ZIO® BY iRHYTHM

Compliance, ECG quality, and engagement with a smartphone app in patients with in-clinic compared with home-based, self-applied long-term continuous ECG patch monitors

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Disclosures

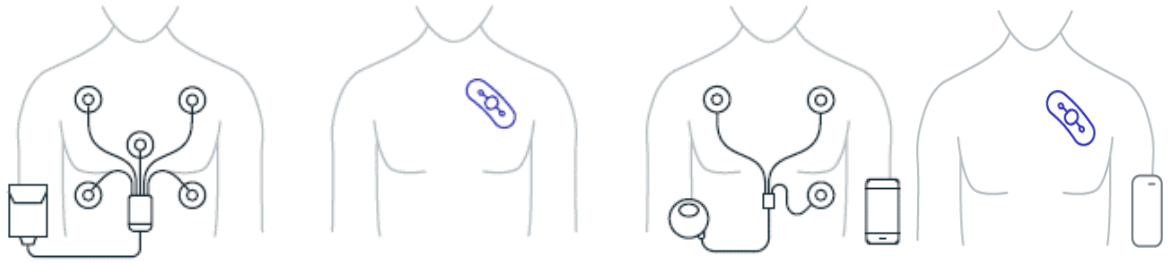
JM Ashburner, R Pinkerton, V Fokin, and AJ Battisti are employees of iRhythm Technologies, Inc.

M Turakhia:

- Employment: Chief Medical & Scientific Officer, iRhythm Technologies, Inc.
- Equity: Connect America, Evidently (Co-Founder), AliveCor, Hippocratic.ai, Pocket RN, RCE Medical

Background

Patch-based, long-term continuous ambulatory cardiac monitoring (LTCM) of up to 14 days is widely used for arrhythmia detection



	Holter	Long-Term Continuous (LTCM)	External Loop/ Event Recorder	Mobile Cardiac Telemetry (MCT)
Monitoring time	24-48 hours	Up to 14 days	Up to 30 days	Up to 30 days
Recording type	Continuous interrupted	Continuous uninterrupted	Loop	Continuous interrupted
Data reported	Continuous	Continuous	Episodic	Episodic

Adapted from Spatz E / Turakhia M, *NEJM* 2024.

LTCM has been shown to be superior vs. other modalities

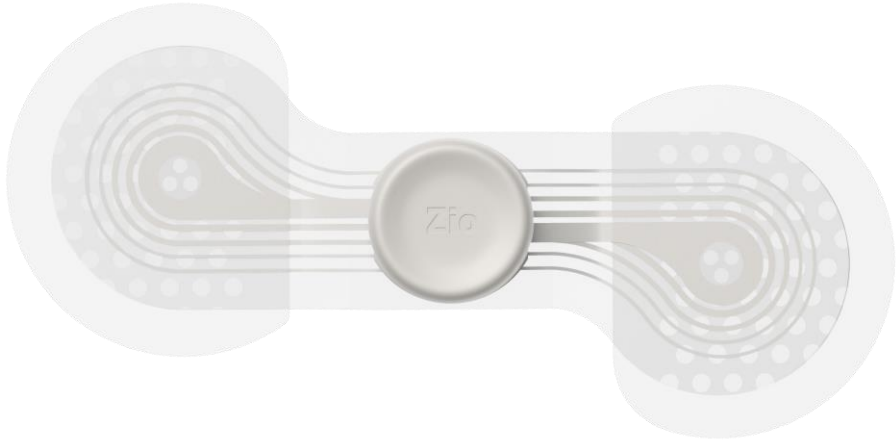
- Analyses of Medicare and private insurance cohorts (n=716,496) without prior arrhythmia diagnosis prescribed monitoring for clinical indications
- LTCM associated with:
  - Highest adjusted odds of arrhythmia diagnosis
  - Fewer retests
  - Lower follow-up health care resource costs than other ACM types

Reynolds MR, et al. *Am Heart J*. 2024.
Russo P, et al. *Am J Manag Care*. 2025.

