

Maximizing Outcomes in CRT Patients

Suneet Mittal, MD, FHRS

Director, Electrophysiology Laboratory

The Arrhythmia Institute at The Valley Hospital

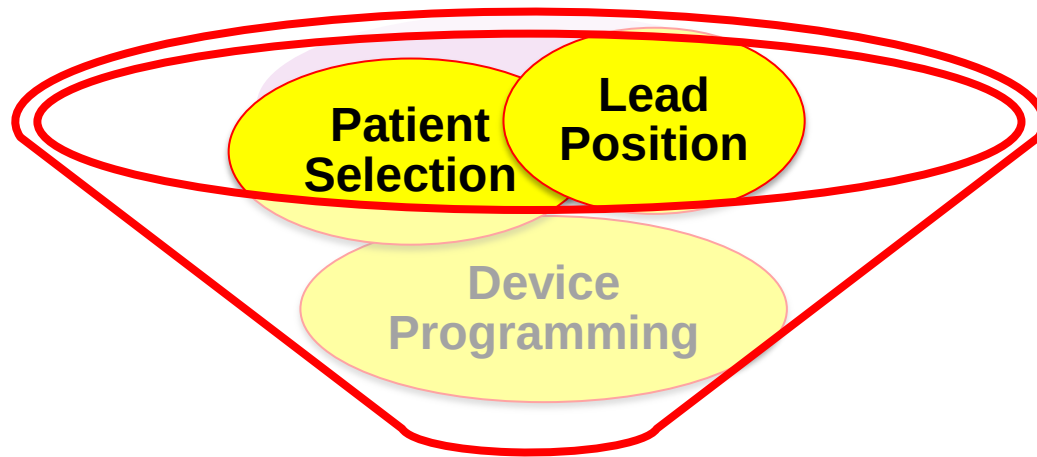
Ridgewood, NJ; New York, NY



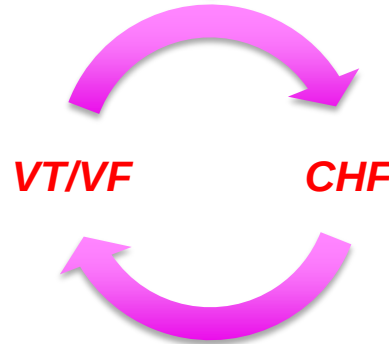
May 5, 2016

Disclosures: Consultant to Boston Scientific, Medtronic, Sorin, and
St. Jude Medical

