



Milestone
PHARMACEUTICALS

Company Overview

March 28, 2024



Forward Looking Statement



The Presentation contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, as amended. Words such as “aim,” “anticipate,” “assume,” “believe,” “contemplate,” “continue,” “could,” “design,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “predict,” “positioned,” “potential,” “project,” “seek,” “should,” “target,” “will,” “would” (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. These forward-looking statements are based on Milestone’s expectations and assumptions as of the date of this Presentation. Each of these forward-looking statements involves risks and uncertainties. Actual results may differ materially from these forward-looking statements. Forward-looking statements contained in this Presentation include statements regarding (i) the design, progress, timing, scope and results of the etripamil clinical trials in PSVT and AFib-RVR, (ii) the potential efficacy, safety and tolerability of etripamil, (iii) the potential of etripamil to deliver a clinically meaningful benefit to patients with PSVT in the home-setting environment and to empower patients to take control of their condition as well as provide value to the healthcare system, (iv) the timing of a potential NDA resubmission, (v) plans relating to commercializing etripamil, if approved, including the geographic areas of focus and sales strategy, (vi) the potential market size and the rate and degree of market acceptance of etripamil and any future product candidates and the implementation of Milestone’s business model and strategic plans for its business, etripamil and any future product candidates (vii) Milestone’s expected cash runway and (viii) potential royalty payments. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, the risks inherent in biopharmaceutical product development and clinical trials, including the lengthy and uncertain regulatory approval process, uncertainties as to whether our NDA for etripamil will be approved by the FDA, uncertainties related to the timing of initiation, enrollment, completion and evaluation of clinical trials, including the RAPID and ReVeRA trials, and whether the clinical trials will validate the safety and efficacy of etripamil for PSVT, AFib-RVR, or other indications, among others, as well as risks related to pandemics and public health emergencies, including those related to COVID-19, and risks related to the sufficiency of our capital resources and our ability to raise additional capital. These and other risks are set forth in Milestone’s filings with the U.S. Securities and Exchange Commission, including in its annual report on Form 10-K for the year ended December 31, 2022, under the caption “Risk Factors”, as such discussion may be updated in future filings we make with the SEC including in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, under the caption “Risk Factors”. Except as required by law, Milestone assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

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Etripamil is an investigational new drug, which is not approved for commercial distribution in the United States.

Milestone Pharmaceuticals:

Aspiring to Give Patients Control over Common Heart Conditions



Empowering Patients Self-Treat Common Arrhythmias

- Etripamil Nasal Spray: novel calcium channel blocker
- Fast-acting, well-tolerated, portable, on-demand
- Shift from Emergency Department to patient self-management

PSVT Commercial Launch Preparation

- NDA resubmission – Mar 2024
- Type A meeting – Feb 2024
- NDA RTF – Dec 2023
- Successful Phase 3 - Published in *The Lancet*
- Experienced leadership driving commercialization

AFib-RVR Market Expansion Opportunity

- End of Phase 2 Meeting expected mid-2024
- FDA provides Phase 3 study guidance – 1Q 2024
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- AHA Featured Science Presentation – Nov 2023

PSVT = Paroxysmal Supraventricular Tachycardia; AFib-RVR = Atrial Fibrillation with Rapid Ventricular Rate; NDA = New Drug Application; RTF = Refusal to File; AHA – American Heart Association.
Citations: Stambler B et al, *The Lancet* (2023); Camm AJ et al, *Circulation: Arrhythmia & Electrophysiology* (2023)

PSVT and AFib-RVR Cause Markedly Symptomatic Attacks That Disrupt Patients' Lives



Symptoms include...

- Heart palpitations
- Chest pressure or pain
- Shortness of breath
- Fatigue
- Light-headedness
- Anxiety



Many patients feel anxious and powerless

PSVT = Paroxysmal Supraventricular Tachycardia; AFib-RVR = Atrial Fibrillation with Rapid Ventricular Rate

Current Treatment of Acute Attacks in the Emergency Department are Burdensome and Costly



For many patients, physicians and payers:

- Time-consuming, disruptive
- Often results in a hospital admission
- Expensive use of healthcare system resources



Need for simple, fast-acting treatment, reduce trips to ED and calls to physicians

ED = Emergency Department

Etripamil Nasal Spray is a Novel L-type Investigational Calcium Channel Blocker Designed to Treat Episodes Quickly



Fast onset of action
($T_{\max} \leq 7$ min)