Zio Monitor

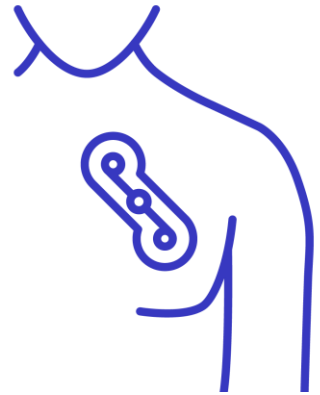
In analyses of Medicare and private insurance cohorts (n=716,496):

- Zio was superior to all other ACM categories and other LTCM devices



Zio® Monitor (iRhythm Technologies), launched in 2023

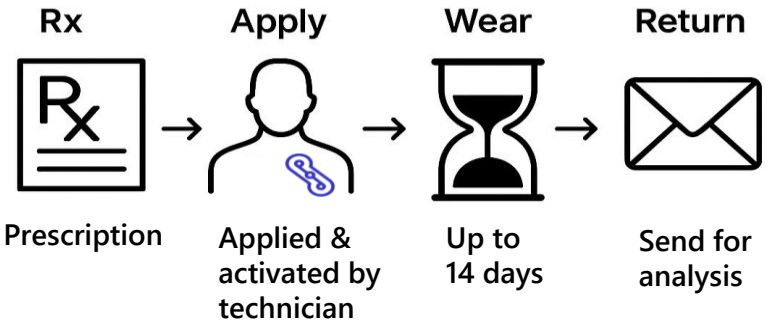
- Designed for longer wear time and improved patient comfort
- 50% lighter, smaller, breathable, waterproof adhesive, improved adhesive assembly, increased flexibility



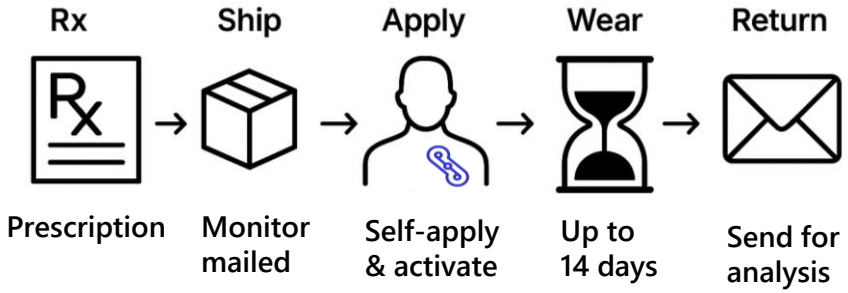
LTCM Application and Activation Methods

There are different ways LTCM can be administered

- In-clinic based application and activation

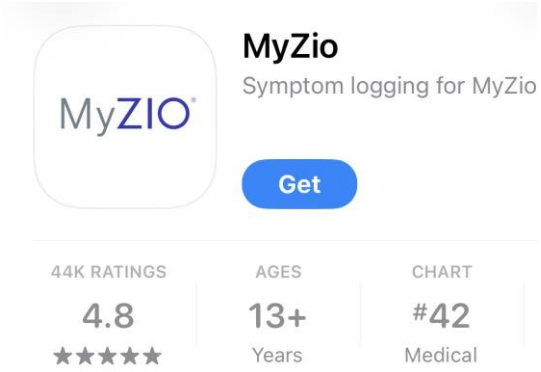


- Home-based application and activation



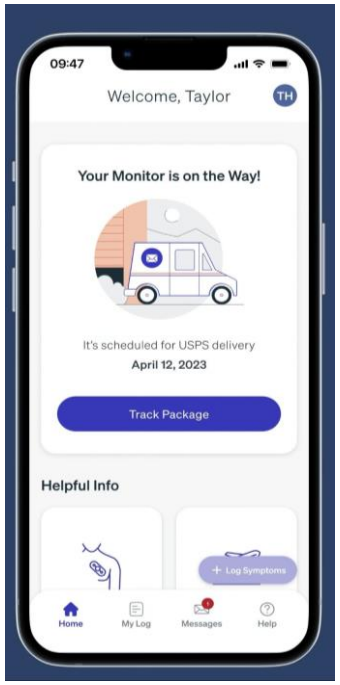
Although prior data show superior diagnostic yield and lower retesting with the device, achieving timely diagnosis depends on correct skin preparation, compliant wear, and prompt device return.