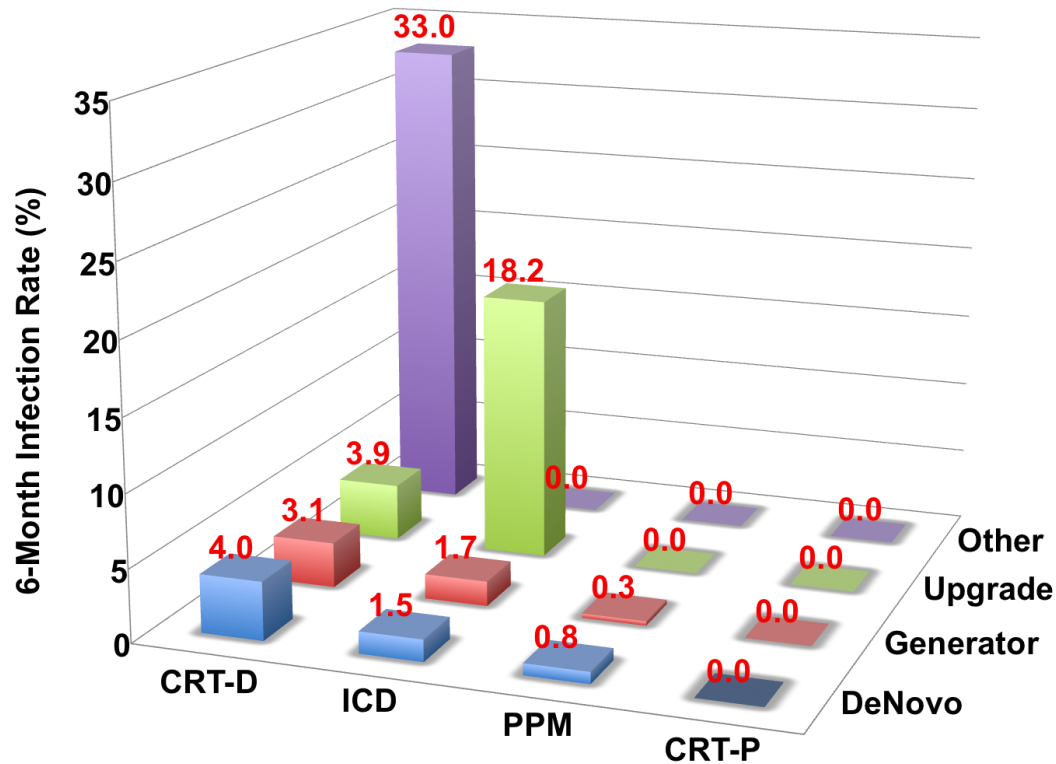
CRM-391190-AAMay2016



Reverse Remodeling



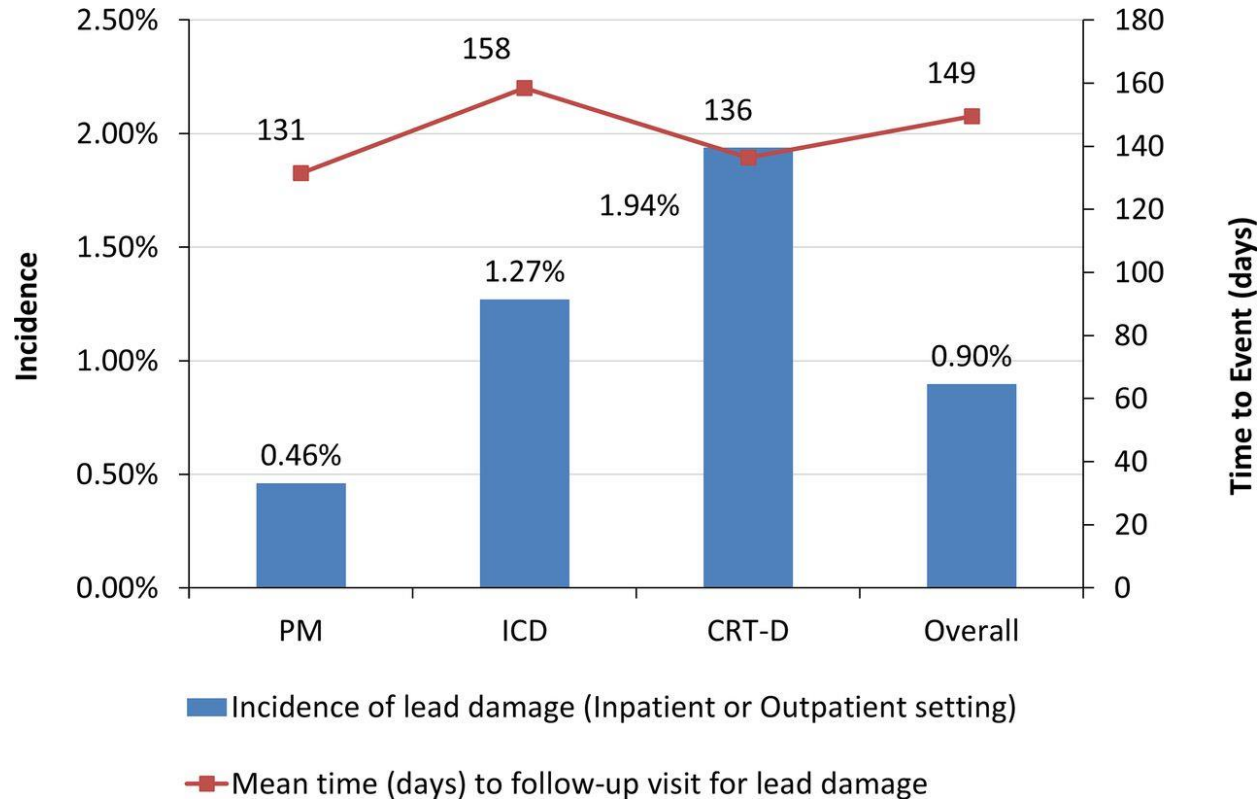
Risk Factors for Infection



2891 patients

Mittal S et al. *Heart Rhythm* 2014; 11: 595-601

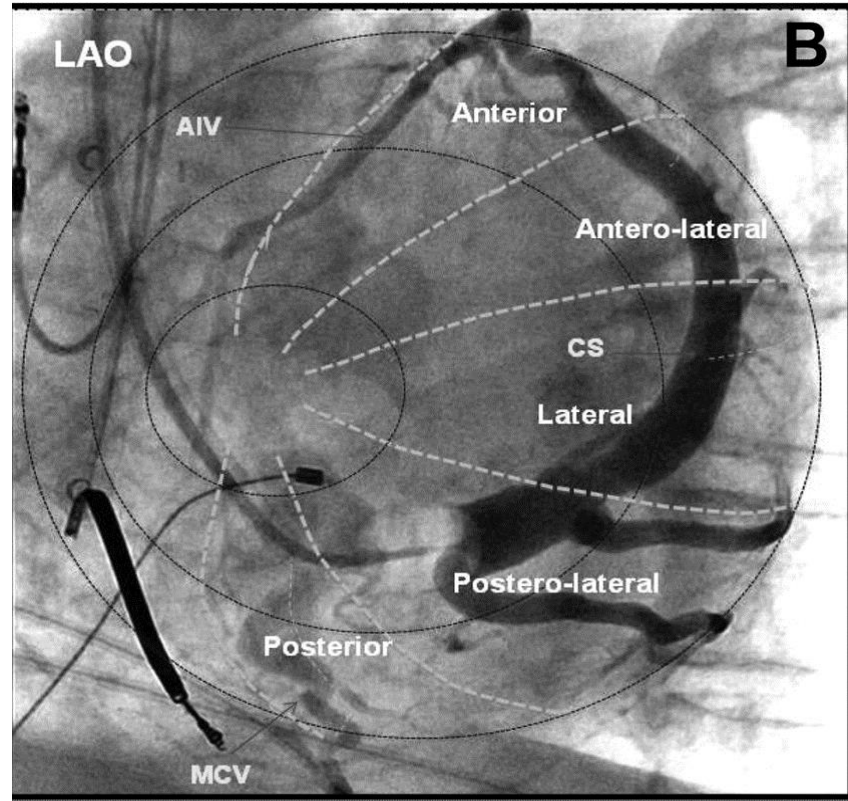
Risk Factors for Lead Damage



Risk Factors for Lead Damage