Patient
self-administered



Small enough to
fit in your pocket

Empowering patients to treat symptomatic attacks

PSVT and AFib-RVR Populations in the US



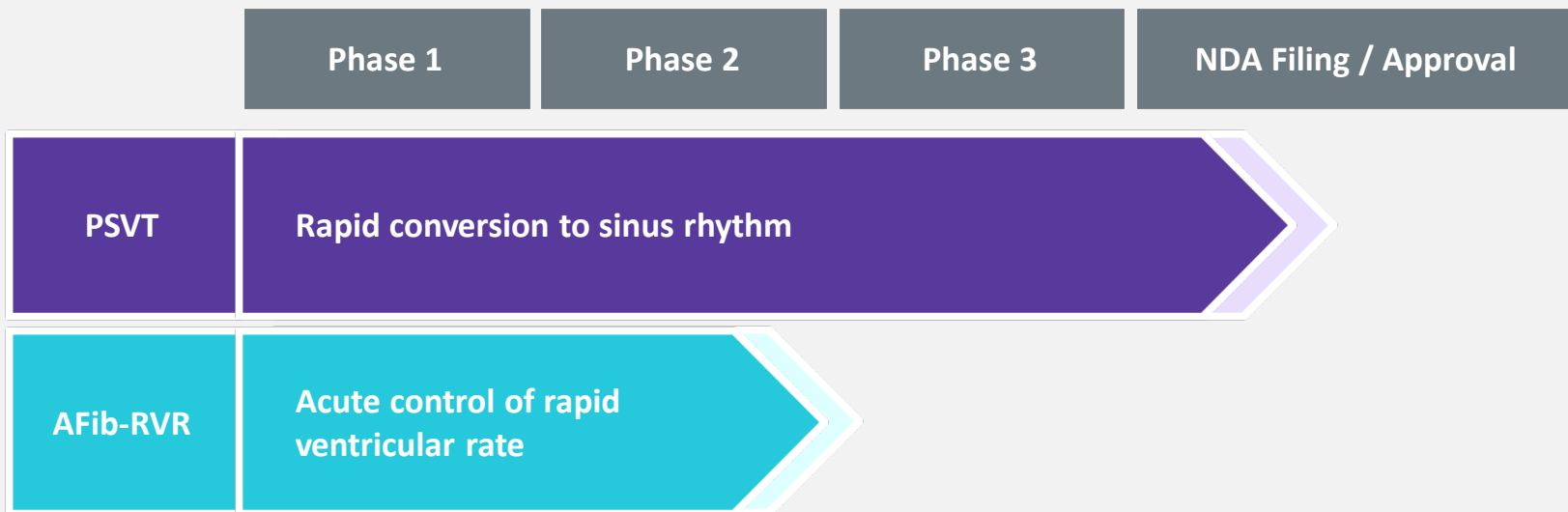
	PSVT	Atrial Fibrillation
Total Patients (2030)	2.6 Million ³	10 Million ¹
Discharged ED Visits & Hospital Admissions (2016)²	145 Thousand	785 Thousand
Target Addressable Market (2030) Patient Population	1.0-1.6 Million⁵	~3-4 Million⁴

Source(s): **1.** Colilla et al., Am. J. Cardiol. 2013, 112(8), 1142-1147; Miyasaka et al., Circulation, 2006, 114, 119-125. American Heart Association **2.** HCUP ED & Admissions Data (2016), accessed January 2021. **3.** Rehorn et al. Journal of Cardiovascular Electrophysiology. 2021 Aug; 32(8): 2199-2206. doi: 10.1111/jce.15109. Epub 2021 Jun 14. 2018 prevalence of 2M anticipated to grow at a CAGR of ~2% **4.** Quantitative Survey conducted by Triangle Insights, May 2021, N=250 Clinical Cardiologists, Interventional Cardiologists, and Electrophysiologists. **5.** Estimate of TAM (~40%-60% of prevalence) based on internal PSVT patient market research (Blueprint Research Group, n=247) and longitudinal analysis of claims data.

Clinical Pipeline Advancement for Etripamil



Pharmacology of L-type calcium channel blockers drives broad clinical utility



PSVT = Paroxysmal Supraventricular Tachycardia; AFib-RVR = Atrial Fibrillation with Rapid Ventricular Rate; NDA = New Drug Application

NDA Resubmitted for Etripamil in PSVT



- NDA Resubmission – March 2024
 - Expect standard NDA review period following resubmission
 - Resubmission included:
 - Supplementary datasets using a slightly different method to define "treatment-emergent AEs"
 - ECG datafiles in additional formats to better enable FDA analyses
- Type A meeting with FDA – February 2024
 - Timing of adverse events in question had minimal impact on the overall characterization of the safety profile of etripamil
 - Confirmation of Milestone's approach to address RTF
- Refusal to File Notice – December 2023
 - FDA requested clarification about the times recorded for some AEs in the Phase 3 clinical trials

PSVT = Paroxysmal Supraventricular Tachycardia; NDA = New Drug Application; RTF = Refusal to File; ECG = electrocardiogram; AEs = adverse events

Comprehensive Data Supports FDA New Drug Application for Rapid Conversion of SVT Episodes to Sinus Rhythm in Adults



NODE-1	NODE-301	NODE-302 (Ext. of NODE-301)	RAPID	NODE-303
Phase 2	Phase 3	Phase 3	Phase 3	Phase 3
Efficacy (dose finding)	Efficacy	Safety & Efficacy (Repeat Episodes)	Efficacy	Safety (Repeat Episodes)
N = 64	N = 431	N = 169	N=706	N ~450

- >1,600 Patient Exposures to Etripamil \geq 70 mg
- Positive Phase 3 pivotal RAPID trial anchors NDA submission

NDA = New Drug Application; SVT = Supraventricular Tachycardia
NB: NODE-301 and RAPID studies also collected Safety information
Source: Milestone Pharmaceuticals Data on File

Positive Phase 3 RAPID Trial in Patients with PSVT



Randomized, double-blind, placebo-controlled trial enrolled 706 patients to self-administer etripamil NS 70 mg regimen or placebo NS during a PSVT event outside the medical setting

Repeat-dose regimen – if symptoms not resolved in 10 minutes, second dose administered