MyZio® Smartphone App (iOS and Android)

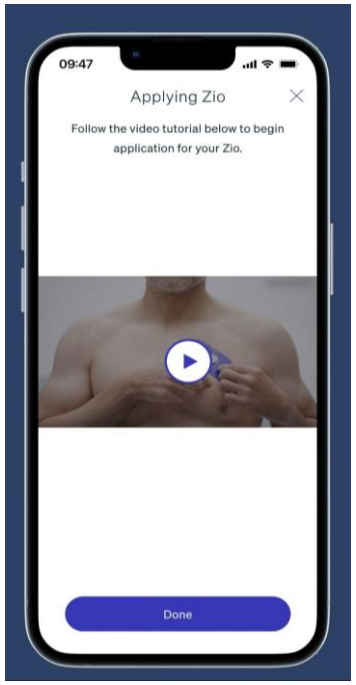


- Digital tool for onboarding, application instructions, return reminders
- Can be used for both in-clinic and home-based applications
- Associated with increased symptom-logging and symptom-rhythm correlation (no ECG transmission)
- SMS reminders available for all patients; manual symptom diary also supported

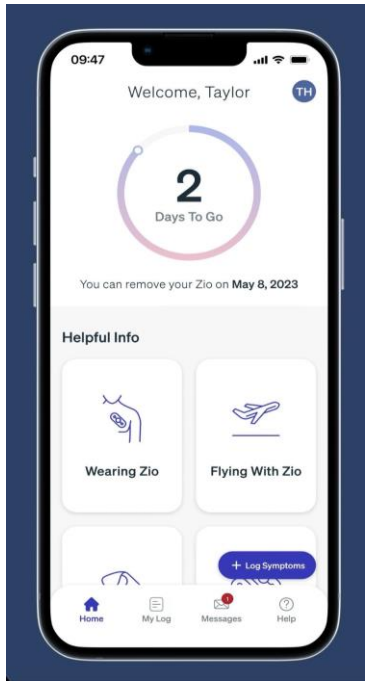
Monitor tracking



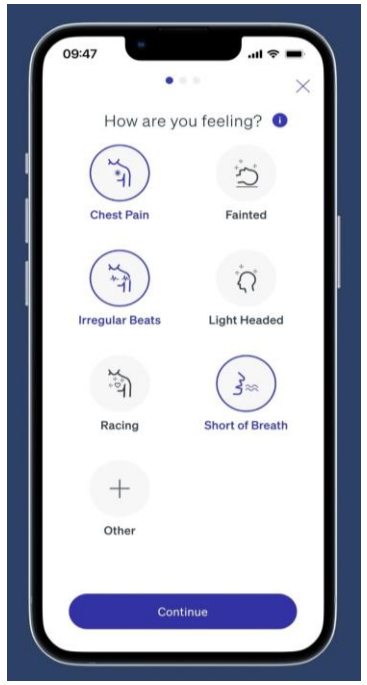
Patient instruction videos



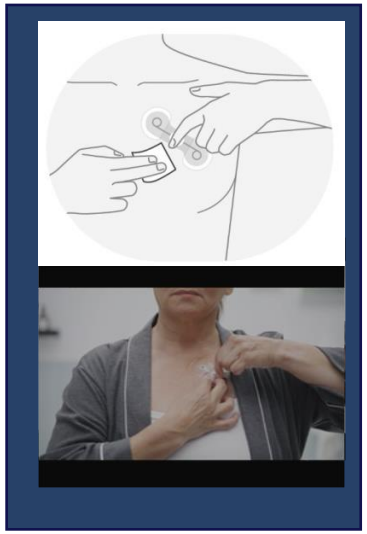
Patient tracking of wear progress



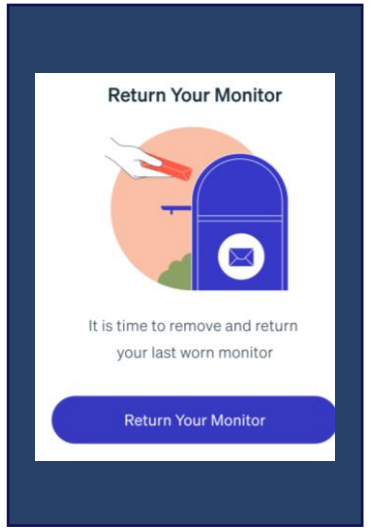
Patient symptom log



Removal Instructions



Return for Analysis Reminders



Objective

To assess wear compliance and ECG signal quality for the Zio monitor device applied in-clinic vs. home, and to evaluate the impact of MyZio app use on these outcomes.

