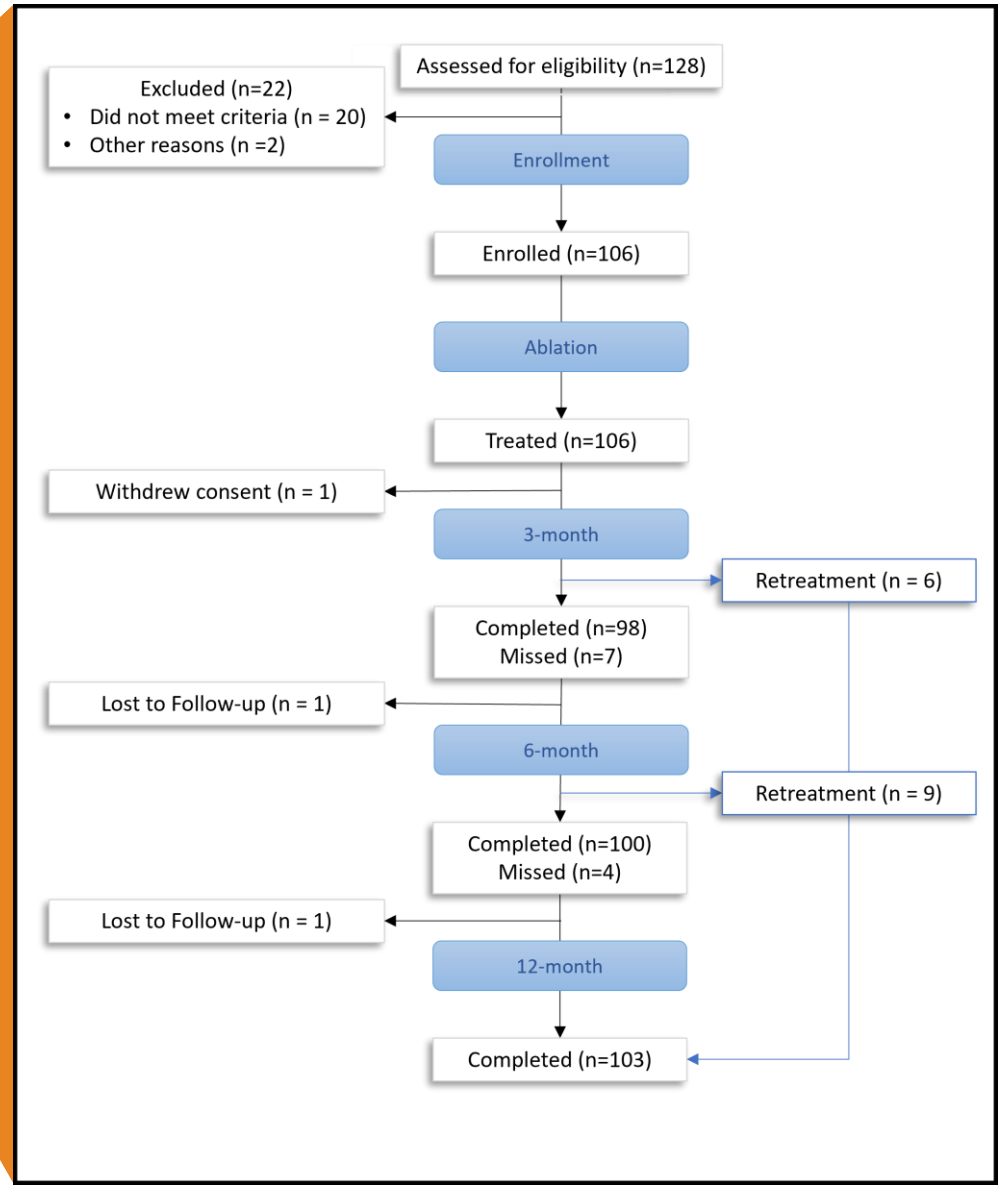
# RECOVER AF

**Treatment of Pathophysiologic Propagation Outside of the Pulmonary Veins in Retreatment of AF**

# Study Objective & Methods

- Evaluate the performance of AcQMap to guide ablation of non-PV targets in persistent atrial fibrillation (AF) patients following either a first or second failed procedure.
- Prospective, nonrandomized trial that studied 103 patients scheduled for a 1st or 2nd retreatment ablation for recurrent AF in 14 centers. AcQMap was the only system used.
- AF maps were used to guide the ablation of non-PV targets through elimination of pathologic conduction patterns (PCPs).