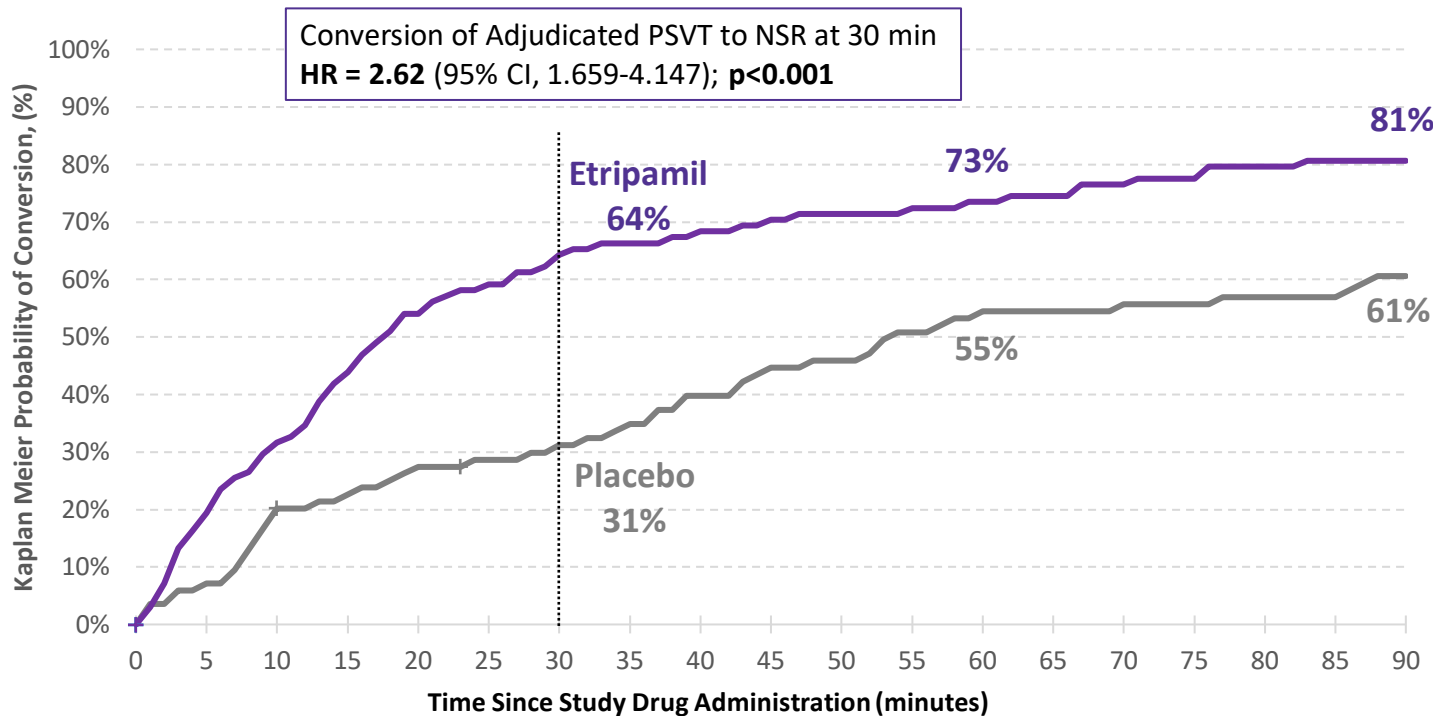
- Achieved primary endpoint - statistical significance (HR = 2.62; 95% CI 1.66, 4.15; $p < 0.001$)
- Median time to conversion 17.2 min with etripamil vs. 53.5 min with placebo
- Need for additional medical interventions or emergency department care ~40% lower for etripamil patients compared to placebo
- Favorable safety and tolerability consistent with prior studies – the most common AEs localized to nasal administration site

Primary: Conversion of Adjudicated PSVT to Normal Sinus Rhythm (NSR) at 30 min

NS= nasal spray; HR = Hazard Ratio; CI = Confidence Interval. Median Time To Conversion data: 17.2 min (95% CI 13.4, 26.5) with etripamil nasal spray regimen vs. 53.5 min (95% CI 38.7, 87.3) with placebo. Source: American Heart Association Scientific Sessions, Late-Breaking Clinical Trial Presentation, November 2022; *Am Heart J* (2022); and *The Lancet* (2023).

Data Indicate Fast Conversion to Normal Sinus Rhythm (NSR)

RAPID Study



Number of Subjects at Risk	Placebo	85	78	67	64	60	58	56	53	49	45	44	40	37	37	36	36	35	35	32
	Etripamil	99	79	67	55	45	40	35	33	31	29	28	27	26	25	23	22	20	19	19

Source: Milestone Pharmaceuticals Data on File

HR = Hazard Ratio; CI = Confidence Interval. Source: American Heart Association Scientific Sessions, Late-Breaking Clinical Trial Presentation, November 2022; and *The Lancet* (2023).

Etripamil Well-Tolerated with a Favorable Safety Profile

RAPID Study – Safety Events



Subject-reported AEs, ¹ n (%)	Placebo ² N=120	Etripamil ² N=135
Nasal discomfort	6 (5.0)	31 (23.0)
Nasal congestion	1 (0.8)	17 (12.6)
Rhinorrhea	3 (2.5)	12 (8.9)
Epistaxis	2 (1.7)	8 (5.9) ³
Syncope	0.0	0.0
Loss of Consciousness	0.0	0.0
Pre-Syncope	0.0	0.0
Dizziness	0.0	1 (0.7) ⁴
Subjects with Events from Independent ECG Reading, ⁵ n (%)	Placebo ⁶ N=116	Etripamil ⁶ N=128
2 nd Degree AV Block - Mobitz I AV Block	0	0
2 nd Degree AV Block - Mobitz II AV Block	0	0
3 rd Degree AV Block	0	0

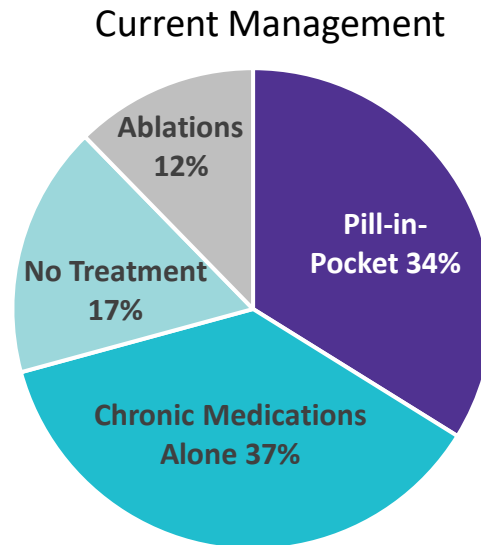
¹ Randomized-period treatment-emergent adverse events, those >5% or those specifically tracked as potentially representing lowered blood pressure. ² Safety Population. ³ Six of 8 rated as mild, 2 of 8 rated as moderate, 0 needing intervention. ⁴ Rated as mild. ⁵ Expert cardiac electrophysiologist adjudication committee. ⁶ Safety population with evaluable 5-hr. ambulatory ECG data. AE timing – within 24 hours following drug administration. Source: American Heart Association Scientific Sessions, Late-Breaking Clinical Trial Presentation, November 2022; and *The Lancet* (2023).

