



Cumbria Health on Call

Cumbria Health On Call: An Introduction

Richie McGregor: Head of Digital and Performance



WHO ARE CHOC?

15 different staff roles

NHS 70 parliamentary award

CQC rated outstanding

Social Enterprise

Second largest county in England

Population 500,000

42,730 shifts per year

2022: - 376 different clinicians
- 245 different support staff



-  3 Acute Hospitals
-  Hilltop Heights Headquarters
-  3 Community Hospitals
-  12 Vehicles across all localities
-  CHoC Practice Sites
-  Extended Access Sites

WHAT IS CHOC DIGITAL?

Infrastructure

Transformation

Interoperability

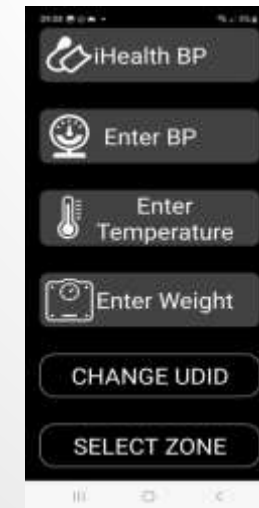
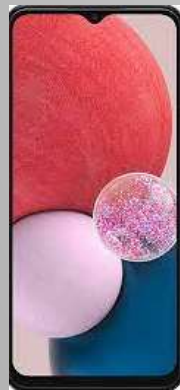
Developing
Partnerships

Supporting Users
and Systems

System
Designers

Change
Management

Project Managers



CONTINUOUS MONITORING

24/7 continuous monitoring of:

- temperature,
- respiratory rate,
- heart rate,
- single lead ECG,
- activity (steps)
- body posture,
- falls detection