# Key Takeaways

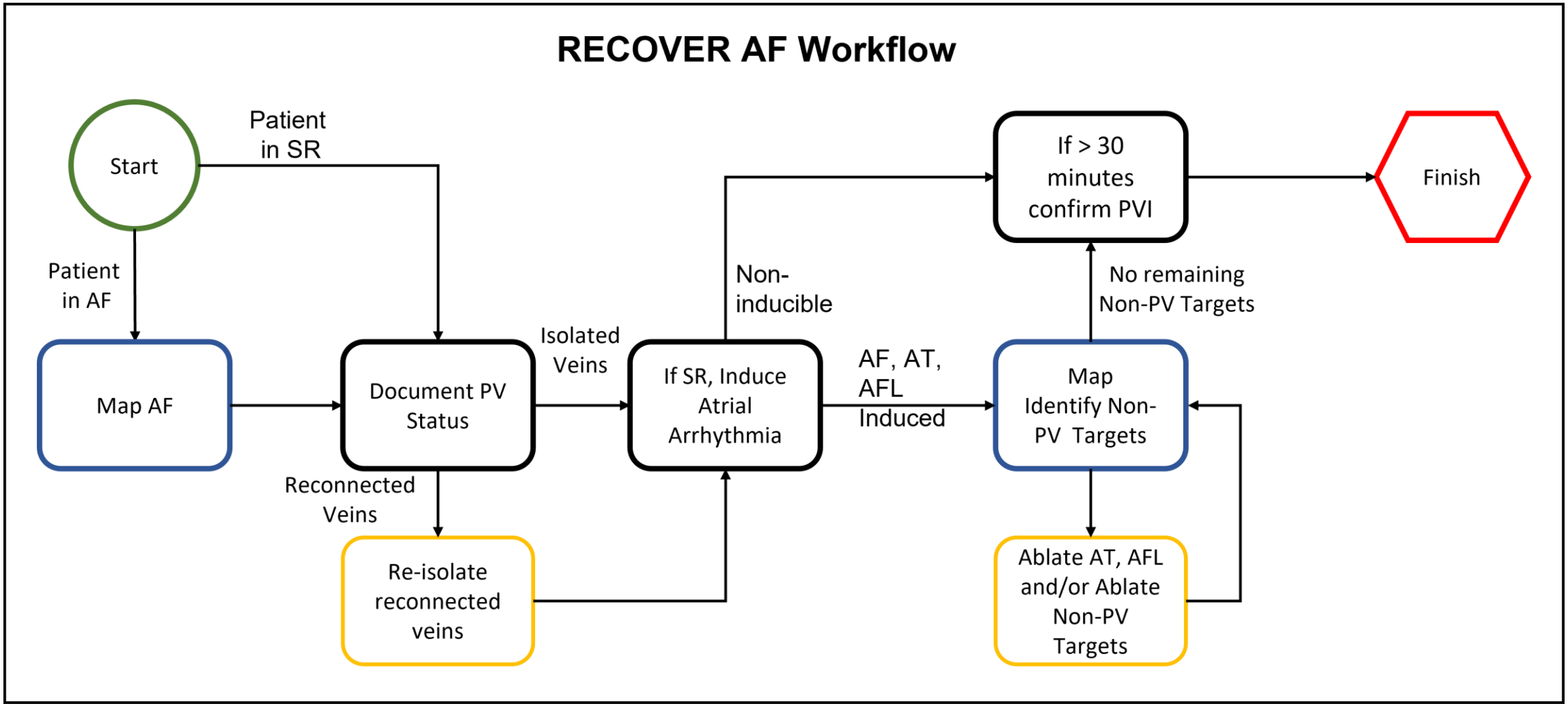
In a Persistent AF Population:

1. **Patient-Specific Strategies Continually Outperform Others**
   AcQMap-guided ablations help achieve superior outcomes

2. **Less is More**
   Patients with less empirical ablations have better outcomes

3. **The Sooner, The Better**
   Patients have better outcomes when individualized strategies are employed sooner in the treatment pathway