Current US PSVT Market



Total annual US healthcare expenditures of ~\$3B

- Prevalence ~2M patients diagnosed with PSVT
- ~650K patients treated per year
 - ~300K newly diagnosed per year
 - >150K ED/hospital visits per year
 - ~80K ablations per year



PSVT = Paroxysmal Supraventricular Tachycardia; ED = Emergency Department

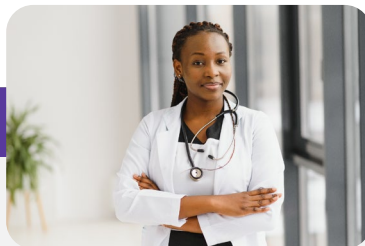
Source: (1) Sacks, N.C. et al; Prevalence of Paroxysmal Supraventricular Tachycardia (PSVT) in the US in Patients Under 65 Years of Age; Abstract and Oral Presentation at the International Academy of Cardiology Annual Scientific Sessions 2018, 23rd World Congress on Heart Disease; Precision Xtract, Boston, MA, USA; and data-on-file from IBM MarketScan® Commercial Research Database (<65y) and the Medicare Limited Dataset (≥65y), with demographic, enrollment and claims data for commercially insured (Truven) and Medicare covered patients using PSVT code 427.0 or I47.1 for up to a 9-year interval between 2008 and 2016 inclusive; (2) Quantitative market research conducted by Triangle Insights Group (n=250 cardiologists), June-September 2020

Etripamil Has Substantial Potential Value for Stakeholder Groups If Approved



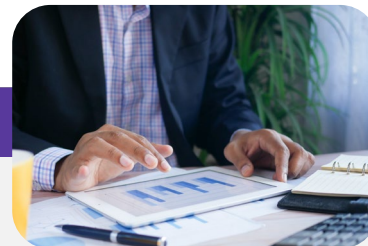
Patients - Empowerment

- Fast, reliable self-administration
- Less disruption, reliance on the Emergency Department
- Less fear over when the next event will occur



Physicians – Dependable Tool

- Designed for patient self-management
- Frees up physician time and office resources
- Trusted CCB mechanism

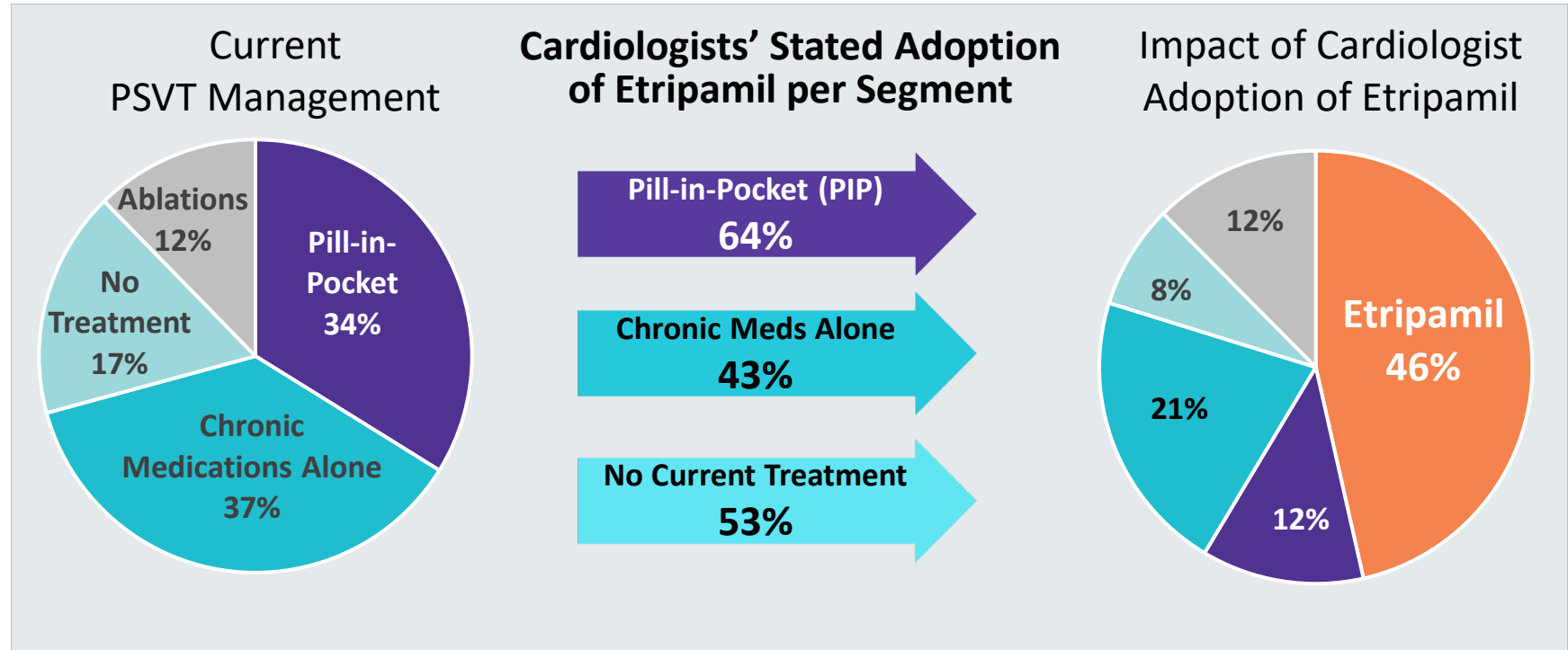


Payers – More Efficient Use of Resources

- Novel and cost-effective treatment
- Reduction in ED/hospital admissions

Sources: Internal market research, PSVT = Paroxysmal Supraventricular Tachycardia, ED = Emergency Department

Cardiologists Expect to Prescribe Etripamil to the Majority of Unablated Patients with PSVT