Respirations



Step Count



SpO2



Temperature



Blood Pressure



Heart Rate

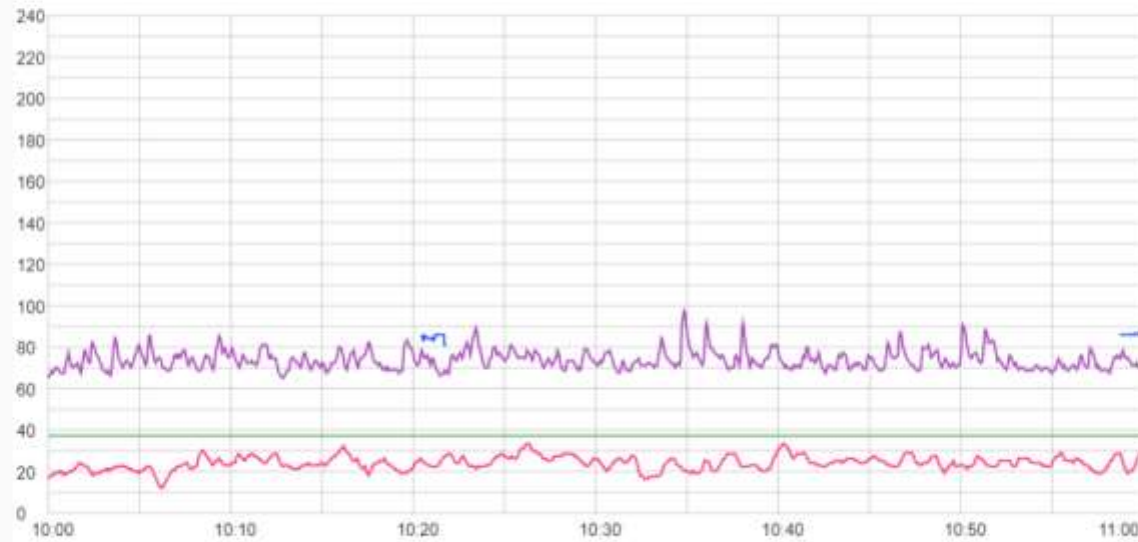


Body Position

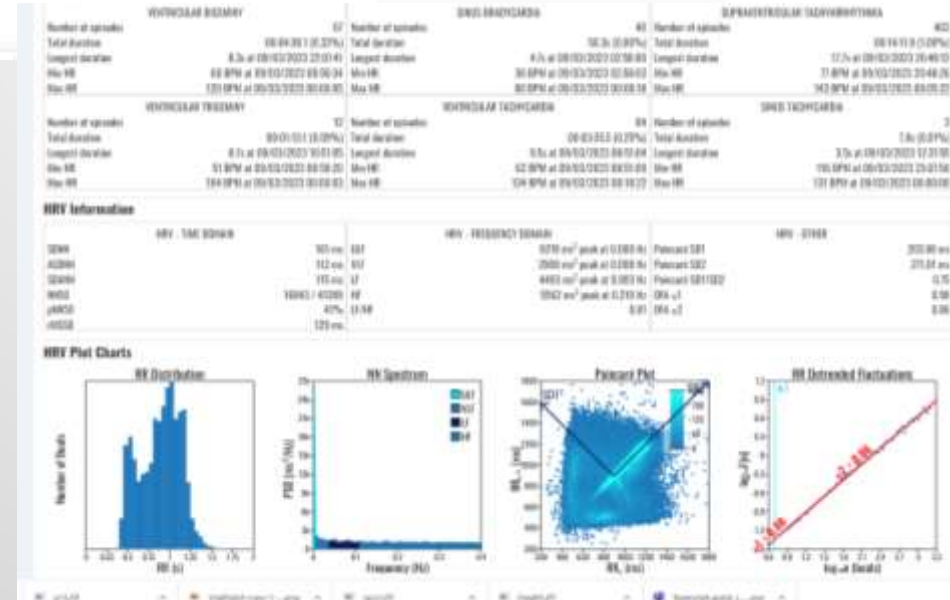




March 10, 2023



Temperature
Respiratory rate
Heart rate
SpO2
Can move back in time



Summary Information

GENERAL INFORMATION		HEART RATE		PAUSES AND ABERRANT BEATS	
Analyzed Beats	66933	Min HR-4	58 BPM at 18/02/2023 04:17:45	SA Total	0
Total Recording Duration	13:01:16	Max HR-4	146 BPM at 18/02/2023 15:02:00	Maximum SA	/
Normal Sinus Rhythm Duration	(96.95%) 12:37:24	Average HR-24 Hours	85 BPM	Micro SA Total	0
ECG Monitoring Start	18/02/2023 00:06:31	Min HR-Hourly	76 BPM at 18/02/2023 05:00:00	Total Aberrant Beats/Runs	0
ECG Monitoring End	18/02/2023 23:37:24	Max HR-Hourly	111 BPM at 18/02/2023 14:00:00		
TYPICAL INTERVALS		ST SEGMENT		VENTRICULAR ECTOPIES	
Average QRS	28 ms	Overall ST Type	Normal	VE Total	39
Max QRS	116 ms at 18/02/2023 09:56:48	Duration of ST Elevation	00:28:14	VE-Pair Total	6
Average QT	121 ms	Max ST Elevation	0.09 mV at 18/02/2023 11:42:53	Short V-Runs (3≤n<6)	0
Max QT	456 ms at 18/02/2023 07:22:46	Longest ST Elevation	27.4s	Long V-Run Total (n≥6)	0
Average QTc	144 ms	Max HR ST Elevation	160 BPM	Longest V-Run	/
Max QTc	537 ms at 18/02/2023 07:25:39	Duration of ST Depression	01:30:35	Min HR Long V-Run	/
		Max ST Depression	-0.01 mV at 18/02/2023 03:54:30	Max HR Long V-Run	/
		Longest ST Depression	27.5s	VE's per 1000	1
		Max HR ST Depression	234 BPM	VE's per Hour	3
SUPRAVENTRICULAR ECTOPIES		SINUS TACHYCARDIA		ATRIAL FIBRILLATION	
SVE Total	26	Number of episodes	134	Number of episodes	4
SVE Pair Total	2	Total duration	00:21:06.2 (2.70%)	Total duration	00:01:25.6 (0.18%)
Short SV-Runs (3≤n<6)	0	Longest duration	00:01:30.6 at 18/02/2023 10:12:31	Longest duration	29.4s at 18/02/2023 12:20:30
Long SV-Run Total (n≥6)	0	Min HR	93 BPM at 18/02/2023 07:38:23	Min HR	66 BPM at 18/02/2023 07:44:23
Longest SV-Run	/	Max HR	144 BPM at 01/01/0001 00:00:00	Max HR	105 BPM at 01/01/0001 00:00:00
Min HR Long SV-Run	/				
Max HR Long SV-Run	/				
SVE's per 1000	0				
SVE's per Hour	2				