# Study Design – Procedural Workflow



# AcQMap-guided Retreatment Enables Superior Outcomes

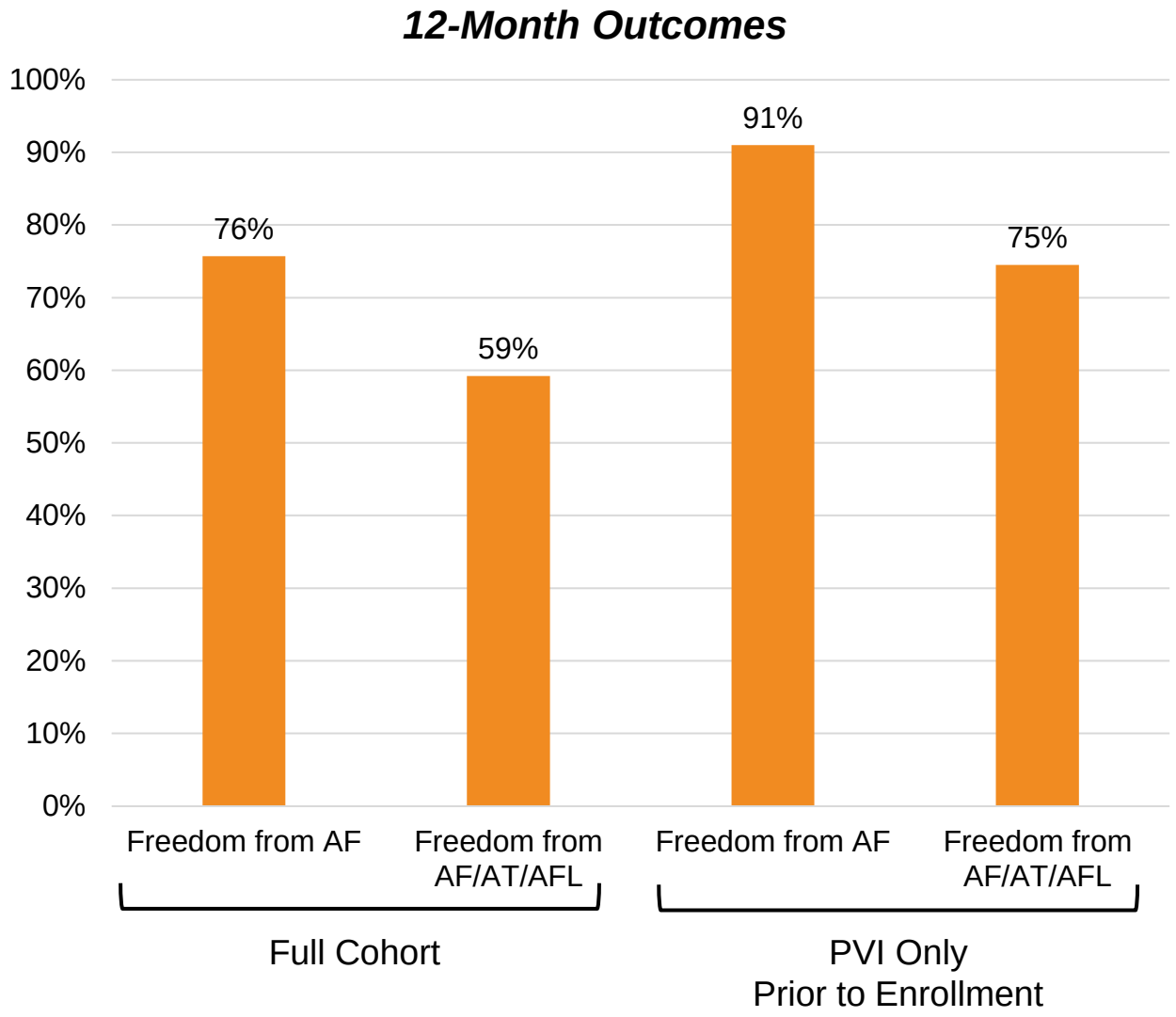
**76%** Freedom from AF at 1 year

Aligned with other key AcQMap studies

- UNCOVER AF: 73%
- Core-To-Boundary: 88% (2-year)

**91%** Freedom from AF at 1 year

(de novo PVI only patients)
(43/47 patients)




Shi et al. "Individualized ablation strategy to treat persistent atrial fibrillation: Core-to-boundary approach guided by charge-density mapping" Heart Rhythm Journal Volume 18, Issue 6, June 2021
Willems et al. "UNCOVER AF Trial" Circulation: Arrythmia and Electrophysiology. Jun 2019 *2nd procedure results for UNCOVER AF were at 6 months*

