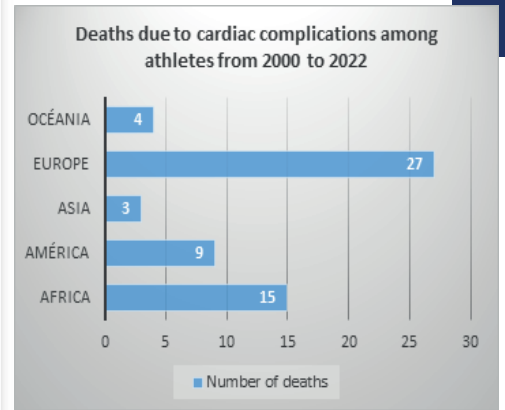


THE PROBLEM

1

Cardiovascular disease is the leading cause of death worldwide. They kill about 17.9 million people each year, equivalent to 31% of the global mortality. In the field of professional sports, there is a significant increase of these diseases, which appear as underlying cardiac irregularities that can remain hidden without a constant monitoring.

They can cause cardiovascular accidents, leading to shortness of breath, loss of performance on the field, fainting and sometimes even death of the athlete. This is why currently, it becomes crucial for every professional club and each national team to have effective tools for permanent and real-time cardiac monitoring of all its athletes. In order to address this problematic, we have implemented a solution called the Cardio-Pad.



Source : https://en.wikipedia.org/wiki/List_of_association_football_players_who_died_during_their_careers

THE SOLUTION

2

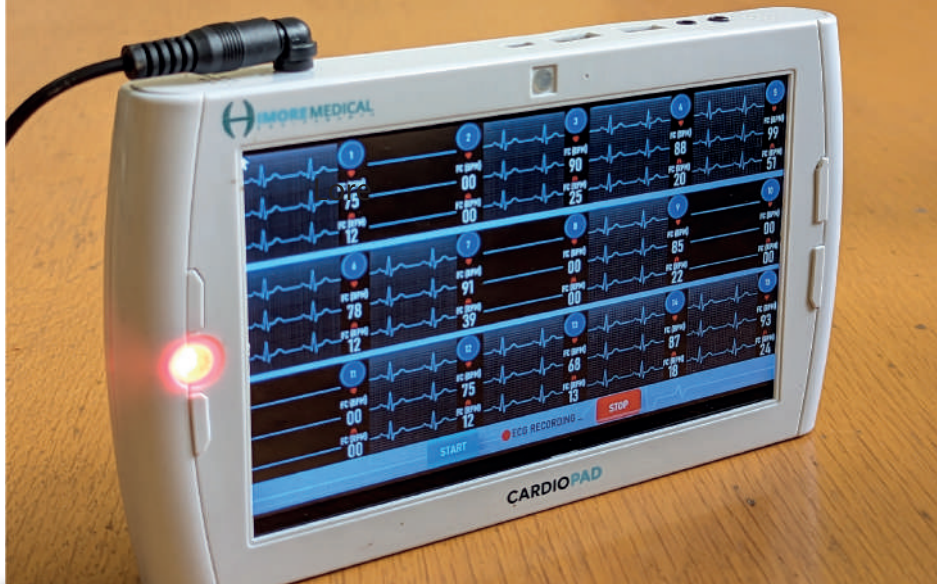
The Cardio-Pad is a medical device that allows to perform electrocardiogram examinations and remote cardiac monitoring in real time. In addition to performing 12-channels electrocardiograms at rest, it also collects the signals and cardiac data of an athlete in motion for several hours thanks to a heart vest equipped with a real time data acquisition and wireless transmission technology.

It is a transportable kit whose main element is a tablet that collects, records and processes heart signals.



The smart ECG vest is a half-size tracksuit that the athlete puts on. It is sturdy but thin enough to be worn under the jersey, both during matches and during training.

It is composed of a very light electronic device including a processor, a cardiac signal amplifier and a set of electrodes to take up to 7 channels of the athlete's cardiac signal.



Thanks to an integrated transmitter, the vest transmits data in real time to the Cardio-Pad through radio frequencies. It is equipped with a battery, a memory card system allowing autonomous operation and athlete's biomedical data storage for more than 100 hours.

It is optionally equipped with 5G, which allows data transmission to the cloud. This vest is also equipped with GPS, and a gyroscope to detect the position, movements and speed of athletes in real time.

These features allow to study cardiac events that occur, according to the intensity of exercises.

HOW IT WORKS ?

3



A



A - Before the start of exercises, the medical staff places 6 electrodes on the skin of each athlete, who then puts on a vest that is connected to the electrodes.

B - During training, the vests capture cardiac data and transmit it in real time to the cardio-pads through a wireless connection established thanks to a Radio Frequency antenna that covers the entire stadium.

C - Cardio pads process data in real time, calculate heart rates, as well as other parameters necessary for cardiac diagnosis.

D - If needed, the cardio-pads can transfer athletes' data to a remote control center or hospital thanks to a 3G or 5G connection.



C

Long range Wireless transmissions 1.2 Km



B

D



CLOUD



GSM/3G/5G Network



Server



Control computer



x 1



x 2



x 30



The Cardio-Pad *Sport*™ kit is a device composed of the following elements :

- 2 identical Cardio-Pad tablets, each capable of pairing with 15 vests;
- 30 cardiac vests each equipped with 6 electrodes and an electronic microprocessor system allowing the sampling, saving and transmission of cardiac signals to the cardio-pad;
- A multidirectional radio frequency system emitting over a radius of 1.2 km allowing the establishment of a wireless data transmission network between the cardio-pads and the vests;

All these elements are stored in an ABS plastic suitcase, compartmentalized and robust , allowing the equipment to be transported safely and easily.

5

TYPES OF KIT

There are three types of kits.

- Standard
- Profession
- Premium

Feature	Standard	Professional	Premium
Number of Antennas	01	01	01
Number of tablets	02	02	02
Number of Vests	30	30	30
GPS accuracy	None	15m	5m
Wireless network gate	200 m	600 m	1.2km
Gyroscope	No	Yes	Yes
Number of ECG tracks	3 tracks	7 tracks	12 tracks
Fingerprint reader	No	Yes	Yes
Battery life	30 hours	60 hours	100 hours
Material of the suitcase (PLA)	ABS	AB5	AB5
shortness of breath, DB	NO	NO	YES

WHO ARE WE ?

6

Himore Medical S.A. is a technology company specialized in the development of cardiology equipment such as electrocardiographs, ECG scopes, blood pressure monitors, and ventilators.

We are mainly made up of a research and development unit with several engineers, researchers and physicians who work daily on the development of new equipment, the design of next generation of cardiac signal sensors and transmitters, as well as the development of artificial intelligence systems for the automatic interpretation of cardiac data.

The R&D team is complemented by a team of managers and salespeople who carry out administrative, strategic and sales. This has enabled us to equip more than 250 hospitals with the Cardio-Pad to date.