

Information for Clinical Choice Matrix and Support Document

Pulse Oximeters

Introduction

Information for Clinical Choice (ICC) has been developed to assist clinicians in the decision-making process when assessing the suitability of a product by providing a clear illustration and description of the features of a range of similar products supplied through NHS Supply Chain. The criteria provided, in the form of a Product Matrix and Support Document, is the result of a product review, conducted by the Clinical Engagement and Implementation Team, with support from clinical stakeholders from across the NHS.

The aim, alongside delivering savings back into NHS frontline services, is to ensure that clinical choice remains at the forefront of any product switching decision.







Pulse Oximeters Fingertip Device:







Pulse oximetry finger devices are electrically powered, photoelectric instruments designed to non-invasively measure and display haemoglobin oxygen saturation (SpO₂). They operate by emitting red and infrared light through the skin via integrated light-emitting diodes (LEDs), with a photodetector capturing the transmitted light to calculate oxygen saturation and pulse rate.

Skin Pigmentation and Measurement Accuracy




There is evidence that demonstrates skin pigmentation can influence the accuracy of pulse oximetry readings. Research shows that darker pigmentation more strongly attenuates red light before it reaches the bloodstream, reducing the device's ability to detect decreases in oxygen saturation, especially in low-oxygen states (hypoxaemia). This may lead to systematic overestimation of SpO₂ in people with darker skin pigmentation.

We have been working with suppliers on the current framework to identify which ones have evidence demonstrating product accuracy across different skin pigmentations, as well as those who are actively working toward obtaining this evidence. This information can be found in the ICC below. If you would like additional evidence from suppliers to support clinical decision-making when using this document, please use the contact details provided, and we will obtain the relevant information on your behalf.

Pulse Oximeters Fingertip Device (Part 1)						
Supplier	Albert Waeschle Ltd	DRIVE DEVILBISS HEALTHCARE LTD	HENLEYS MEDICAL SUPPLIES LIMITED	KINETIC WELLBEING	KINETIC WELLBEING	KINETIC WELLBEING
Brand	Contec	PF-10A	Unimed	Kinetik	Kinetik	Kinetik
MPC	G-50d	PF-10A	UC60E	JPD-500E	PO6L	JDP-500G
NPC	FBC465	FJK85063	FBC85161	FBC85141	FBC85142	FJK85008
Description	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries
Picture						
Route	eDirect	eDirect	eDirect	eDirect	eDirect	eDirect
Battery life in hours / Checks - continuous use	30 hrs	24 hours	24 hours	30 hrs	24 hrs	20hrs
Max wear time	24 hours	24 hours	24 hours	2 hours	2 hours	2 hours
Paediatric Use (Y/N)	N	Y	Y	Y	Y	Y
Warranty	12 months	12 months	6 months	24 months	24 months	24 months
Automatic turn on / off (OFF)	Y	Y	Y	Y	Y	Y
Case supplied	Y	N	-	N	N	N
Strap provided	Y	Y	-	Y	Y	Y
Display screen size	1.8 x 2.7cm	-	-	2.6 x 1.8 cm	2.6 x 1.8 cm	2.6 X1.8 cm
Weight	50 g	37g	31g	50g	50g	50.4g
Weight – Including / Excluding Batteries	Including	Including	Excluding	Including	Including	Including
Pulse rate - Measurement range (20-250bpm)	30 - 245 bpm	30 - 245 bpm	30 - 250 bpm	25 - 250 bpm	25 – 250 bpm	25 – 250 bpm
Pulse Rate Accuracy (+/- 2%)	±2bpm	±2bpm	±2bpm	±2bpm	±2bpm	±2bpm
Saturation rate – Measurement Range	35 - 99%	35 - 99%	80 - 99 %	35%-100%	70%-100%	70%-100%
Saturation rate Accuracy	+ / - 2%	+ / - 2%	+ / - 2%	±2%	±2%	±2%
Tested on darker skin pigmentation	Y	Y	Y	N	N	N

Pulse Oximeters Fingertip Device (Part 2)						
Supplier	Masimo Uk (E Direct)	Masimo Uk	Proact Medical Ltd	Proact Medical Ltd	Proact Medical Ltd	Proact Medical Ltd
Brand	Masimo mightysat	Masimo mightysat	Nonin	Nonin Onyx Vantage	Nonin Onyx Vantage	Nonin Onyx Vantage
MPC	9907	9707	9550	9590-BL	9590-RD	9590-BK
NPC	FBC85049	FBC1240	FBC135	FBC959	FBC960	FBC134
Description	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries
Picture						
Route	eDirect	eDirect	eDirect	eDirect	eDirect	Stocked
Battery life in hours / Checks - continuous use	Approx -1800 spot-checks	Approx - 1800 spot-checks	2500 checks	6000 checks	6000 checks	6000 checks
Max wear time	Spot Check	Spot Check	4 hours	4 hours	4 hours	4 hours
Paediatric Use (Y/N)	Y	Y	Y	Y	Y	Y
Warranty	24 months	24 months	48 months	48 months	48 months	48 months
Automatic turn on / off (OFF)	Y	Y	Y	Y	Y	Y
Case supplied	Y	Y	Y	Y	Y	Y
Strap provided	Y	Y	Y	Y	Y	Y
Display screen size	2.75 cm x 2.04 cm	2.75 cm x 2.04 cm	2.5 cm	2.5 cm	2.5 cm	2.5 cm
Weight	73g	73g	54g	53g	53g	53g
Weight – Including / Excluding Batteries	Including	Including	Including	Including	Including	Including
Pulse rate - Measurement range (20-250bpm)	25 - 240 bpm	25 - 240 bpm	20-250 bpm	20-250 bpm	20-250 bpm	20-250 bpm
Pulse Rate Accuracy (+/- 2%)	+ / -3 bpm	+ / -3 bpm	+ / -3 bpm	+ / -3 bpm	+ / -3 bpm	+ / -3 bpm
Saturation rate – Measurement Range	70%-100%	70%-100%	70-100%	70-100%	70-100%	70-100%
Saturation rate Accuracy	2%	2%	+ / - 2%	+ / - 2%	+ / - 2%	+ / - 2%
Tested on darker skin pigmentation	Y	Y	Y	Y	Y	Y