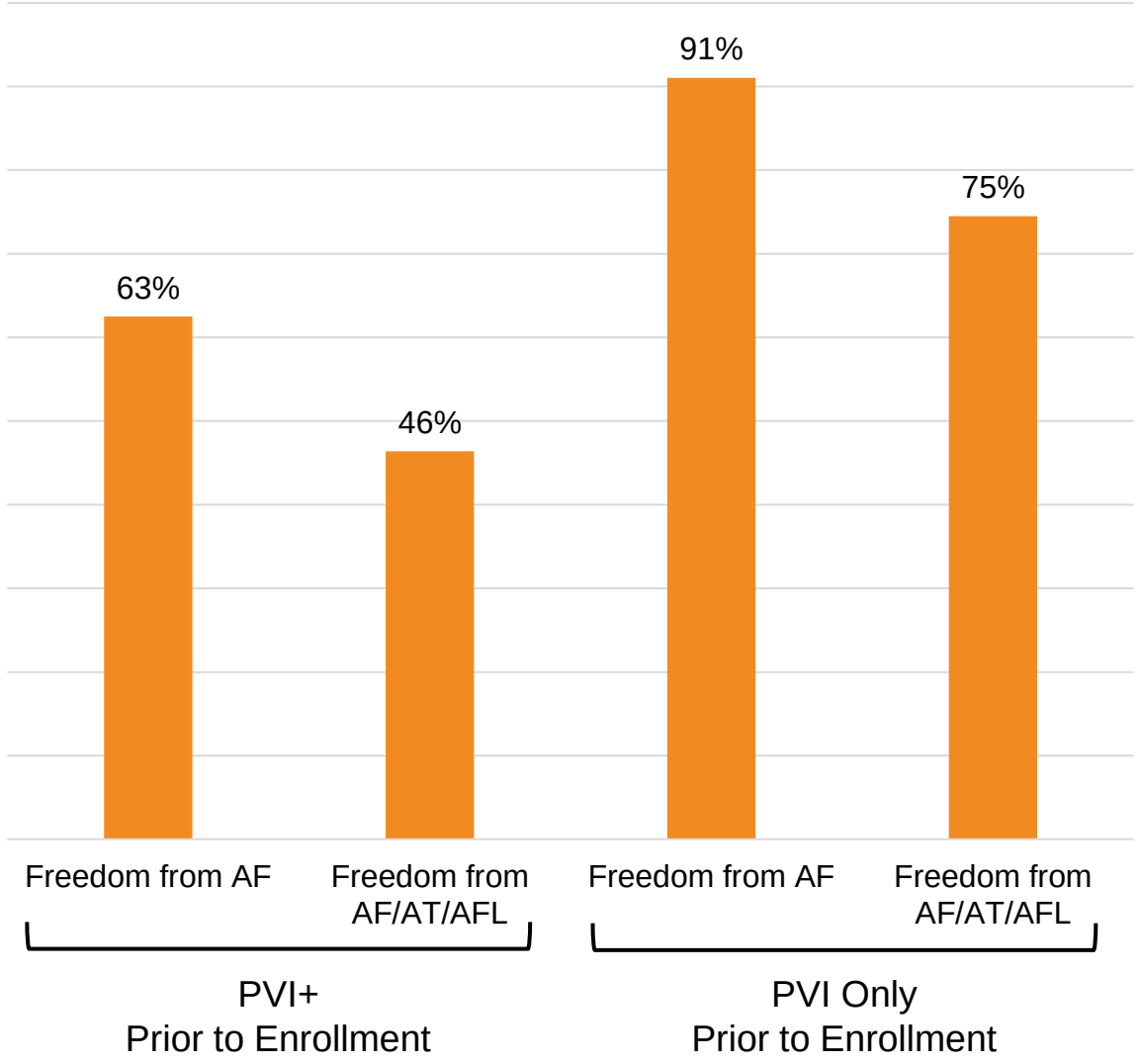
# Non-PV Anatomical Ablations May Be Detrimental

*"These particularly high success rates for persistent AF retreatment patients could indicate that ablation beyond the PVs that are not informed by a patient's activation during AF could be deleterious to future treatment"*

*-Tim Betts, Principal Investigator*

| Patient Cohort | | | Comparative likelihood of AF Freedom at 1 year |
|---|---|---|---|
| 1st retreatment patients with *de novo* PVI only | vs | First retreatment patients with PVI + | **10.9x** |
| | | Second retreatment patients | **6.6x** |

***12-Month Outcomes***



# Ablations in Patients with Intact Prior PVIs

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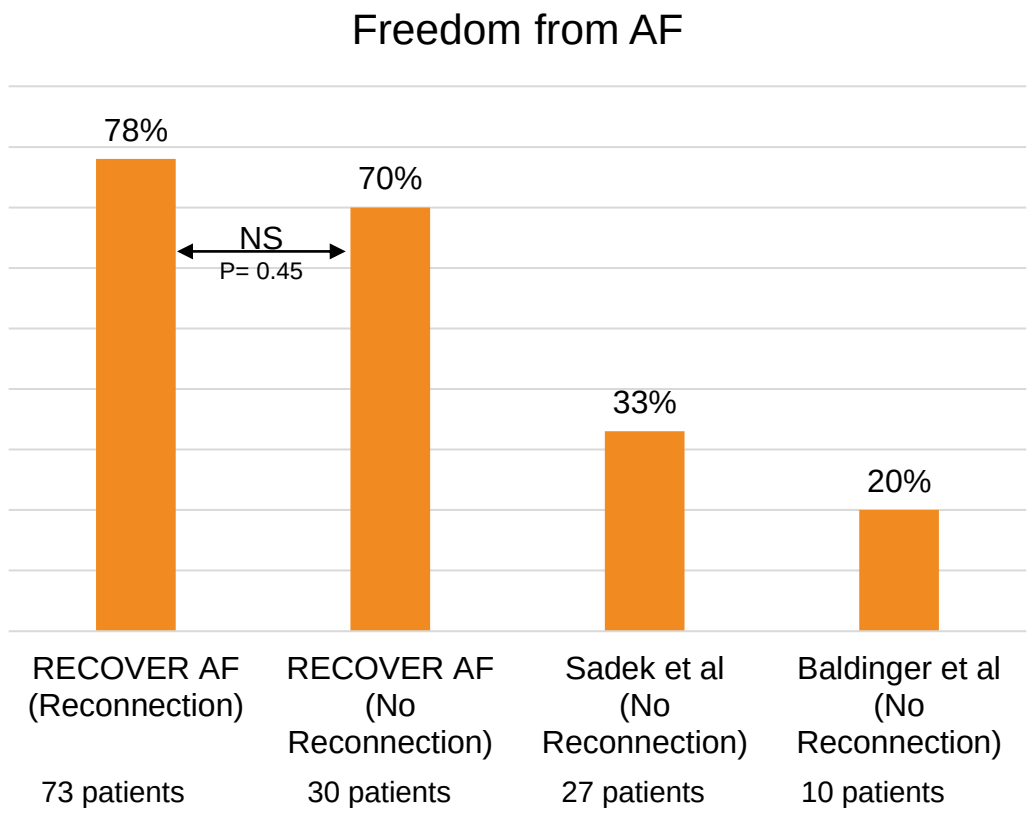
## *AcQMap guidance can lead to superior outcomes after PVI*

- AcQMap-guided ablations led to a significant improvement in outcomes—even if the prior PVI was intact.
- AcQMap guided ablation was the main driver of success. Vein re-isolation had no significant impact on the outcomes of these patients.
- AcQMap provided significant advantages in treatment strategies compared to anatomical strategies.



