

iArrest User Guide



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for iArrest v1.2



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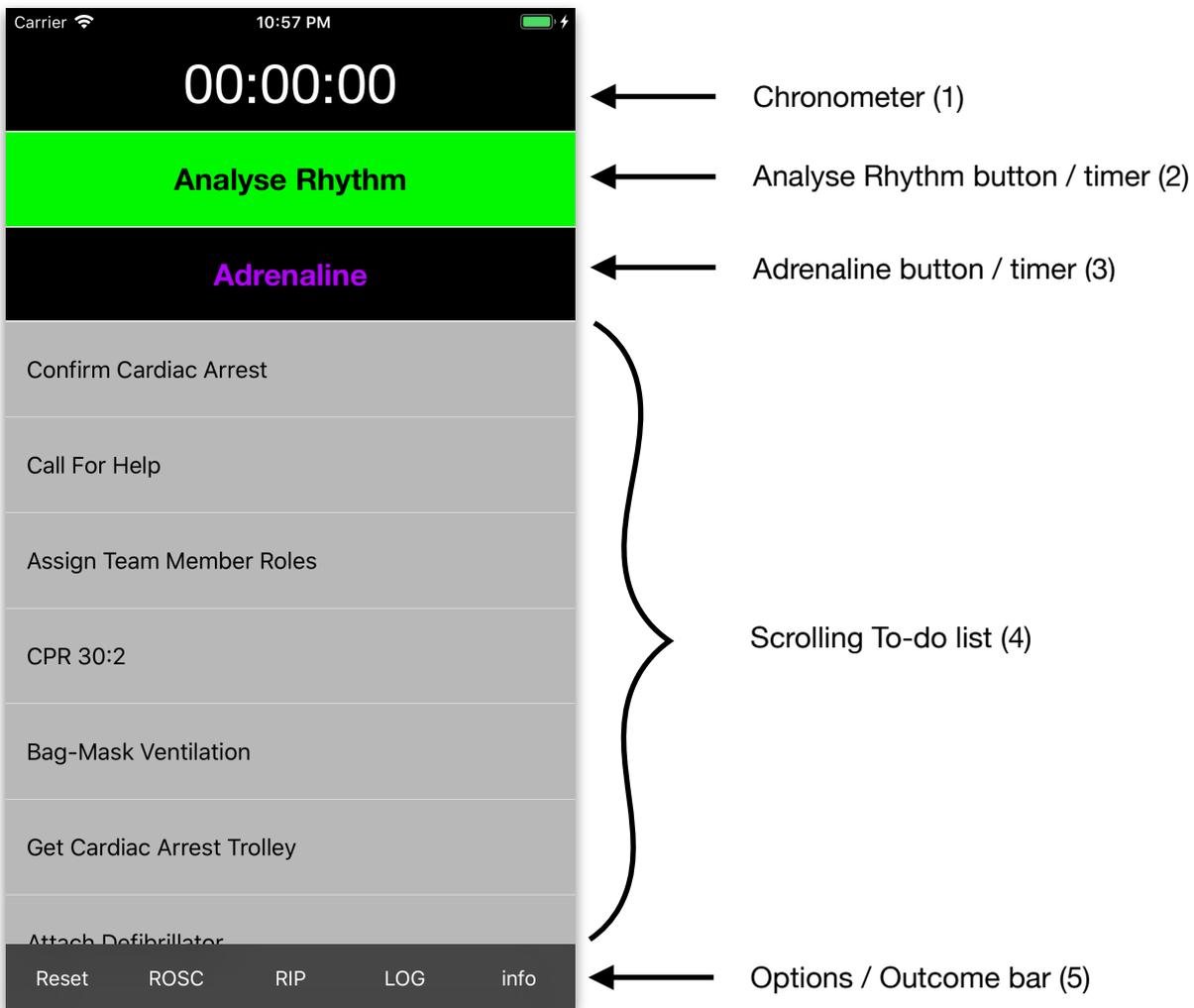
1 What is iArrest?

iArrest is a smartphone app developed for ALS trained healthcare professionals. It is intended to be used in cardiac arrest scenarios in order to streamline communication, provide prompts, assist in timekeeping and assemble a detailed summary of events for documentation. iArrest is available for both Apple IOS and Android devices.