Pulse Oximeters Fingertip Device (Part 3)						
Supplier	Proact Medical Ltd	Proact Medical Ltd	Proact Medical Ltd	REFLEX MEDICAL LIMITED	RUDOLF RIESTER GMBH	Timesco Healthcare Ltd
Brand	Creative	Creative	Creative	ChoiceMMed	Riester ri-fox N	Timesco ChoiceMed
MPC	PC-60E	PC-60B1BK	PC-60B1BL	OXI/001	1905	TDM-PO-CI218
NPC	FBC85481	FBC1381	FBC1382	FBC85145	FBC85154	FBC1667
Description	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries
Picture						
Route	eDirect	eDirect	eDirect	eDirect	eDirect	eDirect
Battery life in hours - continuous use	> 30 hrs	> 30 hrs	> 30 hrs	29 hrs	30 hrs	30 hrs
Max wear time	Spot Check	2 hours	2 hours	5 years	4 hours	Spot check
Paediatric Use (Y/N)	Y	Y	Y	Y	Y	Y
Warranty	48 months	36 months	36 months	24 months	30 months	36 months
Automatic turn on / off (OFF)	Y	Y	Y	Y	Y	Y
Case supplied	Y	Y	Y	Y	N	Y
Strap provided	Y	Y	Y	Y	Y	Y
Display screen size	3cm	2.5 cm	2.5 cm	2.4 cm	2.5 x 2.0 cm	2.2cm x 2.2cm
Weight	60g	50g	50g	50g	48g	65g
Weight – Including / Excluding Batteries	Including	Including	Including	-	Including	Including
Pulse rate - Measurement range (20-250bpm)	30-240 bpm	30 - 240 bpm	30 - 240 bpm	30-250bpm	30 - 235 bpm	30 - 250 bpm
Pulse Rate Accuracy (+/- 2%)	+/- 2bpm	+/- 2bpm	+/- 2bpm	2bpm between 30-99bpm and 2% between 100-250bpm	30 - 100 bpm ±2 bpm 101 - 235 bpm ±2 %	+/- 2bpm ('+/- 2% above 100bpm)
Saturation rate – Measurement Range	35 - 100%	35 - 99%	35 - 99%	70-100%	70 - 100	70 - 100
Saturation rate Accuracy	+/- 2% (3% below 70%)	+/- 2% (3% below 70%)	+/- 2% (3% below 70%)	(+/- 2%)	(+/- 2%)	(+/- 2%)
Tested on darker skin pigmentation	Y	Y	Y	N	N	N

Pulse Oximeters Fingertip Device (Part 4)						
Supplier	Timesco Healthcare Ltd	Timesco Healthcare Ltd	Timesco Healthcare Ltd	Timesco Healthcare Ltd	Timesco Healthcare Ltd	Timesco Healthcare Ltd
Brand	Timesco CB31 Strike Plus	Timesco ChoiceMed C52	Timesco ChoiceMed	Timesco ChoiceMed	Timesco ChoiceMed	Timesco ChoiceMed
MPC	TDM-PO-CB31	TDM-PO-C52	TDM-PO-C29	TDM-PO-C19	TDM-PO-CN130	TDM-PO-CN330
NPC	FBC306	FBC269	FBC385	FBC323	FBC1668	FBC85144
Description	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries	Finger Device spo2 with battery indicator and batteries
Picture						
Route	eDirect	eDirect	Stocked	Stocked	Stocked	eDirect
Battery life in hours - continuous use	8 hours	30 hrs	30 hrs	30 hours	30 hours	30 hours
Max wear time	Spot check	Spot check	Spot check	30 mins Spot Check	Spot check	Spot check
Paediatric Use (Y/N)	Y	Y	Y	Y	Y	Y
Warranty	36 months	36 months	24 Months	24 months	12 months	12 months
Automatic turn on / off (OFF)	Y	Y	Y	Y	Y	Y
Case supplied	N	Y	Y	Y	N	N
Strap provided	Y	Y	Y	Y	Y	Y
Display screen size	2.5cm x 1.5cm	2.5cm x 1.5cm	3cm x 2.5cm	3cm x 2.5cm	3cm x 2.5cm	3cm x 2.5cm
Weight	50g	35g	50g	50g	50g	50g
Weight – Including / Excluding Batteries	Excluding	Including	Including	Including	Including	Including
Pulse rate - Measurement range (20-250bpm)	30 - 235 bpm	30 - 235 bpm	31 - 235 bpm	30-250 bpm	30-250 bpm	30-250 bpm
Pulse Rate Accuracy (+/- 2%)	+/- 2bpm ('+/- 2% above 100bpm)	+/- 2bpm ('+/- 2% above 100bpm)	+/- 2bpm ('+/- 2% above 100bpm)	(+/- 2%)	(+/- 2%)	(+/- 2%)
Saturation rate – Measurement Range	70-100%	70-100%	70-100%	70-100%	70-100%	70-100%
Saturation rate Accuracy	+/- 3digits	+1 2% ('+/- 3digits below 80%)	+1 2% ('+/- 3digits below 80%)	(+/- 2%)	(+/- 2%)	(+/- 2%)
Tested on darker skin pigmentation	N	N	N	N	N	N

References

If you have any questions, would like further information, or have feedback to share, please contact:

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