Methods

Study Design: Retrospective cohort using deidentified data from iRhythm's Clinical Research Data Warehouse

Population: ≥ 18 years prescribed Zio Monitor for 14 days, Dec 2024 - June 2025

Outcomes:

- Wear time
- Analyzable time (% free from artifact)
- Return compliance (worn, activated, returned ≤ 45 days)
- Early wear terminations (≤ 2 days)
- Actionable arrhythmia yield
  - Defined as any episode of AF ≥30s, SVT ≥90 bpm & ≥30s, VT ≥100 bpm & ≥4 beats, any VF, pause ≥ 3s, and/or AV block)

Comparisons:

- In-clinic application vs. home-based application
- MyZio app users vs. non-users

Analyses: Quantile regression (continuous) and binomial GLM (binary), adjusted for age and sex

Study Population

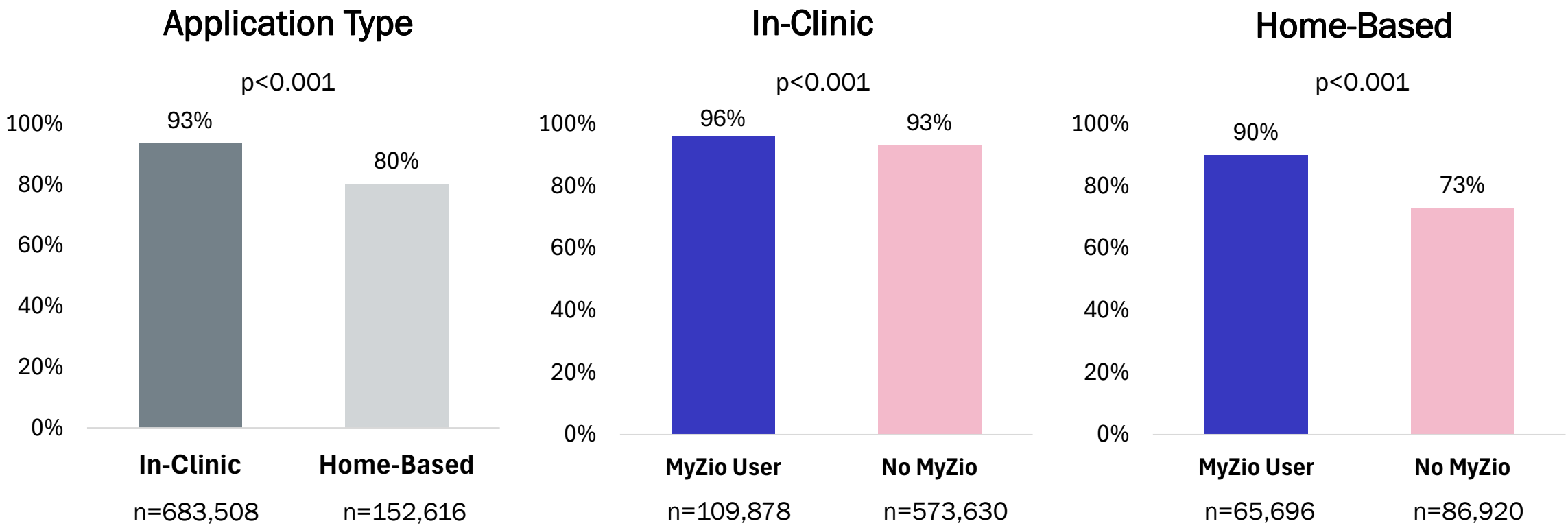
N=742,268 patients

	In-Clinic Applications			Home-Based Application		
	All	MyZio+	No MyZio	All	MyZio+	No MyZio
Devices	625,458 (84%)	102,887 (17%)	522,571 (84%)	116,810 (16%)	60,538 (52%)	56,272 (48%)
Age (SD), years	62.7 (17.6)	50.5 (17.7)	65.1 (16.5)	60.7 (17.6)	54.9 (17.6)	66.9 (15.5)
Sex, female	347,987 (56%)	64,169 (62%)	283,818 (54%)	66,930 (57%)	36,321 (60%)	30,609 (54%)

- MyZio use more common with home-application (52% vs. 17%)
- Patients with devices applied in-clinic slightly older (62.7 vs. 60.7 years)
- MyZio users younger than non-users; more often female

Return Compliance* Across Application Methods and MyZio App Usage

* devices activated, worn, and returned ≤ 45 days (operational/quality assurance data)



- Return compliance was higher with in-clinic application
- MyZio app use was associated with higher return compliance across application types