2 How to use iArrest?

2.1 Layout

Upon launching iArrest the user will be greeted by the default layout of the app:



Picture 1

2.2 Chronometer

The uppermost item in iArrest's layout is the Chronometer (1). This displays the time elapsed since iArrest has been launched. The Chronometer will start automatically when iArrest is launched or

reset, and is not intended to be stopped or restarted manually. The time at which iArrest is launched/reset is logged in the Log (see 2.8 The Outcome screen) as the start time of the present arrest.

iArrest should be started as soon as the user is informed of an ongoing arrest, either witnessed or via arrest call. This way iArrest will be able to log the time as close as possible to the actual beginning of an ongoing arrest.

It is important to remember that, if a team member starts iArrest after a significant delay, the start time and the chronometer will not reflect the actual duration/start time of the present arrest, and the delay will have to be accounted for in the Log manually afterwards.

2.3 Analyse Rhythm button

Beneath the Chronometer is a fixed button which is always visible/accessible in iArrest's layout. "Analyse Rhythm" (2) should be pressed as soon as the defibrillator is attached to the patient and the resuscitation team is ready for the first rhythm analysis and pulse check. The "Analyse Rhythm" button will inform the user when a rhythm analysis and pulse check is due. Pressing this button will trigger the Rhythm Select screen.

(See Rhythm Select screen - section 2.7)

2.4 Adrenaline button

Located underneath the "Analyse Rhythm" (2) button is the Adrenaline (3) button. This button informs the user whether Adrenaline is indicated, if it has been given and how much time is left until the next dose is due.

Once adrenaline has been administered, press the Adrenaline button to start the Adrenaline timer. This timer will alarm after 4:00 minutes.

When the timer has finished, the Adrenaline button will change its colours and text in order to indicate that another dose is due.

If the adrenaline button is pressed in error, before the timer has run out, it will simply reset and not indicate any further doses of adrenaline until it is restarted. This is to avoid too frequent administrations of adrenaline.

Every time the adrenaline timer is restarted, a further adrenaline administration is documented in the Log.

2.5 To-do list

The To-do list (4) should be used as a checklist. It contains many tasks which, when pressed, will automatically disappear. This function has been deliberately chosen, so that finished tasks disappear completely, moving the list upwards and decreasing the need to scroll through the many necessary steps and interventions.

The To-do list is divided into three sections:

- 1) Basic initial tasks
- 2) List of Hs and Ts
- 3) Additional Drugs and Procedures

Basic initial tasks

This section covers basic life support instructions which users will be familiar with, but which can be very helpful for team leaders in stressful situations.

List of Hs and Ts

This section contains all the Hs and Ts which should be excluded as cause of arrest during resuscitation. Once all Hs and Ts have been addressed this section should be empty.

Additional Drugs and Procedures

This section contains common drugs and procedures performed during resuscitation. Procedures or drugs which are commonly administered once will disappear when pressed. Drugs which can be given multiple times will remain visible when pressed, and will indicate how often they have been administered.

All drugs and procedures performed in this section will appear in the Log with the corresponding time.

2.6 Options / Outcome Bar

The options / outcome bar (5) provides the user with several options to end an arrest scenario or to reset iArrest.

Reset

This function will reset iArrest into its initial state. This button should be pressed if a new arrest needs to be documented, while iArrest is still displaying information about a previous arrest. Pressing reset will reset the Chronometer (1), the “Analyse Rhythm” (2) and “Adrenaline” (3) buttons, all the timers, the Log and the Scrolling To-do list (4).

ROSC (Return of Spontaneous Circulation)

Pressing “ROSC” will end the current arrest and display the Outcome screen. ROSC and the corresponding time is documented in the Log and a short summary of the arrest is added.

Pressing “ROSC” will also reset all timers except for the Chronometer (1). (see [2.8 The Outcome screen](#) for more details)

RIP (Rest in Peace)

Pressing “RIP” will end the current arrest and display the Outcome screen. RIP and the corresponding time is documented in the Log and a short summary of the arrest is added.

