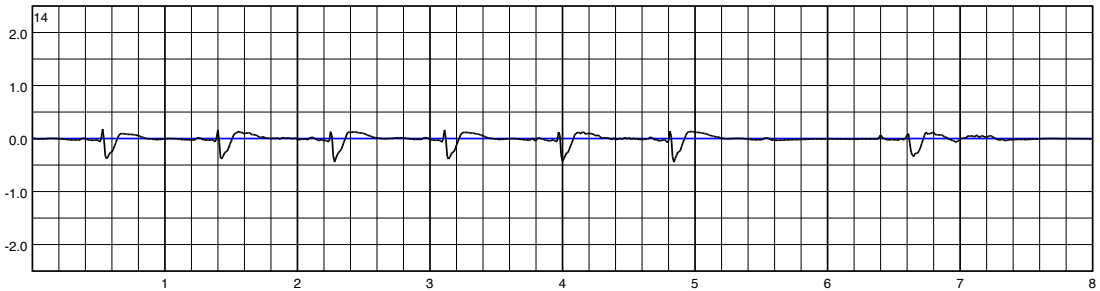


# ZOLL Patient Management Network Case Study: Bradycardia

SS Channel: Amplitude Scale = 1 mv/10 mm Recording Speed - 25 mm/Second



FB Channel: Amplitude Scale = 1 mv/10 mm Recording Speed - 25 mm/Second

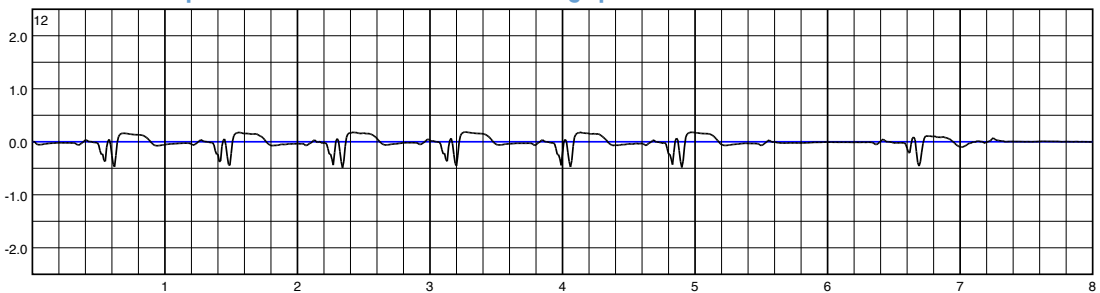


Figure 1. Portion of the patient's ECG automatically downloaded from the device and remotely viewed on the ZOLL Patient Management Network.

## Synopsis

The LifeVest® wearable cardioverter defibrillator (WCD) was prescribed for a recent NSTEMI patient with a Left Ventricular Ejection Fraction (LVEF) = 30% for protection from Sudden Cardiac Death (SCD). Bradycardia events recorded by the LifeVest WCD and reviewed on the ZOLL® Patient Management Network Patient Data Management System revealed significant underlying cardiovascular disease.

## History and Plan

- A 61-year-old woman presented to the ER with complaints of acute chest pain x2 hours radiating to the left side of chest that improved with nitroglycerin.
- Significant history of rheumatoid arthritis, hypertension, hyperlipidemia, and osteoporosis.
- No known surgical history.
- Cardiac enzymes and ECG were both negative for STEMI.
- ECG indicated RBBB.
- Cardiac echo:
  - Mild left ventricular hypertrophy
  - Mild mitral annular calcification
  - LVEF = 30%
- SPECT imaging showed lack of activity throughout the inferior wall extending into the inferiolateral region. Cardiomegaly with large areas of infarction also noted.
- The patient was discharged with the LifeVest WCD for protection from SCD.

## ZOLL Patient Management Network Configuration

The nurse configured the ZOLL Patient Management Network to issue an orange (mid-level) alert for detected but not treated events, asystole events, and at least two patient-initiated recordings per day. The LifeVest WCD detection algorithm is programmed to declare asystole when the heart rate falls below 10 beats per minute (bpm) for 16 seconds and automatically records the event, including 120 seconds of onset.

Alerts For:	Red Circle	Orange Triangle	Yellow Square	None
Treatments <input checked="" type="radio"/> All Treatments <input type="radio"/> Screened Only	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Detected but not treated	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asystole	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patient-initiated recordings, at least 2 per day	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wear time less than 18 hours per day for the past 3 days	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
No data sent within the past 10 days	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Rx due to expire in 20 and 10 days	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
New Patient Added	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Patient transitioned to inactive status	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Figure 2. Screenshot of the ZOLL Patient Management Network user's customized Alert settings.

## Results

On day 29 post discharge, LifeVest detected an asystole event and captured an ECG recording. Upon ECG review on the ZOLL Patient Management Network, the event was determined to be bradycardia. The patient was contacted at home and instructed to seek immediate medical care in the ER. Cardiac catheterization and angiography showed apical and inferior hypokinesia of left ventricle with triple vessel disease involving left anterior descending (LAD) with its first diagonal branch (D1), left circumflex (LCx) with its first diagonal branch, and right coronary artery (RCA). Post-CABG, the patient's LVEF remained  $\leq 35\%$  and the patient was discharged home with instructions to continue LifeVest use.

## Identification of Bradycardia Through Remote Patient Monitoring

The patient was diagnosed with ischemic cardiomyopathy following a NSTEMI with a LVEF = 30% and prescribed the LifeVest WCD for primary prevention of SCD. The nurse in this practice reviews the ZOLL Patient Management Network dashboard weekly, monitoring the practice's active LifeVest patients. The discovery of several bradycardia events in this case revealed a significant underlying ischemic disease requiring CABG, potentially avoiding significant future myocardial injury.

**For additional information on the ZOLL Patient Management Network, including instructions on how to enroll, contact your ZOLL LifeVest representative or visit [www.zoll.com](http://www.zoll.com).**

ZOLL • Pittsburgh, PA 15238  
p 800.543.3267 • f 866.567.7615 • [www.zoll.com](http://www.zoll.com)

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