Source: Quantitative market research conducted by Triangle Insights Group (n=250 cardiologists), June-September 2020; Estimated number of unique patients with annual claims for PSVT from Truven MarketScan data, 2008-2016 analyzed by Precision Xtract, 2019

Management of Patients with PSVT and Call Point Targeting



		Clinical Cardiologists	Primary Care Physicians	Electro-physiologists
% of patients managed		~60%	~30%	~10%
Long-term Use	Add to or Replace Chronic Medications	Primary Target		
Medium-term Use	Defer Ablation			
Short-term Use	Bridge to Ablation	Secondary Target		

- Targeted sales force to reach majority of available opportunity
- Significant overlap with most common CV portfolio call points

Majority of patients with PSVT managed by CV specialists, leading to commercial efficiencies

Source: Internal market research

PSVT & AFib-RVR Populations in the US



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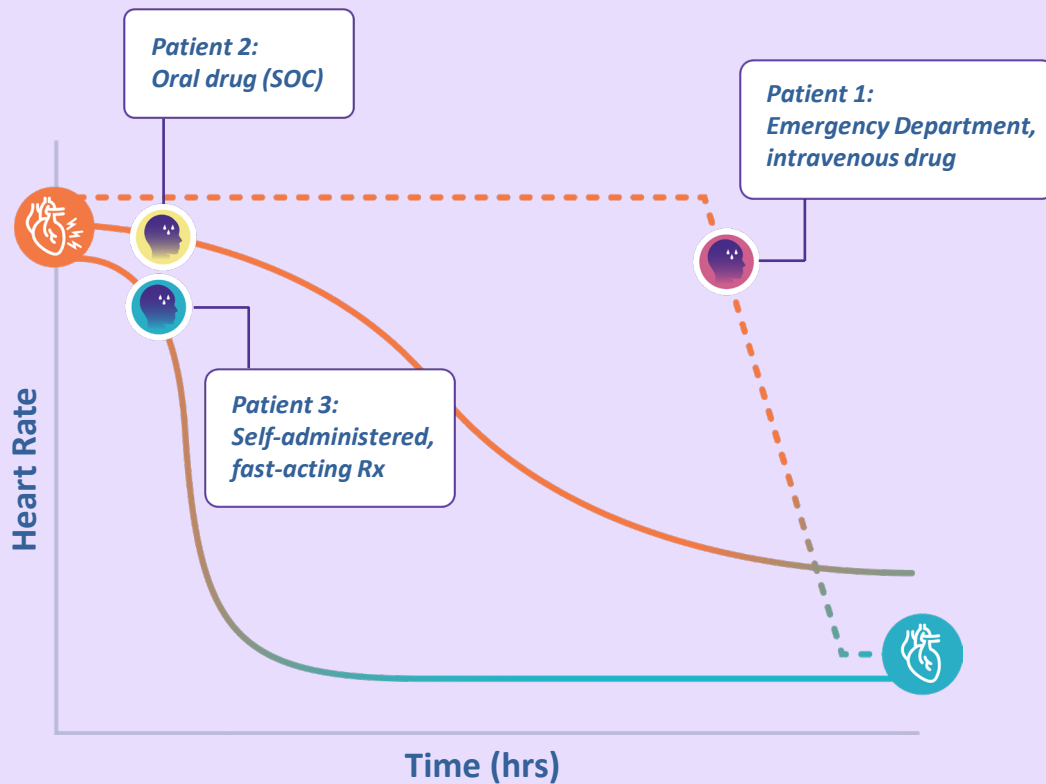
AFib-RVR – Acute Treatment Scenarios



Acute AFib-RVR Attack



- Heart palpitations
- Chest pressure or pain
- Shortness of breath
- Fatigue
- Light-headedness
- Anxiety



Potential Use Cases of Etripamil for AFib-RVR

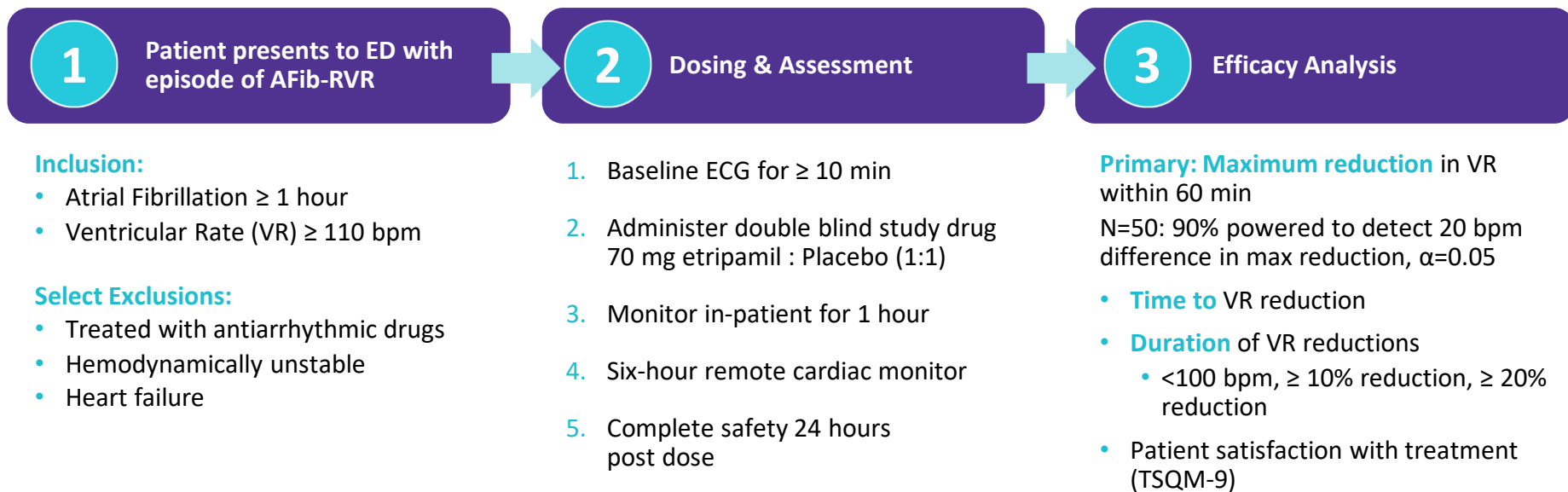


1. Acute, stand-alone, portable treatment for rate control and symptom control
2. Acute treatment as a bridge (“precursor”) to the delayed effects of oral rate-control or anti-arrhythmic drug administration
3. Use peri-ablation
4. Non-invasive administration opens options for potential treatment without an IV line in emergency-department or ambulance setting