Pressing “RIP” will also reset all timers except for the Chronometer (1). (see [2.8 The Outcome screen](#) for more details)

LOG

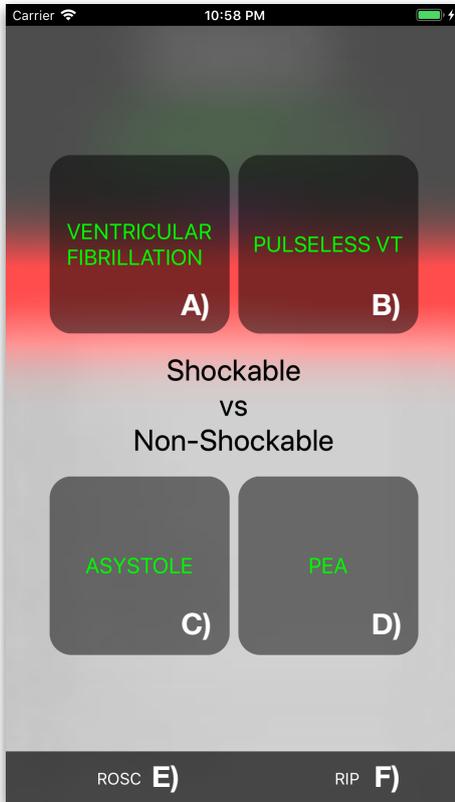
Pressing “LOG” will bring up the Outcome screen **without** ending the current arrest. This button should be used in order to glance over the Log in order to remind the user or new team members of events of the current arrest. Nothing will be added to the Log when “LOG” is pressed and clicking “Continue with this Arrest” in the Outcome screen will bring the user straight back to the main layout.

info

Pressing “info” will present a screen that displays a disclaimer and provides contact information for the iArrest team for questions, improvements or recommendations.

2.7 Rhythm Select screen

Pressing “Analyse Rhythm” (2) will trigger a screen which displays the following six options: (Picture 2)



Picture 2

Shockable Rhythms:

- A)** Ventricular Fibrillation
- B)** Pulseless VT

Non-Shockable Rhythms:

- C)** Asystole
- D)** PEA (Pulseless Electrical Activity)

- E)** ROSC (Return Of Spontaneous Circulation)
- F)** RIP (Rest In Peace)

Select from these options depending on the patient’s condition.

(Note: iArrest has no in-built rhythm analysis functionality, it will simply register the button presses by the user.)

Pressing **A** or **B** will:

- dismiss this screen
- register the pressed rhythm in the Log
- advise the user that shock administration is indicated and
- start the Analyse Rhythm (2) timer.

This timer is set to two minutes and will continuously inform the user about the time remaining until the next rhythm

analysis. When the timer runs out it will remind the user to perform another rhythm and pulse check audibly and visually.

In addition to indicating that a shock is advised, a yellow “Shock delivered” will appear at the top of the To-do list (4) if **A** or **B** is pressed.

This item should be pressed shortly after or during defibrillation of the patient for the most accurate recording of events.

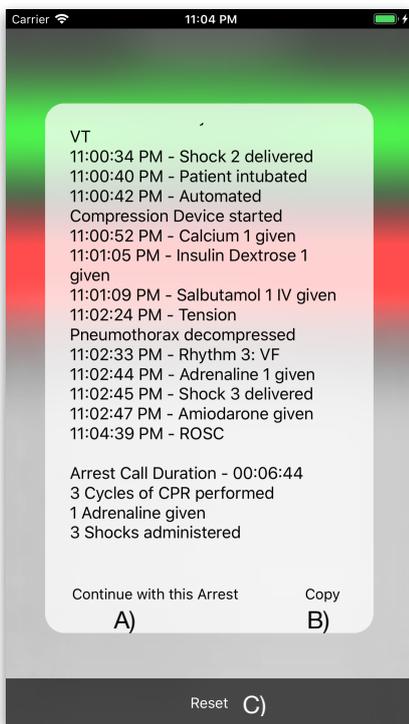
(Note: iArrest will not record “Shock delivered” unless this item on the To-do list (4) is pressed. There is no functionality in iArrest to synchronise smartphones with defibrillators.)