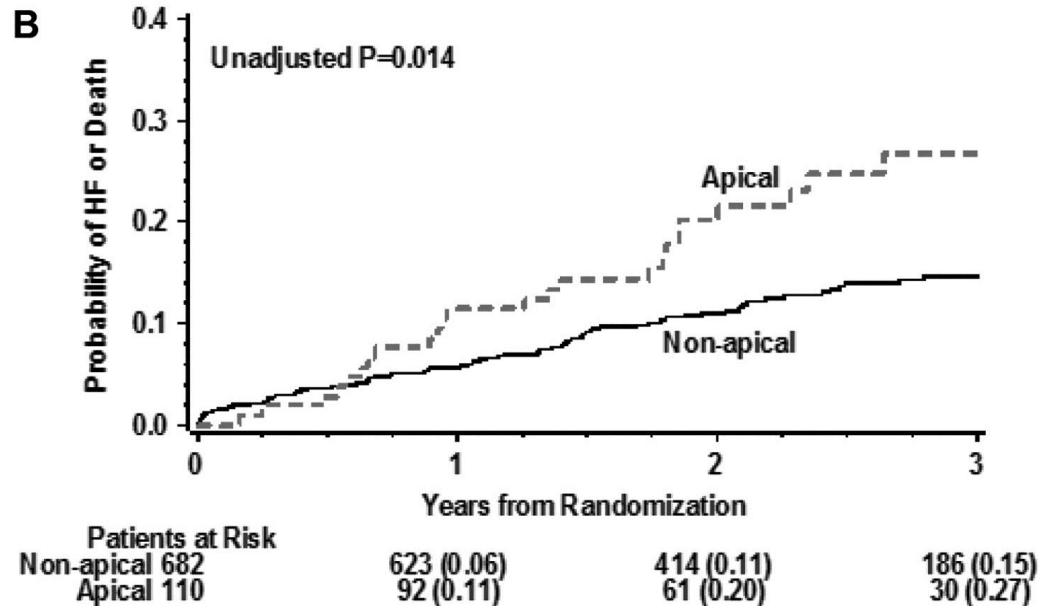
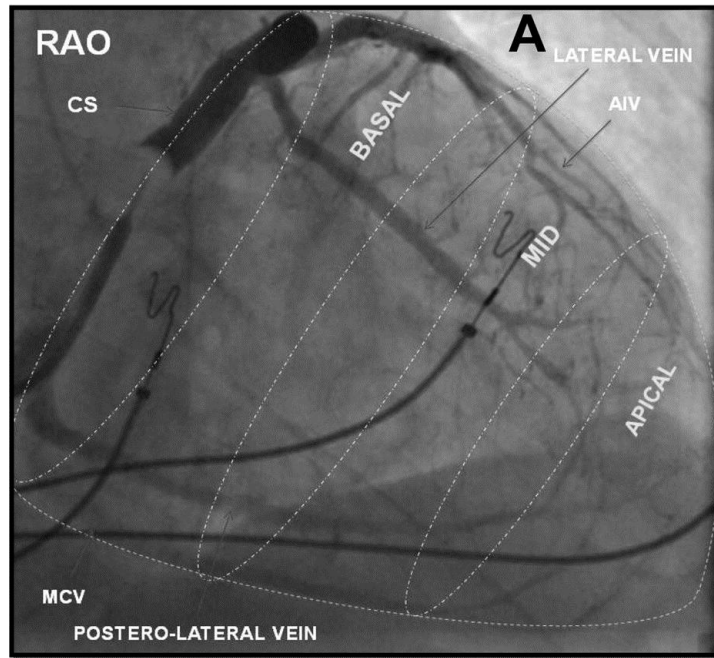
	PM (n=22 557)	ICD (n=20 632)	CRT-D (n=2063)	P Value*	Overall (n=45 252)
Patients requiring lead revision or repair, n (%)	104 (0.46%)	262 (1.27%)	40 (1.94%)		406 (0.90%)
Length of stay (days)					
Mean±SD	4.2±3.0	4.3±3.8	5.7±8.2	0.563	4.4±4.3
Median	4.0	3.0	3.0		3.0
Total visit cost					
Mean	\$19 959	\$24 885	\$46 229	0.048	\$25 797
SD	\$15 365	\$21 384	\$85 260		\$33 415
25th percentile	\$8736	\$12 329	\$17 084		\$11 872
Median	\$15 491	\$18 844	\$19 166		\$18 644
75th percentile	\$30 506	\$28 141	\$41 409		\$28 285