AFib-RVR = atrial fibrillation with rapid ventricular rate, Rx = treatment, IV = intravenous

A drug that is rapidly acting and self-administered outside of a medical setting would have characteristics that would help an unmet need

ReVeRA - Phase 2 Proof of Concept Trial of Etripamil in AFib-RVR in the Emergency Department Setting

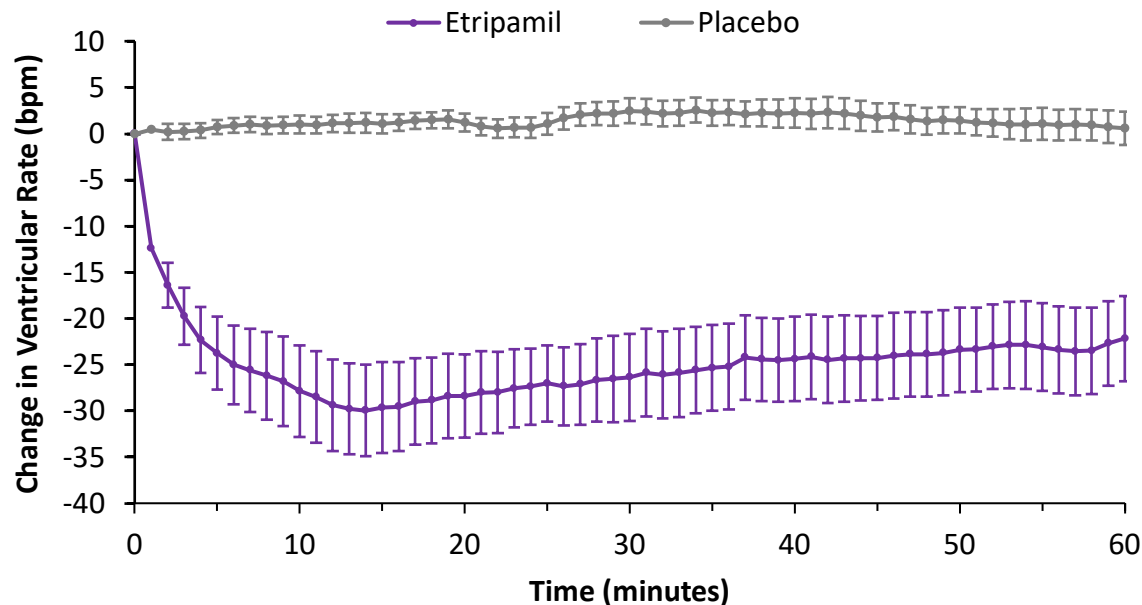


AFib-RVR = Atrial Fibrillation with Rapid Ventricular Rate; TSQM-9, Treatment Satisfaction Questionnaire for Medication; ED = Emergency Department.

Source: American Heart Association Scientific Sessions, Featured Science Presentation, Nov. 2023; and *Circulation: Arrhythmia & EP* (Nov. 2023)

Assessing Ventricular Rate Reduction with Etripamil – How Much; How Fast; How Long

ReVeRA – Substantial & Rapid Reduction in VR with Etripamil



PRIMARY ENDPOINT: Maximum Reduction in VR from Baseline	Placebo NS, N=25 ¹	Etripamil NS (70 mg) N=24 ¹
Mean, bpm	-5.06	-34.97
Difference in means, bpm	--	-29.91
p-value ²	--	<0.0001

NS = Nasal Spray; VR = ventricular rate; bpm = beats per minute

Note: Data plotted on time course are not those directly used for calculation of Primary endpoint (by pre-specified plan). X-axis: of plot: time following drug administration; Y-axis: 5-min moving average, bpm \pm SEM. ¹ Efficacy Population (all randomized patients receiving study drug remaining in atrial fibrillation with adequately diagnostic ECG recordings for at least 60 min post drug)

² By ANCOVA. Source: American Heart Association Scientific Sessions, Featured Science Presentation, Nov. 2023; and *Circulation: Arrhythmia & EP* (Nov. 2023)

ReVeRA Study: TSQM-9 PRO¹ Assessment & Results



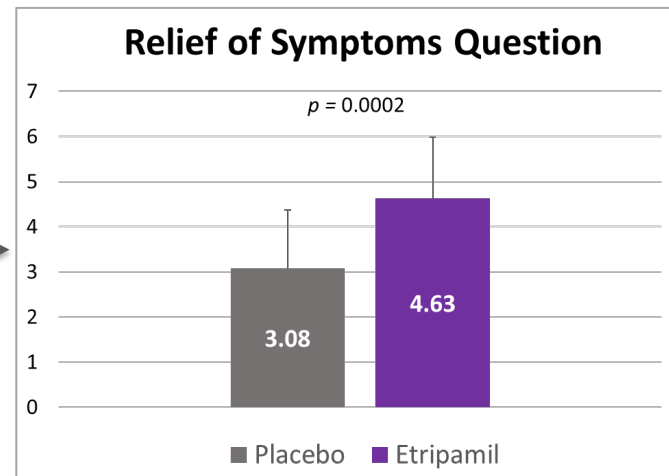
ReVeRA Data Show Significant Improvement in Patient-Reported Relief of Symptoms