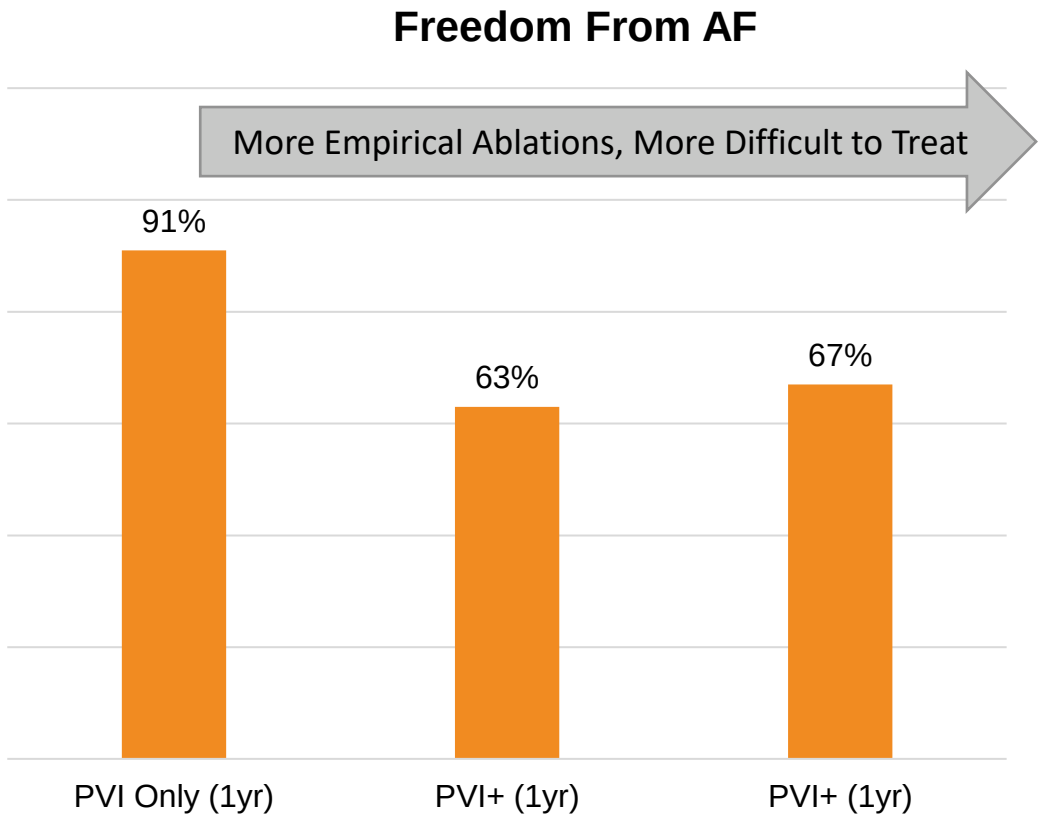


Baldinger et al. Recurrence of Atrial Arrhythmias Despite Persistent Pulmonary Vein Isolation After Catheter Ablation for Atrial Fibrillation: A Case Series. JACC Clin Electrophysiol. 2016;2(6):723-31

Sadek et al. Recurrent atrial arrhythmias in the setting of chronic pulmonary vein isolation. Heart Rhythm Research Article| VOLUME 13, ISSUE 11, P2174-2180, NOVEMBER 2016

# Outcomes Improve with Early Patient-Specific Strategies

*Evidence indicates patients have better outcomes when AcQMap is used in earlier procedures*




| | | | |
|---|---|---|---|
| Procedures Prior to Enrollment | 1 | 1 | 2 |
| # of Patients | 47 | 29 | 27 |