HRV Information

HRV - TIME DOMAIN		HRV - FREQUENCY DOMAIN		HRV - OTHER	
SDNN	99 ms	ULF	8295 ms ² peak at 0.000 Hz	Poincaré SD1	25.47 ms
ASDNN	51 ms	VLF	3458 ms ² peak at 0.004 Hz	Poincaré SD2	138.56 ms

- Identification of 21 different arrhythmias
- Graphical analysis of ECG
- AI generated opinion



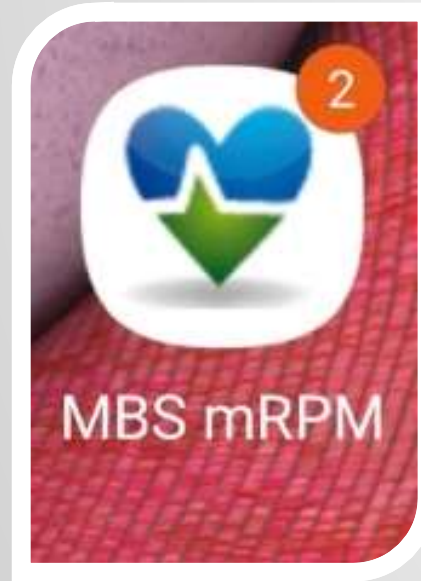
SPOT MONITORING



Spot monitoring of:

