

Table S1. Overview of all scenarios with the respective deranged and normal parameters. Orange: too low; green: safe; purple: too high.

Scenario	1	2	3	4	5	6
Clinical diagnosis	Anaemia with lactic acidosis	Acute respiratory acidosis	Metabolic acidosis in hyperglycaemia	Methaemoglobinemia	Hypokalaemia and hypernatraemia	Hypoxaemia
Value						
pH	Orange	Orange	Orange	Green	Green	Green
pCO ₂	Green	Purple	Orange	Green	Green	Green
pO ₂	Purple	Green	Green	Green	Green	Orange
P50	Purple	Purple	Purple	Orange	Green	Green
sO ₂	Green	Green	Green	Green	Green	Orange
Haemoglobin	Orange	Green	Green	Green	Green	Green
COHb	Green	Green	Green	Green	Green	Green
MetHb	Green	Green	Green	Purple	Green	Green
Potassium	Green	Green	Green	Green	Orange	Green
Sodium	Green	Green	Green	Green	Purple	Green
Chloride	Green	Green	Green	Green	Green	Green
Calcium	Green	Green	Green	Green	Green	Green
Anion gap	Purple	Green	Purple	Green	Green	Green
Lactate	Purple	Green	Purple	Green	Green	Green
Glucose	Green	Green	Purple	Green	Green	Green
Osmolality	Green	Green	Purple	Green	Green	Green
Base excess	Orange	Green	Orange	Green	Green	Green
Bicarbonate	Orange	Green	Orange	Green	Green	Green

Abbreviations: pCO₂: partial pressure of carbon dioxide; pO₂: partial pressure of oxygen; sO₂: oxygen saturation; COHb: carboxyhaemoglobin; MetHb: methaemoglobin.