Importance of Lead Location

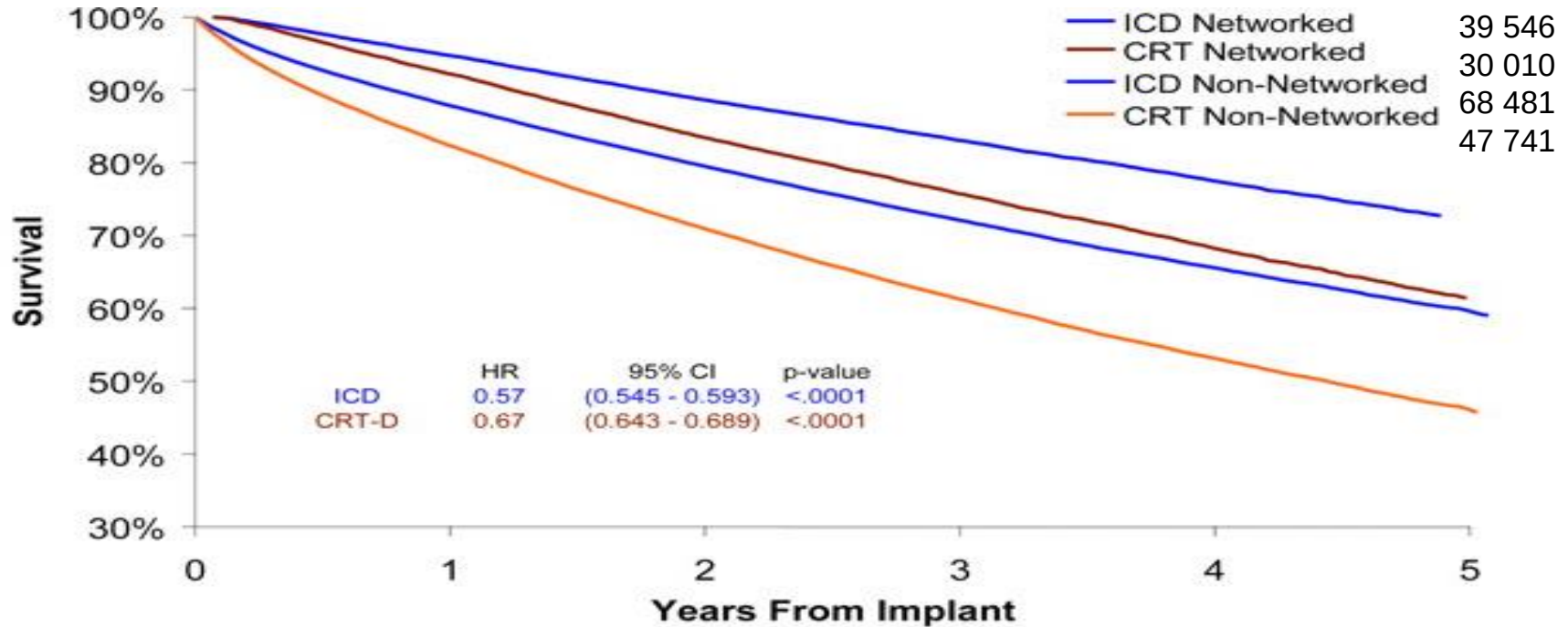


Singh JP et al. *Circulation* 2011; 123: 1159-1166

Importance of Lead Location

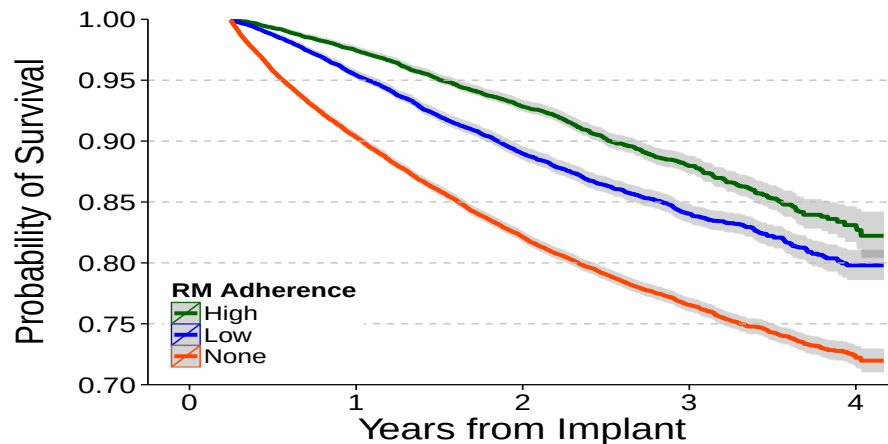


Impact on Survival



Impact on Survival

Survival, CRT-D



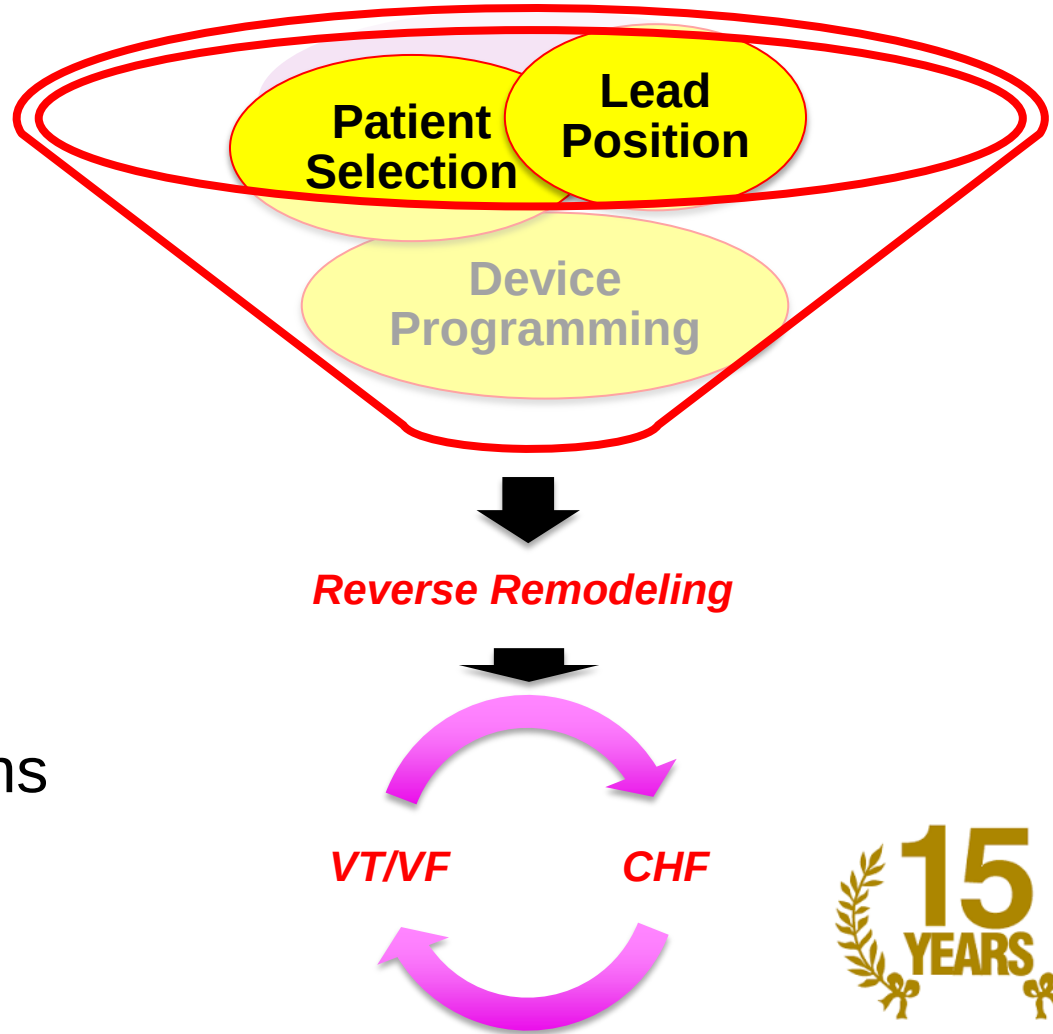
Number at Risk

High	14,217	13,342	7,454	2,744	206
Low	13,602	12,572	7,712	3,363	367
None	31,704	27,448	15,748	6,335	671

RM High vs. None	HR: 2.4	[2.2–2.6], p<0.001
RM High vs. Low	HR: 1.5	[1.4–1.6], p<0.001
RM Low vs. None	HR: 1.6	[1.5–1.7], p<0.001

New Considerations

- Hardware selection
 - ✓ Battery longevity
 - ✓ Lead reliability
- Lead consideration
 - ✓ Site of pacing
- Follow-up considerations
 - ✓ Diagnostics
 - ✓ Remote monitoring



Agenda

Pre-implant considerations

- Joshua M. Cooper, MD
 - Professor of Medicine
 - Director, Cardiac Electrophysiology Laboratory
 - Temple University Hospital

Intra-operative considerations

- Devi G. Nair, MD
 - Arrhythmia Associates of Northeast Arkansas

Post-implant considerations

- Jagmeet P. Singh, MD Dphil
 - Professor of Medicine
 - Associate Chief of Cardiology, Massachusetts General Hospital
 - Harvard Medical College