- TSQM-9 PRO¹ includes an Effectiveness Domain
- Domain includes three questions, each answered on 7-point anchored scale

1	2	3	4	5	6	7
Extremely Dissatisfied	Very Dissatisfied	Dissatisfied	Somewhat Satisfied	Satisfied	Very Satisfied	Extremely Satisfied

- The domain score is calculated from its three question scores
 - Domain score is on a 0 to 100-point scale
 - Domain score of 50/100 corresponds to a 4/7 = “Somewhat Satisfied”

	Placebo ² N=25	Etripamil ² N=24	p value ³
Effectiveness Domain Scores, mean (SD)	36.67 (21.64)	62.69 (21.59)	p<0.0001



Delta = 1.55 units
on Relief of Symptoms

¹ Treatment Satisfaction Questionnaire for Medication-9, a validated Patient-Reported Outcome tool. ² Efficacy Population (all randomized patients receiving study drug remaining in atrial fibrillation with adequately diagnostic ECG recordings for at least 60 min post drug). ³ From t-test. Source: American Heart Association Scientific Sessions, Featured Science Presentation, Nov. 2023; and *Circulation: Arrhythmia & EP* (Nov. 2023)

Proposed Phase 3 Registrational Study in AFib-RVR

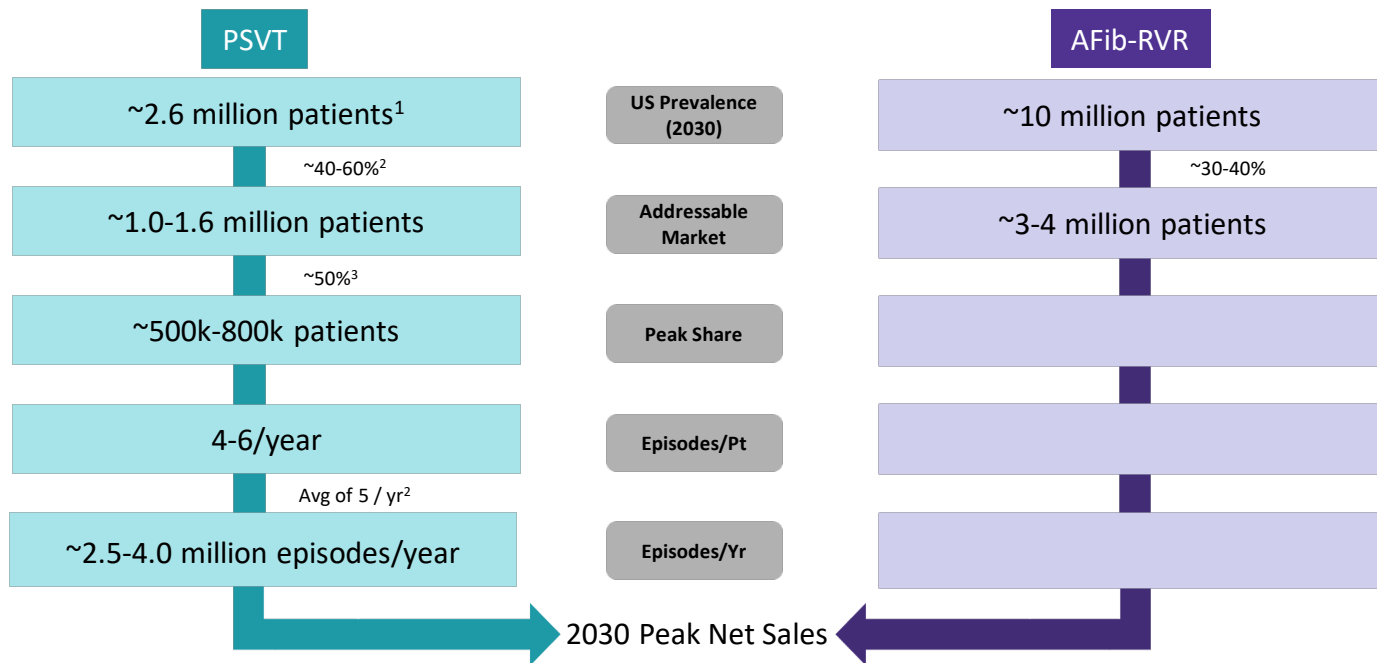


- Key Inclusion Criterion: history of symptomatic episodes of AFib-RVR
- Patients self-administer drug at-home for perceived episodes of AFib-RVR
- Dose: etripamil NS 70 mg (same as proposed indication in PSVT); repeat-dose regimen
- Primary endpoint = maximum reduction in VR, same as ReVeRA; etripamil vs placebo
- Key Secondary endpoint = symptom relief, via PRO
- Objectives:
 - Show $p < 0.05$ for Primary and Key Secondary endpoints in ITT population; no alpha-spend
 - Show meaningful PRO-based change in Target population (eg, 1-point change on 7-point scale)
- Estimated study size: $N \approx 150-200$ total events, based on¹: 90% power, $p < 0.05$

AFib-RVR = atrial fibrillation with rapid ventricular rate; ITT = intention to treat; PSVT = paroxysmal supraventricular tachycardia; TSQM = Treatment Satisfaction Questionnaire for Medication PRO; PRO = patient reported outcome

¹ Sizing assumptions also include PRO delta of 1.2 points, standard deviation = 1.6, Target/ITT population ratio of 0.70

Peak US Market Opportunity for Etripamil in PSVT and AFib-RVR



AF – RVR = Atrial Fibrillation with Rapid Ventricular Rate; TAM = Target Addressable Market

Market Research Suggests a TAM of 4+ Million Patients across both PSVT and AFib-RVR Indications

Sources: 1. Rehorn et al. Journal of Cardiovascular Electrophysiology. 2021 Aug; 32(8): 2199-2206. doi: 10.1111/jce.15109.; 2. 2019 market research with patients conducted by Blueprint Research Group, (n=247); 3. 2020 market research with healthcare providers conducted by Triangle Insights Group, (n=250)

Finances



Pro-forma cash and short-term investments of \$98.4M ⁽¹⁾

- Funds operations into 2026



Synthetic Royalty Financing of \$75M available upon approval⁽²⁾



Launch funded for 4+ quarters, if etripamil approved mid-2025



Pro-Forma Equity: 66.0M in shares & prefunded warrants

- 53.1M common shares
- 12.9M pre-funded warrants

(1) Pro-Forma for March 4, 2024 equity financing of \$32.4 million. \$66.0 million cash and short-term investments on hand as of December 31, 2023

(2) In March 2023, Milestone announced a \$125.0M strategic with RTW Investments. The financings consists of \$50.0M in convertible notes issued in March 2023, and a commitment \$75.0M in non-dilutive royalty funding if etripamil is approved by the FDA.

