

# Implementation of AI-enabled notifications on patients at risk for sudden cardiac arrest

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## INTRODUCTION

Underutilization of guideline-recommended implantable cardioverter defibrillators (GR-ICD) to reduce sudden cardiac arrest (SCA) has been observed.

We deployed AI-enabled electronic health record (EHR) notifications to doctors of patients at risk of SCA that had not yet been referred for a follow up echocardiogram (echo), with the hypothesis that this would result in patients newly evaluated for GR-ICD.

## METHODS

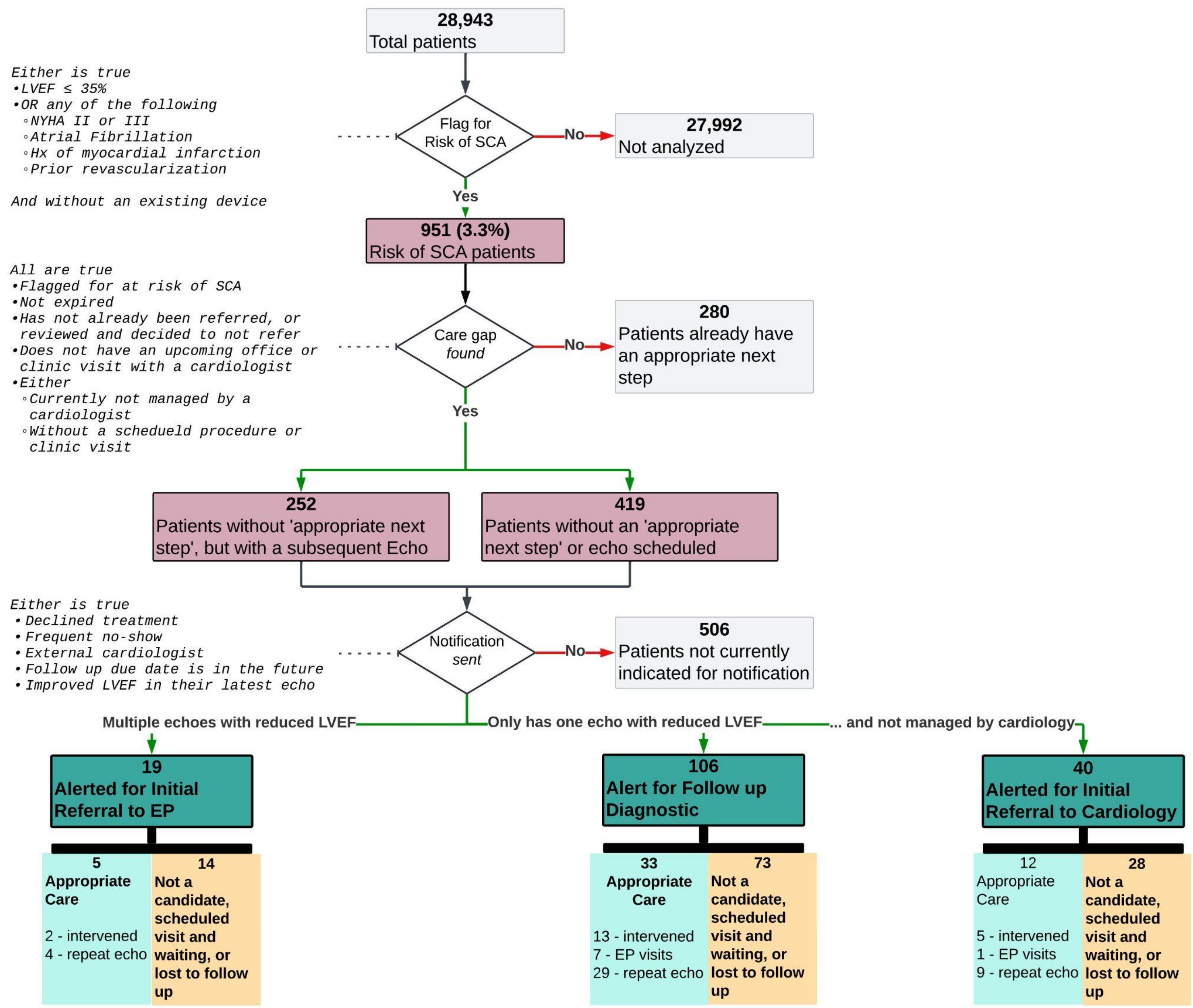
- Patients with an echo were screened for being at risk of SCA (Fig. 1)
- An AI-enabled algorithm (Fig. 1) filtered patients deemed unmanaged and needing a referral.
- After a minimum wait period, if a follow up or cardiac intervention had not occurred or been scheduled, a notification was sent to the provider with the intention to spur a follow up or referral.
- During this pilot, Dr. Gravelin manually reviewed a random sample of patients that were *not* flagged for risk of SCA (out of the 27,992 not analyzed), *notified* (out of 106), and those *not* notified (out of the 506).