- Blood Pressure
- SPo2
- INR levels
- Temperature
- Weight
- Patient alerts

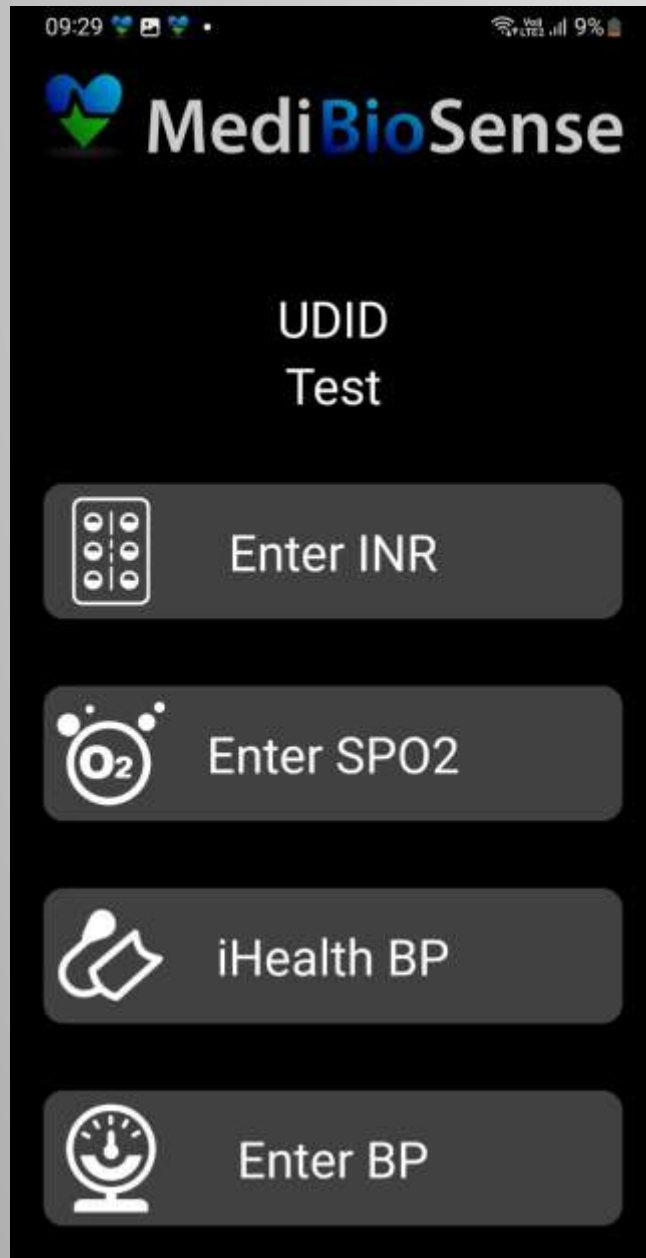
OXIMETRY@HOME



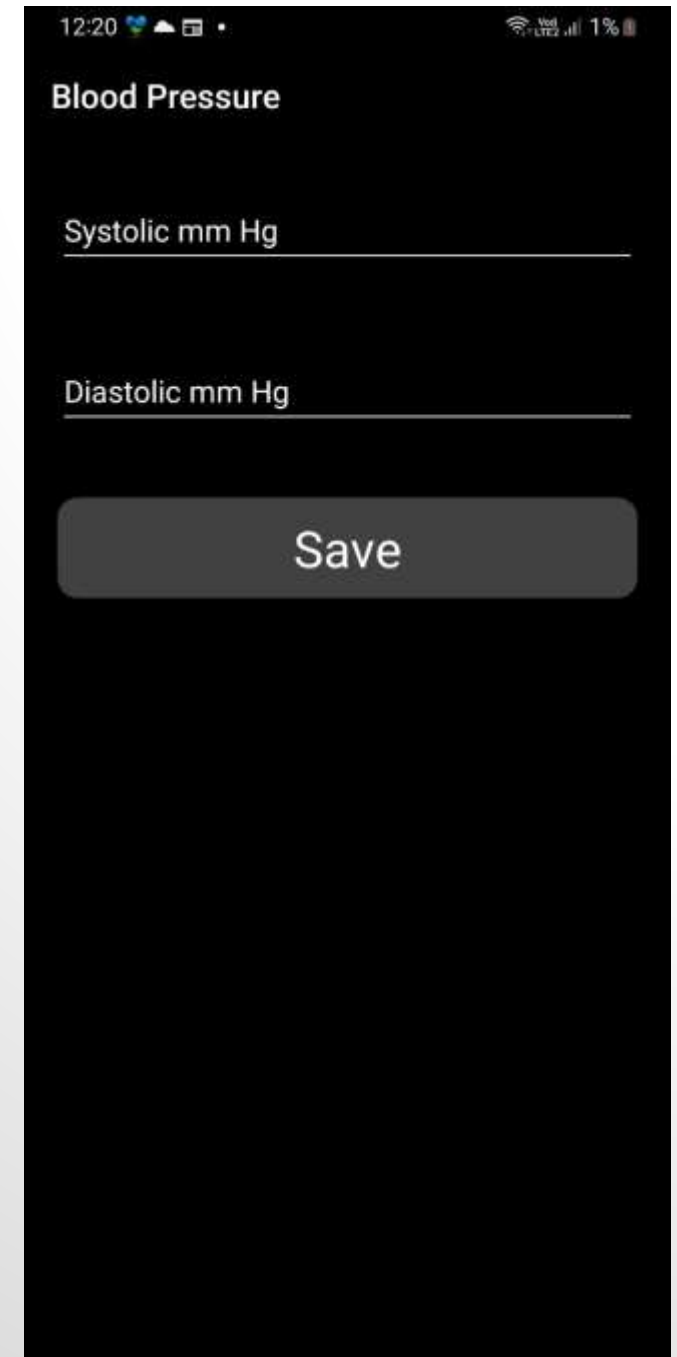
BP@HOME



INR@HOME



Bluetooth Driven or
Manually entered
measurements



INFINITY BOX



- Open source Android IOT device
- Dimensions: 53 x 47 x 15mm
- Weighs only 40g
- IP67 waterproof
- 4G-LTE (Nano SIM) + WiFi + BLE
- Battery life 72 hours (1000 mAh)
- ROM: 32GB RAM: 2GB
- Motion, drop, vibrate and G sensors
- Outdoor and indoor location (GPS/WiFi)
- 2 way voice communication/SOS button
- Mobile app (iOS/Android) and Web interface to track and locate infinity box

Hardware

See how the box looks inside



The Chip

Processor: SC9832E by Unisoc
CPU: 1.4GHz Quad-core, 64 bit
ARM Cortex-A53



Modules

GPS/Galileo/GLONASS/BeiDou
AGPS supported.
WIFI 802.11 b/g/n 2.4GHz
Included.
BLE 4.0 Included.