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Thank you



Strategic Financing with RTW

Funds launch and commercialization of Etripamil in PSVT



\$50M

Convertible Notes

- **6-year term**
- **Initial Conversion Price \$5.23/share**
 - **50% premium to 30-day VWAP¹**
- **6% coupon**
 - **Payable quarterly, or at our option payable in kind (PIK) for first 3 years**

\$75M

Synthetic Royalty

- **Funded if FDA approves etripamil in PSVT**
- **Non-dilutive synthetic royalty**
- **7% Royalty² <\$500M³**
- **4% Royalty \$500-\$800M**
- **1% Royalty >\$800M**

¹ VWAP – Volume Weighted Average Price as of 3/27/23 ² Rate can increase by 2.5% if certain annual net sales thresholds are not met ³ Annual net product sales of etripamil in the United States

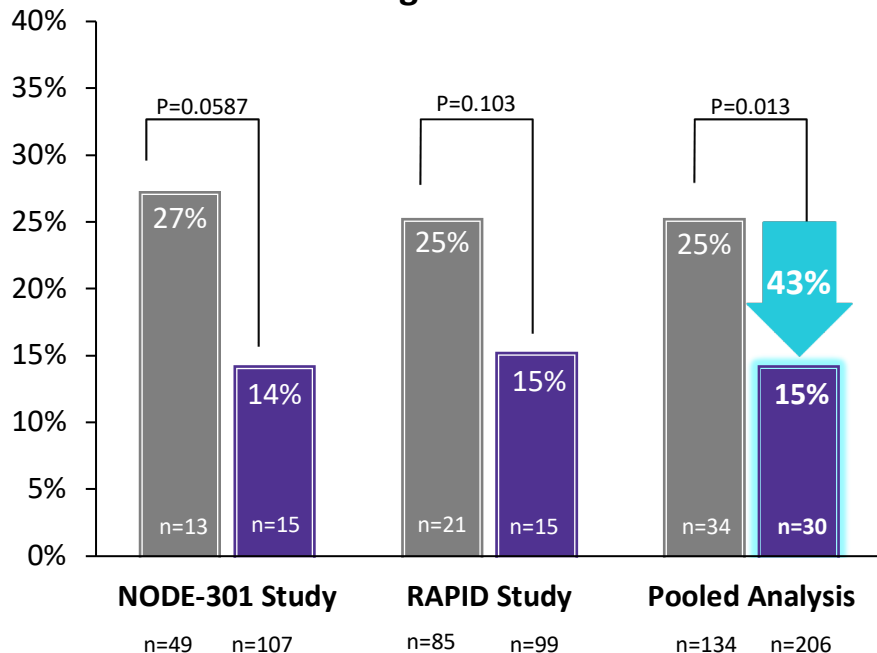
Fewer Medical Interventions and Emergency Department Visits

RAPID & NODE-301 Studies

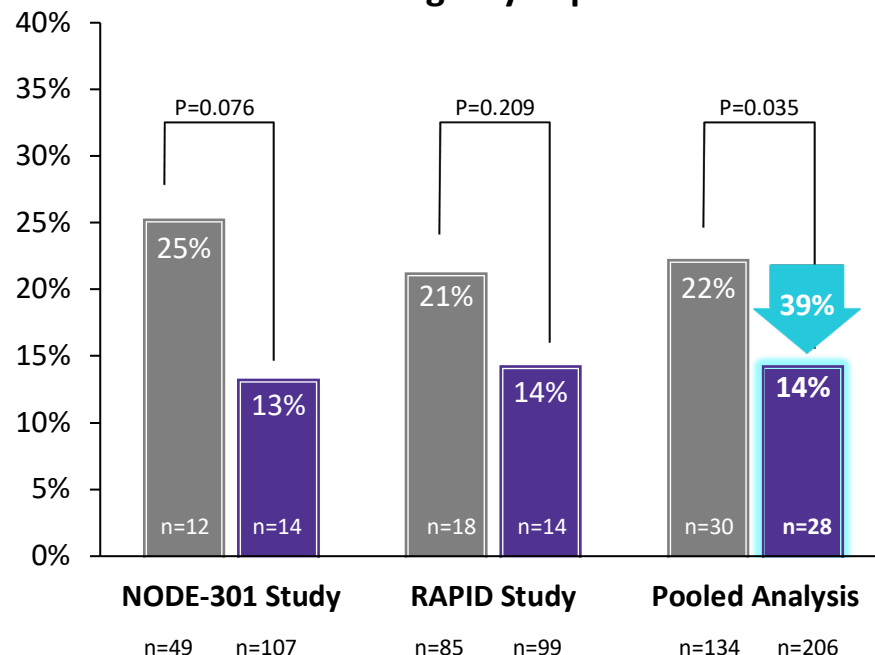


Placebo Etripamil

Patients Seeking Medical Intervention



Patients with Emergency Department Visits



Pooling of data and analyses were prespecified in RAPID statistical analysis plan. Statistical analyses performed by Chi-square test for each study data set and pooled data set. Sources: American Heart Association Scientific Sessions, Late-Breaking Clinical Trial Presentation (Nov. 2022); International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Presentation (May 2023)