# Non-PV Targets Are Not Anatomically Localized

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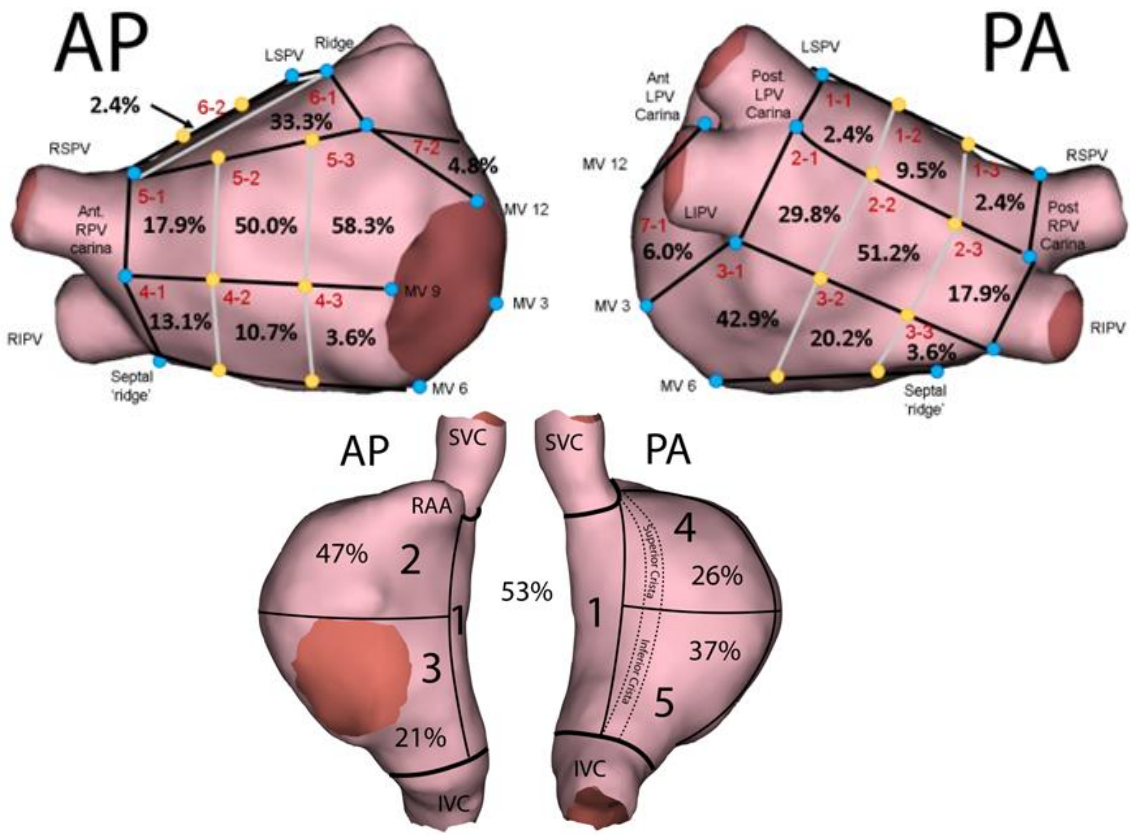
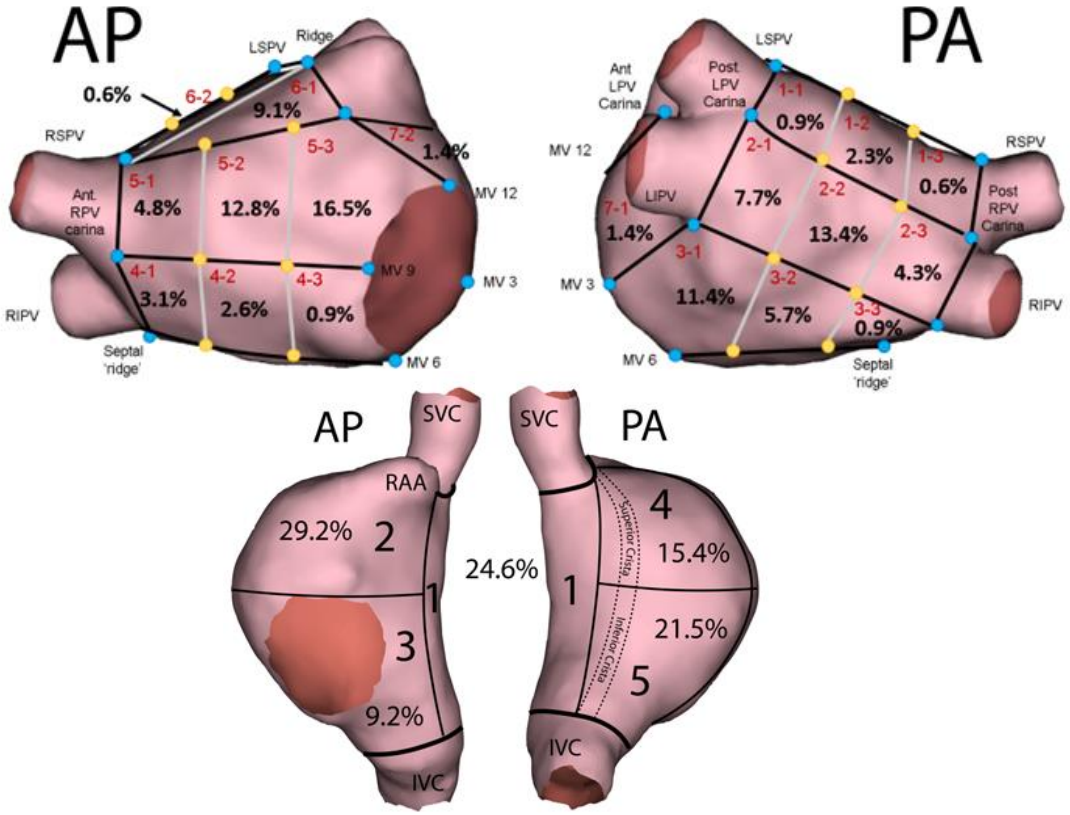
Targets are evenly split between the posterior and anterior anatomy, demonstrating why anatomical ablation strategies, such as posterior wall isolation, are not effective