Wear Time and Analyzable Time

	Comparison	Median (Q1-Q3)	Adjusted* Median Diff (95% CI)
Wear time (days)	In-Clinic vs. Home	**13.9** (13.1-14.0) vs. **13.8** (12.8-14.0)	-0.06 (-0.06 - -0.05)
	MyZio vs. No MyZio (In-Clinic)	**13.9** (13.4-14.0) vs. **13.9** (13.0-14.0)	0.03 (0.02 - 0.03)
	MyZio vs. No MyZio (Home)	**13.8** (13.0-14.0) vs. **13.8** (12.5-14.0)	0.08 (0.07 - 0.09)
Analyzable time (%)	In-Clinic vs. Home	**98.0%** (95.0-99.0) vs. **98.0**% (95.0-99.0)	0.01% (-0.01 - 0.03)
	MyZio vs. No MyZio (In-Clinic)	**98.5%** (95.6-99.4) vs. **98.3%** (94.9-99.4)	0.14% (0.12 - 0.16)
	MyZio vs. No MyZio (Home)	**98.6%** (96.0-99.5) vs. **98.0%** (93.9-99.3)	0.34% (0.30 - 0.38)

* Adjusted medians estimated using quantile regression controlling for age and sex.

- Home-based application achieves comparable wear time and analyzable time to in-clinic
- Use of MyZio is associated with slightly increased analyzable time

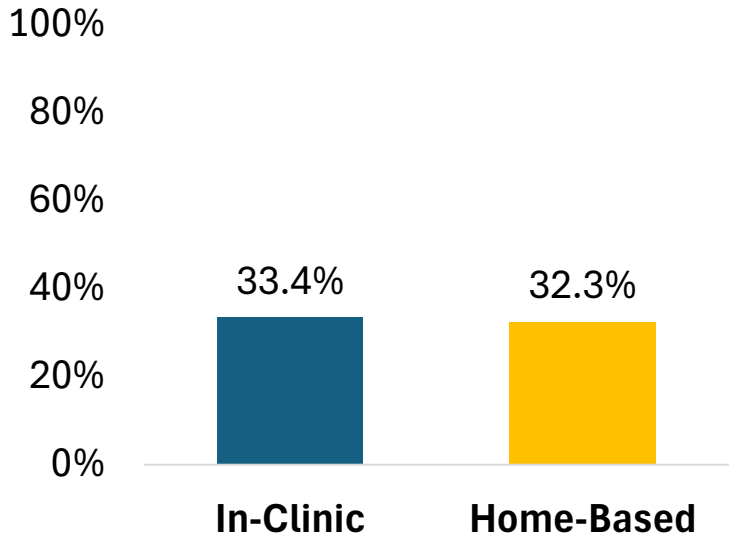
Early Wear Terminations and Arrhythmia Yield

Early Wear Terminations

Comparison	% (Unadjusted)	Adjusted* RR (95% CI)
In-Clinic vs. Home	1.2% vs. 2.0%	0.59 (0.56-0.61)
MyZio vs. No MyZio (In-Clinic)	0.6% vs. 1.3%	0.47 (0.44-0.51)
MyZio vs. No MyZio (Home)	1.3% vs. 2.8%	0.46 (0.42-0.50)

* Adjusted risk ratios (RRs, 95% CI) estimated were estimated using a generalized linear model (binomial distribution), controlling for age and sex.

Actionable Arrhythmia Yield†



† Any episode of AF ≥30s, SVT ≥90 bpm & ≥30s, VT ≥100 bpm & ≥4 beats, any VF, pause ≥ 3s, and/or AV block

- Early wear terminations were infrequent and lowest among MyZio users
- Home-based application achieved comparable arrhythmia yield to in-clinic

Discussion

- Home-based application performed comparably to in-clinic application.
- Wear metrics for home-based application align with prior studies of previous-generation device.
- Prior analyses demonstrating superiority of Zio LTCM vs. other modalities used Zio XT as reference device. Zio monitor achieves longer wear times and analyzable time vs. Zio XT.
- The AMALFI randomized trial of screening for AFib, which utilized home-based application of Zio LTCM for 2520 intervention participants, achieved return compliance of 84.4%.
    - Patient-facing apps like MyZio may enhance engagement and compliance in both clinical care and clinical trials

Limitations

- Potential residual confounding
  - MyZio users and non-users may differ in captured comorbidities in EHR or claims data — which were not available for linkage
  - MyZio users and non-users may differ in unmeasured ways (literacy, socioeconomic status)
    - Spanish language version of MyZio recently launched
    - Opportunity to improve compliance by reducing language-related barriers to use

Conclusions

- Home-based application achieved wear compliance, signal quality, and arrhythmia detection similar to in-clinic application
- MyZio app improved compliance, particularly for home-based users
- Apps may enhance enrollment and compliance with home-based or ambulatory diagnostics
- Home-based workflows could reduce clinic and provider burden, but requires further evaluation