## SUMMARY

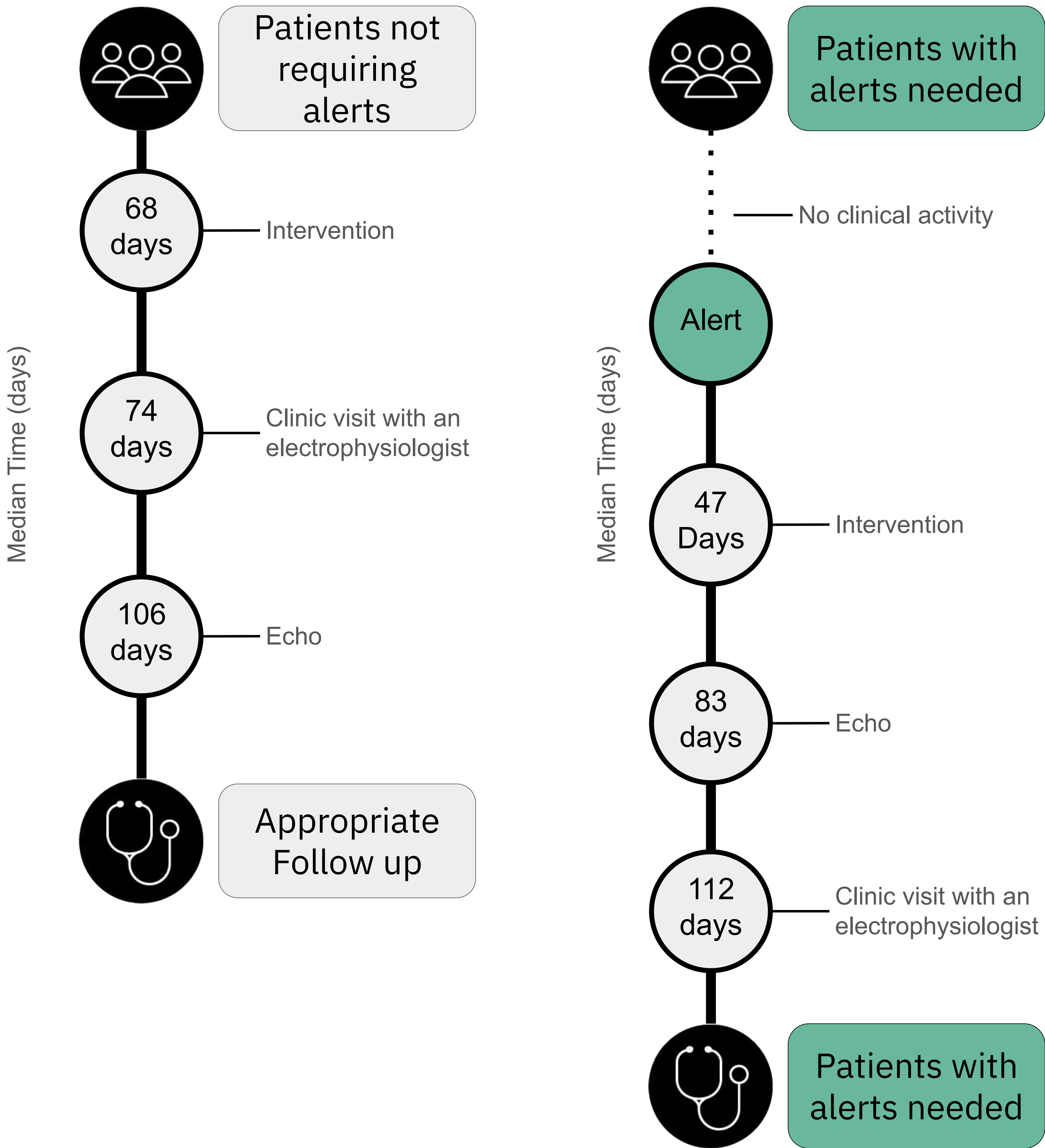
- After an AI-enabled EHR notification, 30% of patients at risk of SCA received appropriate care.
- The precision of the automated alert was 93%.
- 11 notifications were deemed inappropriate, highlighting the complexity of this problem, and the opportunity to improve if more clinical context is considered.

## RESULTS

**Figure 1. Study population: 671 without an appropriate next step → 165 notifications**



**Figure 2. Hypothesized effect of notifications on time-to-events**



## ACKNOWLEDGMENTS

This work was supported in part by a gift from the Ohio University Heritage College of Medicine Research and Grants