## Percent of Patients with Targets in Each Location

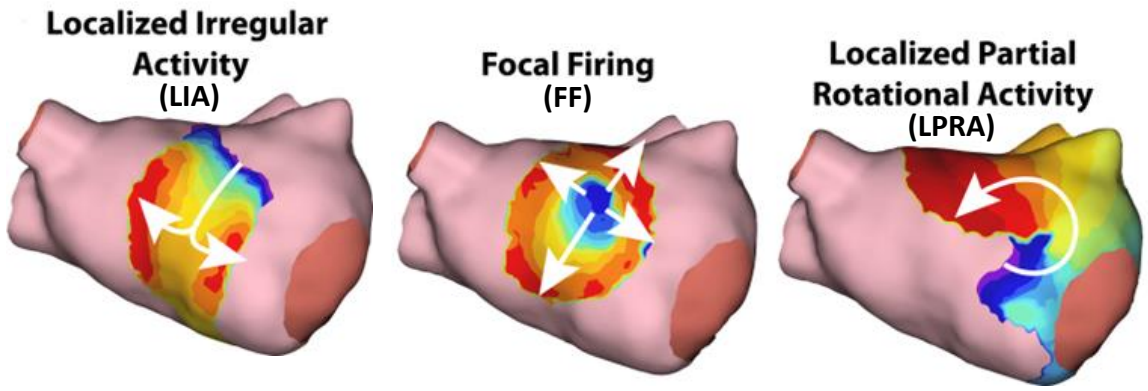



## Percent Targets in Each Location

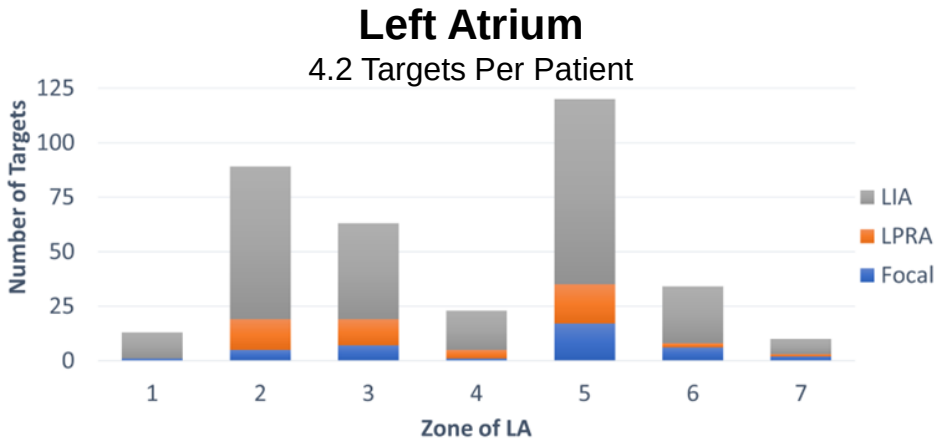


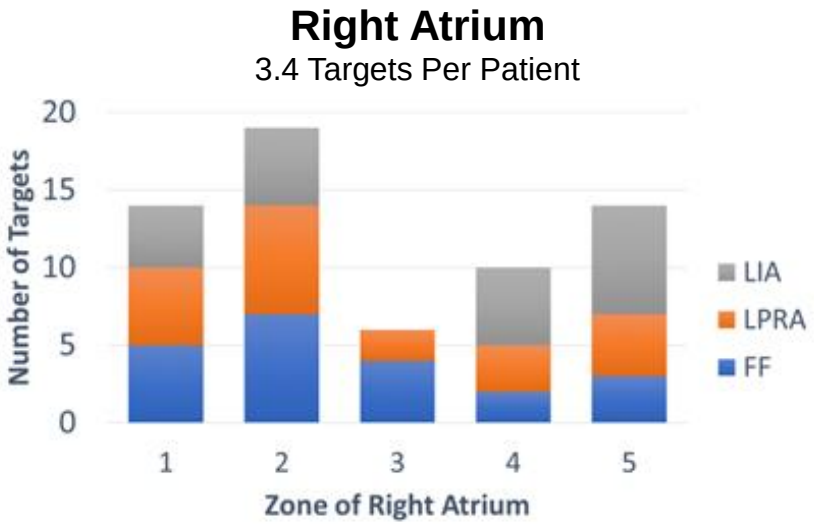
# Local Irregular Activity (LIA) Is the Most Prevalent Pathologic Conduction Pattern (PCP)

- Higher incidence of LIA, uniquely identified by AcQMap, demonstrates the importance of these conduction patterns.
- Ablation of LIAs led to significantly better patient outcomes.