Memory & Storage

ROM: 32 GB
RAM: 2 GB
Storage: 32 GB



Cellular Bands

2G: 900/1800 MHz
3G: 900/1900/2100 MHz
4G: LTE-FDD (4G):
1900/1800/1700/700/800
MHz



Voice

Speaker Included
Microphone Included
VoIP included



Battery

1000 mAh Lithium Ion
Charging using a docking
station with USB cable



Size & Weight

Size: 53 x 47 x 15mm
Weight: 40 grams



Waterproof

IP67 waterproof protection
for dust and water



Sensors

Motion, G-Sensor, Drop
detection, Gyroscope,
Accelerometer, Vibration,
sensorHUB



1 Button

1 Middle button that you can
control. Single press, Double
press, Long press (3 seconds)

Foxi Integration

3 - STATISTICS AND GENERAL SETTINGS

QA Department

3 Online 14 Offline 17 Total

479 New alarms 5 In progress alarms

2 - MAP VIEW

1 - DEVICE MANAGEMENT

4 - ALARM MONITORING AND RESPONSE

Tracker Name	Alarm Type	Arrival Date	Address	Phone Number	Extra information
40 watch - 2	Office	05/03/2020 17:37:55	Aikun@BMF, 175, Longwood Road East	19872527769	
40 safety watch	SCB	05/03/2020 17:28:55			
40 safety watch	Low battery	05/03/2020 17:28:54			
40 watch - 2	Office	05/03/2020 17:26:36	Aikun@BMF, 175, Longwood Road East	19872527769	
Alert 1	SCB	05/03/2020 17:50:56	Mary, Annamaria, Hippolyte, Chast	40709046111296	
40 watch - 2	Office	05/03/2020 14:35:21	Aikun@BMF, 175, Longwood Road East	19872527769	
Alert 1	SCB	05/03/2020 14:31:51	Mary, Annamaria, Hippolyte, Chast	40709046111296	

Open alarm window

Devices Geo Fences History Point of interest

Device: Abuelo 4G (1945)

Date from: 06.01.2020 10:15

Date to: 06.01.2020 21:00

Show on map Hide History window

Backward Forward

Devices Geo Fences History Point of interest

School

Toronto W Hospital

Grandpa's home

Community center

Seniors home

HealthWatch Mobile App - Home Screen:

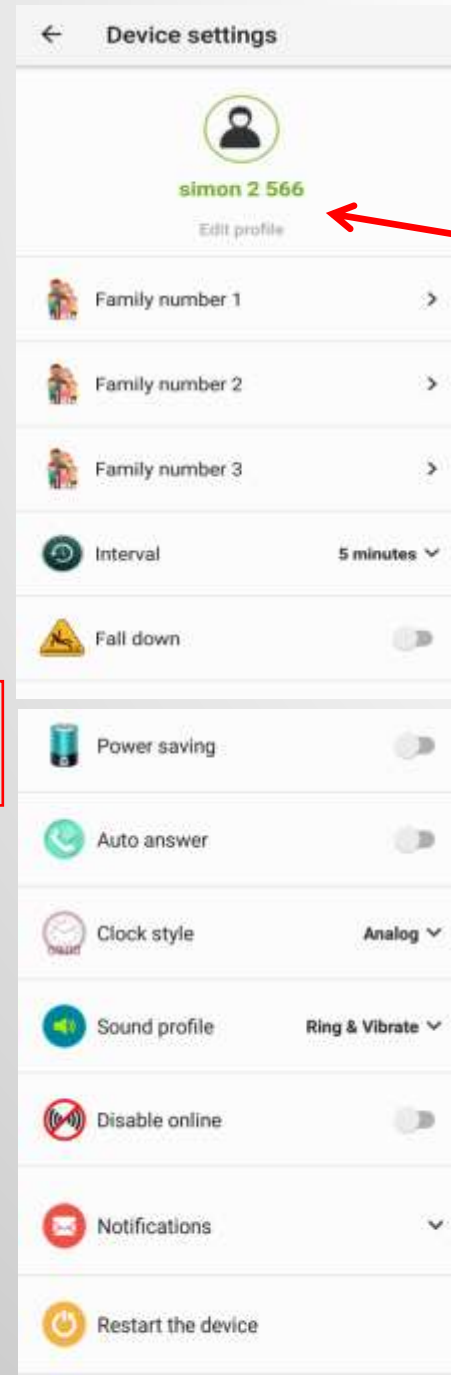


HealthWatch Mobile App - Action Buttons:



HealthWatch App

- Device Setting Screen:



Device Name: Change name/icon

Add device emergency /
contact numbers for device

Device sending data

Turn on/off Fall detection

How device handles calls

Change clock style on device

Recommend other settings left at
default for standard user

Page scroll
up/down

Lipids@Home

- Lateral flow Cholesterol check
- One time use
- 10 minute check
- 150 test pilot



6 in 1 device Health Watch



