

# American Heart Screening Management System

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## Requirements Document

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## 1. Overview

### 1.1. Scope

This project will encompass the management of heart screening events across the United States. The current system is localized to events in Florida.

### 1.2. Problem

Sudden cardiac arrest (SCA) is the leading cause of death in student athletes and death in schools. The standard method for protection of young adults is to perform a physical examination and review of their history, which misses over 96% of those at risk for SCA. However, by adding echocardiograms (ECGs) to the physical exam, 90-95% of potentially deadly cardiac abnormalities will be caught. The use of ECGs in US high schools is not very common, due to critics on the feasibility and costs of these screenings. The software is currently too localized and lacks the features required to expand the availability of affordable heart screenings in high schools across the US.

### 1.3. Goals

- 1.3.1. To minimize the preventable sudden cardiac arrest deaths in student athletes by increasing the use of ECG screenings in high schools.
- 1.3.2. To provide a scalable event-management system for use across the United States.
- 1.3.3. To allow directors to create and manage heart screening events.
- 1.3.4. To allow participants and volunteers to register and pay for upcoming events ahead of time or current events on-site.
- 1.3.5. To allow participants to view or retrieve their ECG results securely.
- 1.3.6. To allow participants to receive text notifications and emails of low-risk results.
- 1.3.7. To allow financial person(s) to search for payments by various filters and export to a spreadsheet.

## 2. Definitions and Acronyms

- 2.1. **SCA:** Sudden cardiac arrest
- 2.2. **ECG:** Electrocardiogram
- 2.3. **NDA:** Non-disclosure agreement

### 3. Stakeholders

#### 3.1. Who We Play For

The Who We Play For (WWPF) organization is a stakeholder because this project is intended for their use to manage events nationwide and provide delivery of ECG results to participants. They will want to ensure that the information and money of its participants is protected and managed securely.

#### 3.2. Event Directors

Event directors are stakeholders because they will be using this software to create and configure events, manage participants and volunteers, and receive payments.

#### 3.3. Event Participants

Event participants are stakeholders because they will use the software to register for events created by directors and to access/receive their heart screening results. This software will enable participants to sign up for local events with ease.

#### 3.4. Volunteers

Event volunteers are stakeholders because they require an efficient means of signing up for events. As it stands, there is no formal way for volunteers to register for events online.

#### 3.5. Accountants

Accountants for WWPF are stakeholders because they will use the software to search and filter payments by dates, events, or participants. They will also have the ability to export payments to a spreadsheet.

### 3.6. Sponsors

Sponsors for WWPF are stakeholders because they desire promotion or marketing in exchange for funding. Thus, by scaling the event management capabilities of this system from Florida to all of the United States, sponsors will naturally achieve a higher market value through exposure to more people.

### 3.7. Cardiologists

Cardiologists are stakeholders because the medical advisory team at WWPF is composed of world-renowned cardiologists who recognize the benefits of adding ECGs to the physical exams of student athletes. This software aims to enable their recommendations and expand the usage of ECGs to highschools throughout the country.

## 4. Constraints

### 4.1. Legal Constraints

Being that this project requires us to handle the medical information of event participants, we will each need to sign an NDA with Who We Play For, ensuring that we do not share any of this sensitive information with outside parties and outlining the consequences of such an action.

## 5. Functional Requirements

### 5.1. Requirement 1

<b>Description</b>	The system shall provide a private event link for private events
<b>Purpose</b>	To allow only participants with a link to sign up for an event
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• A link is created when a director creates an event of type private</li><li>• The link is displayed to the director after creation</li></ul>

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	<ul style="list-style-type: none"><li>• The link can be viewed with a button click from the menu</li><li>• The event is viewable when link is clicked</li></ul>
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## 5.2. Requirement 2

<b>Description</b>	The system shall generate QR codes for walk-in registrations
<b>Purpose</b>	To allow for efficient on-site registration
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a director, I can click a button to generate a unique QR code for my event</li><li>• As a participant, I can scan the generated QR code from my phone to redirect me to the event's registration page</li></ul>

## 5.3. Requirement 3

<b>Description</b>	The system shall display available time slots for private events
<b>Purpose</b>	To allow participants to plan their arrival for a particular private event
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• When the page loads, the private event is pre-selected, automatically showing the available slots</li></ul>

## 5.4. Requirement 4

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<b>Description</b>	The system shall send reminder notifications to registered participants
<b>Purpose</b>	To ensure that participants actually show up to registered events
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• At 5pm the day before the event, an email reminder with the event information will be sent to all registered participants</li></ul>

### 5.5. Requirement 5

<b>Description</b>	The system shall close online event registration the day before
<b>Purpose</b>	To set a cutoff date for online registrations
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a director, I can configure the closing time of an event to a specific time of day</li><li>• As a participant, I can register for an event until the set closing time</li><li>• The default closing time of an event is set to 5pm the day before</li></ul>

### 5.6. Requirement 6

<b>Description</b>	The system shall provide various methods of searching for payments
<b>Purpose</b>	To allow efficient payment management by accountants
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a financial person, I should be able to search by:<ul style="list-style-type: none"><li>○ Date range</li><li>○ Date</li><li>○ Event</li><li>○ Participant</li></ul></li></ul>



### 5.7. Requirement 7

<b>Description</b>	The system shall vary verbiage depending on the participant's age
<b>Purpose</b>	To make the documents more clear to the participant
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• The forms displayed to the user during registration should vary depending on the participant's age</li><li>• If the participant is 18 or older, the wording should be changed from "Your child" to "You"</li><li>• If the participant is younger than 18, the system will assume the parent is the one filling out the forms and the wording should remain as "Your child"</li></ul>

### 5.8. Requirement 8

<b>Description</b>	The system shall provide the ability to request the deletion of an event
<b>Purpose</b>	To allow potential removal of events that will no longer be hosted by a director
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a director, I should have the option to request deletion of an event that I have created</li><li>• As an admin, I need to be notified of the request to delete an event for review and handling of payments</li></ul>

### 5.9. Requirement 9

<b>Description</b>	The system shall require confirmation for requesting deletion of an event
<b>Purpose</b>	To prevent accidental deletion of an event

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<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a director, I should be asked for confirmation when requesting to delete an event</li></ul>
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#### 5.10. Requirement 10

<b>Description</b>	The system shall allow participants to cancel a previous registration for an event
<b>Purpose</b>	To give participants the option to cancel registration for an event that he or she will no longer be attending
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a participant, I should be able to cancel registration after signing up for an event</li><li>• As a participant, I should have the option for one of the following after cancellation:<ul style="list-style-type: none"><li>○ A payment refund</li><li>○ Credit for another in-progress event</li></ul></li></ul>

#### 5.11. Requirement 11

<b>Description</b>	The system shall allow exportation of payments to a spreadsheet
<b>Purpose</b>	To allow for easy analysis of payments in a tabular format
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• As a financial person, I should be able to export participant payments to a local spreadsheet</li></ul>

## 6. Security Requirements

### 6.1. Requirement 12

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<b>Description</b>	The system shall verify a user before accessing ECG information
<b>Purpose</b>	To protect sensitive screening results of participants
<b>Acceptance Criteria</b>	<ul style="list-style-type: none"><li>• Upon verification of the user, ECG results will be displayed</li><li>• The user shall be denied ECG result access until they have been verified by the system</li></ul>