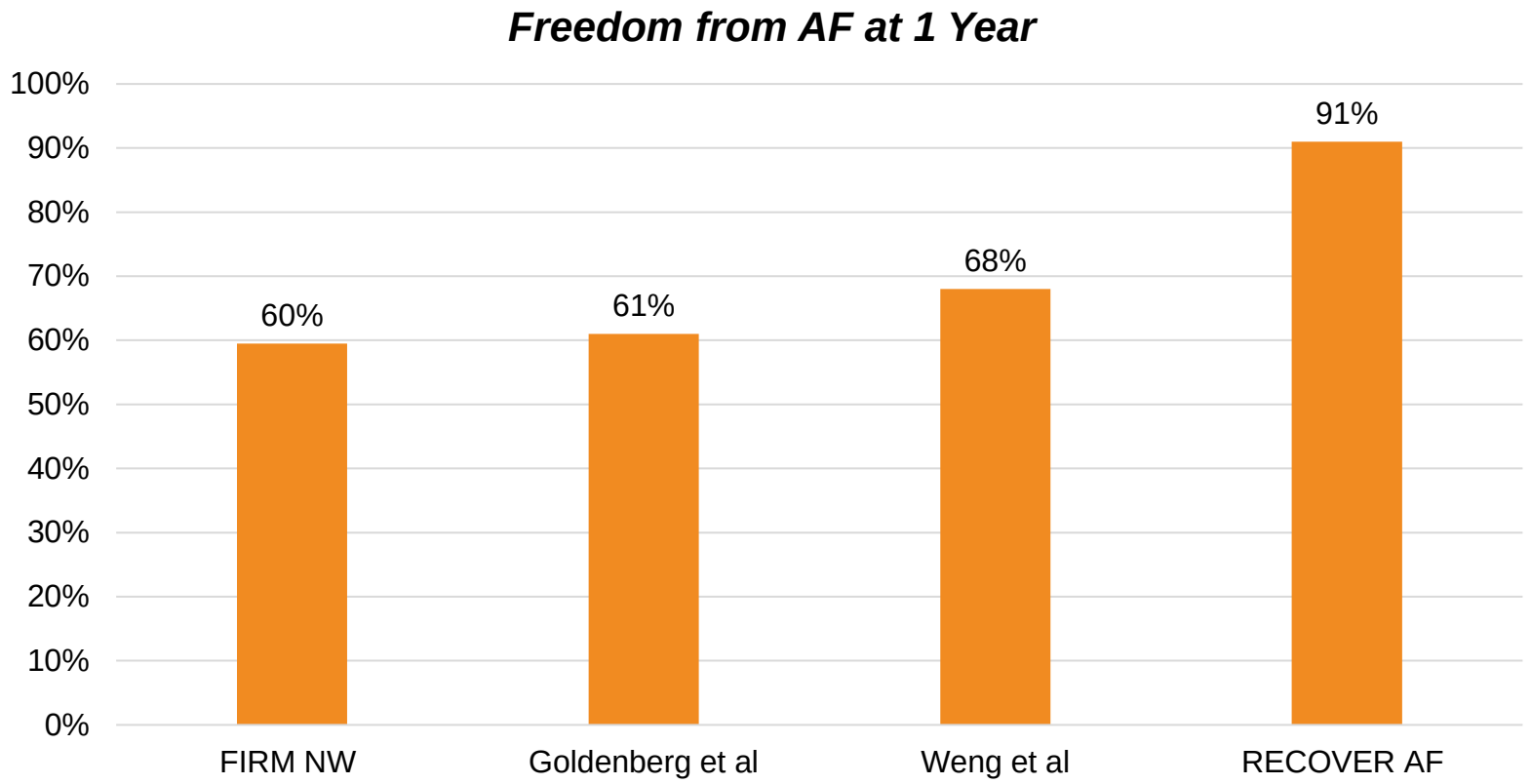

Type and Frequency of Targets by Zone



# AcQMap Shows Superior Outcomes in Retreatment Studies

## Success rates in patients with previous PVI-only ablations




| Ablation Strategy | PV Re-Isolation Only | CFAE, Lines | LVA, Triggers, Lines | AcQMap-Guided<br>Pathologic Conduction Patterns (PCPs) |
|---|---|---|---|---|
| Patient Population | PAF & PersAF | PersAF | PAF & PersAF | PersAF |


Peigh et al. Repeat pulmonary vein isolation with or without FIRM-guided ablation for recurrent atrial fibrillation with pulmonary vein reconnection. J Cardiovasc Electrophysiol. 2020 May ; 31(5): 1031–1037
Goldenberg et al. The incremental benefit of non-pulmonary vein left atrial ablation in patients undergoing a repeat persistent atrial fibrillation ablation procedure. J Interv Card Electrophysiol (2017) 48:185–191
Weng et al. Outcomes of a comprehensive strategy during repeat atrial fibrillation ablation Journal of Interventional Cardiac Electrophysiology (2022) 65:391–399