Pressing **C** or **D** will:

- register the pressed rhythm in the Log
- start the Analyse Rhythm (2) timer and
- encourage administration of Adrenaline by changing the “Adrenaline” button (3) in two ways:
 1. The colours will become more prominent (white on purple instead of purple on black)
 2. The button will say “Give Adrenaline”, in order to remind the user about giving adrenaline early in non-shockable rhythms. (Find more information about the Adrenaline button (3) in section 2.4 Adrenaline button)

E or **F** are outcome buttons in the Options bar (5). (see [2.6 Options / Outcome Bar](#) for more details)

2.8 The Outcome screen



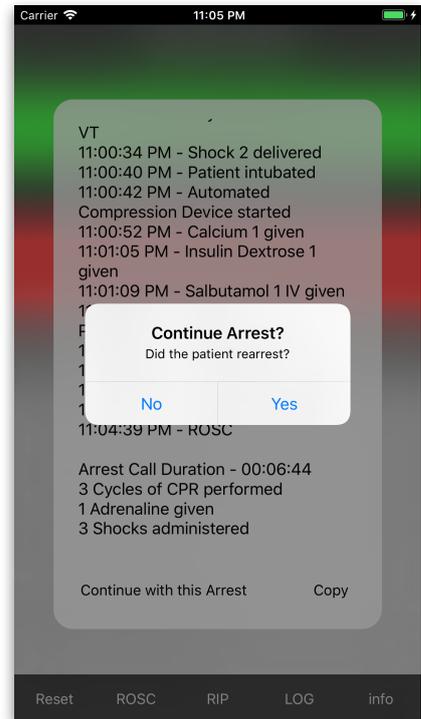
Picture 3

The outcome screen is displayed at the end of an arrest. It Displays the Log of all events with a short arrest summary and three buttons, A), B) and C). (Picture 3)

Continue with this Arrest A)

This button will dismiss the Outcome screen and return to the main app layout. This button should be pressed if the patient rearrests after an initially successful resuscitation. A confirmation window will pop up, in which the user needs to confirm whether the patient rearrested or not. (Picture 4)

Press “Yes” to confirm rearrest and document this in the Log.



Picture 4

Press “No” if you just want to return to the main layout in order to document further interventions or drugs to administer without the patient having rearrested.

Copy B)

This button will copy the Log to the devices clipboard, so that it can be easily pasted in a secure email or messaging app by the user for documentation. A short popup message confirms the copy process.

Reset C)

This function will reset iArrest into its initial state. This button should be pressed if a new arrest needs to be documented, while iArrest is still displaying information about a previous arrest. Pressing reset will reset the Chronometer (1), the “Analyse Rhythm” (2) and “Adrenaline” (3) buttons, all the timers, the Log and the Scrolling To-do list (4).

3 Why iArrest?

Arrest scenarios can be very stressful for all team members involved. Clear communication and structure are imperative to running a well led and successful resuscitation. The team leader often needs to guide and instruct all team members, assign roles, keep note of interventions and drugs administered, keep time of upcoming interventions and remember all the Hs and Ts. Clinicians are regularly requested to manage all these tasks with insufficient team members, due to short staffing. The first team member role neglected in these situations, is that of the scribe. After an arrest the resuscitation team will often fail to remember timings of interventions and drugs administered, unless a dedicated scribe was available and assigned at the beginning of the arrest.

Clinicians often don't feel confident enough to lead arrests due to lack of experience or due to prolonged time away from acute medicine.

Many team leaders will use the stopwatch app of smartphones / tablets, in order to improve their timekeeping. Most devices however will lock their screen after a brief period of time and require valuable time to be unlocked with a code or by biometric means only available to the owner of the device. All this can interfere with continuous accurate time and record keeping.

iArrest addresses all of these issues in one clever app:

1. By presenting the user with a simple continuous scrolling To-do list iArrest frees up important cognitive bandwidth for the team leader to keep an overview of events and focus on effective communication. This leads to an enhanced level of team leader confidence and team focus.
2. iArrest will ensure continuous timekeeping by always displaying the time, as well as the duration of the current arrest. iArrest has been programmed specifically to prevent a device from turning off. **A device running iArrest will not turn off the screen and therefore will not require screen unlocking while iArrest is running, ensuring interruption free documentation.** Due to this feature a device running iArrest can be passed to changing team leaders/members, without worrying about the device locking.
3. The timers built into iArrest assist in ensuring rhythm analysis and adrenaline administration are performed accurately. This helps significantly with communication, readying the team for these interventions and minimising interruptions in CPR.
4. iArrest produces detailed documentation of events and interventions in the Log. This Log can be accessed swiftly throughout a cardiac arrest in order to summarise the information or inform new team members about the current progress. At the end of an arrest this Log can conveniently be used to document the events and interventions. An iArrest-generated documentation can comfortably exceed the accuracy and detail of a manually gathered arrest report.