



Technical Bulletin updated

RAPIDPoint 500e Blood Gas Analyzer

TO: Medical Staff and Clients

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DATE: November 12, 2021

SUBJECT: Siemens RAPIDPoint analyzer will replace the Roche b221 analyzer effective November 15, 2021

Effective November 15, 2021 the hospital labs at Punchbowl, West Oahu, and North Hawaii will be implementing the new Siemens RAPIDPoint 500e Blood Gas Analyzer to replace the current older Roche b221 Blood Gas Analyzer.

The RAPIDPoint 500e Blood Gas Analyzer is intended for *in vitro* diagnostic use and is designed to provide the determination in **whole blood** for the following parameters:

- Ionized Calcium
- Total Hemoglobin and fractions: Oxyhemoglobin, Carboxyhemoglobin, and Methemoglobin
- Arterial Blood Gases (North Hawaii Community Hospital Only)
- Venous Blood Gases (North Hawaii Community Hospital Only)

The RAPIDPoint 500e Blood Gas Analyzer is also intended for *in vitro* testing of pleural fluid and body fluid samples for the pH parameter.

The following reporting changes will occur with the changeover:

- The CO-oximetry parameter, Oxyhemoglobin (measured), which has been reported as O2 Saturation (measured) in the past, will now report out specifically as Oxyhemoglobin, which is the preferred terminology when reporting out CO-oximetry results. Oxyhemoglobin is the fraction of hemoglobin that is reversibly bound to oxygen. O2 Saturation will remain the preferred terminology specifically for Arterial/Venous Blood Gas testing.
- Ionized Calcium reference range will be adjusted 1.15 – 1.33 mmol/ L to reflect whole blood specimen requirements.
- Methemoglobin reference range will be adjusted to 0.0 – 1.5 % per manufacturer recommendations.

RAPIDPoint 500e Blood Gas Analyzer tests:

Test Name	Order Code	Specimen Requirement	Specimen Rejection	Stability
Ionized Calcium	145 (Oahu) 50145 (NH)	Whole Blood, full draw Lithium Heparin or Lithium Heparin PST on wet ice or refrigerated	Clotted, frozen, insufficient quantity, specimen older than stability limits, wrong specimen type, uncapped specimen, microtainer specimen.	8 hours
Oxyhemoglobin	6530 (Oahu) 56530 (NH)	Whole Blood Heparinized Syringe on wet ice	Ambient, clotted, frozen, hemolyzed, specimen older than stability limits, uncapped specimen.	2 hours
Carboxyhemoglobin	6532 (Oahu) 56532 (NH)	Whole Blood Lithium Heparin Syringe on wet ice or Lithium Heparin (Green)	Ambient, clotted, frozen, hemolyzed, specimen older than stability, uncapped specimen.	Syringe: 2 hours Li Hep: 3 days uncapped
Methemoglobin	6531 (Oahu) 56531 (NH)	Whole Blood Lithium Heparin Syringe on wet ice or Lithium Heparin (Green)	Ambient, clotted, frozen, hemolyzed, specimen older than stability, uncapped specimen.	Syringe: 2 hours Li Hep: 3 days uncapped

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Test Name	Order Code	Specimen Requirement	Specimen Rejection	Stability
Body Fluid pH	48 (Oahu) 50048 (NH)	Lithium Heparin Body Fluid on wet ice or refrigerated, avoid contamination by air	Ambient, clotted, contaminated, frozen, insufficient quantity, specimen older than stability limits, highly viscous specimens.	Recommend testing within 1 hour of collection, stable up to 24 hours refrigerated
Arterial Blood Gas	55788 (NH)	Whole Blood Heparinized Syringe, avoid contamination by air, deliver to lab within 15 minutes of collection	Clotted, specimen older than stability limits.	Ambient 30 minutes
Venous Blood Gas	56434 (NH)	Whole Blood Heparinized Syringe, avoid contamination by air, deliver to lab within 15 minutes of collection	Clotted, specimen older than stability limits.	Ambient 30 minutes

RAPIDPoint 500e Blood Gas Analyzer Reference Range and Unit of Measure:

Test Name	Reference Range	Unit of Measure
Ionized Calcium	1.15 – 1.33	mmol/L
Oxyhemoglobin	Arterial: 94.0 – 98.0 Venous: 70.0 – 75.0	%
Hemoglobin	Male: 14.0 – 18.0 Female: 12.0 – 16.0	g/dL
Carboxyhemoglobin	< 2.0	%
Methemoglobin	0.0 – 1.5	%
Body Fluid pH	Pleural Fluid pH: The American College of Chest Physicians guidelines categorizes a complicated parapneumonic effusion as evidence of a pleural pH of 7.2 or less. B Putnam et al., Do we measure pleural fluid pH correctly?. 1070-5287, 2013 Wolters Kluwer Health. All other body fluids: This test has not be validated or approved for sample types other than pleural fluid. No reference range available. Please correlate results with clinical findings.	N/A

Test Name	Reference Range	Unit of Measure
Arterial Blood Gas (North Hawaii Only)	Parameters reported: Type O2 (Room Air, Cannula, Bagged, Ventilator, Mask, Hood) Amount O2 pH—Reference Range: 7.35 – 7.45 pCO2—Reference Range: 35 - 45 pO2—Reference Range: 80 - 100 Base Deficit HCO3—Reference Range: 22 - 26 Total CO2—Reference Range: 23 - 27 Oxygen Saturation: 97 – 100 FIO2 Flow Mode Rate Tidal Volume PEEP Site (Left Radial, Left Brachial, Right Radial, Right Brachial, Left Femoral, Right Femoral, A Line, Arterial, Swan Grantz, Pul Artery) Drawn By Allen’s Test (Yes or No)	Parameters reported: Type O2—N/A Amount O2—N/A pH—N/A pCO2—mmHg pO2—mmHg Base Deficit—mmol/L HCO3—mmol/L Total CO2—mmol/L Oxygen Saturation—% FIO2—% Flow—L/min Mode—N/A Rate—N/A Tidal Volume—mL PEEP—cm H2O Site—N/A Drawn By—N/A Allen’s Test—N/A
Venous Blood Gas (North Hawaii Only)	Parameters reported: Type O2 (Room Air, Cannula, Bagged, Ventilator, Mask, Hood) Amount O2 FIO2 Flow Mode Rate Tidal Volume PEEP Site Drawn By Allen’s Test (Yes or No) pH—Reference Range: 7.32 – 7.43 pCO2—Reference Range: 40 - 45 pO2—Reference Range Base Deficit HCO3—Reference Range: 22 - 29 Total CO2—Reference Range: 22 - 26 Oxygen Saturation	Parameters reported: Type O2—N/A Amount O2—N/A FIO2—% Flow—L/min Mode—N/A Rate—N/A Tidal Volume—mL PEEP—cm H2O Site—N/A Drawn By—N/A Allen’s Test—N/A pH—N/A pCO2—mmHg pO2—mmHg Base Deficit—mmol/L HCO3—mmol/L Total CO2—mmol/L Oxygen Saturation—%

For questions, please call DLS Client Services (808-589-5101), Dr. Wesley Kim (808-589-5131), or Dr. Ana Ortega-Lopez (808-691-4470).