

**Test Updates** 

## **Immediate Action**

In our continuing effort to provide you with the highest quality toxicology laboratory services available, we have compiled important changes regarding a number of tests we perform. Listed below are the types of changes that may be included in this notification, effective Monday, July 28, 2014

**Test Changes -** Tests that have had changes to the method/ CPT code, units of measurement, scope of analysis, reference comments, or specimen requirements.

**Discontinued Tests -** Tests being discontinued with alternate testing suggestions.

Please use this information to update your computer systems/records. These changes are important to ensure standardization of our mutual laboratory databases.

If you have any questions about the information contained in this notification, please call our Client Support Department at (866) 522-2206. Thank you for your continued support of NMS Labs and your assistance in implementing these changes.

The CPT Codes provided in this document are based on AMA guidelines and are for informational purposes only. NMS Labs does not assume responsibility for billing errors due to reliance on the CPT Codes listed in this document.

Effective Date:

Monday, July 28, 2014



# **Test Updates**

Test Code	Test Name	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
6108B	Cadmium Exposure Profile (OSHA), Blood			•	•			•	
6108U	Cadmium Exposure Profile (OSHA), Urine			•	•			•	
0921UH	Cadmium, 24 Hour Urine			•	•			•	
0921B	Cadmium, Blood			•	•			•	
0921R	Cadmium, RBCs				•				
0921SP	Cadmium, Serum/Plasma			•					
0921U	Cadmium, Urine				•			•	
1006B	Carbon Monoxide - Iron Ratio Profile, Blood		•						
1006TI	Carbon Monoxide - Iron Ratio Profile, Tissue		•						
1042U	Cesium, Urine							•	
1273B	Chromium - Total, Blood (CSA)			•	•				
1273SP	Chromium - Total, Serum/Plasma (CSA)			•					
1273U	Chromium - Total, Urine (CSA)			•	•			•	
1265B	Chromium and Cobalt, Blood		•	•	•				
1265SP	Chromium and Cobalt, Serum/Plasma		•	•					
1265U	Chromium and Cobalt, Urine		•	•					
1261B	Chromium, Blood			•	•				
1261R	Chromium, RBCs			•	•			•	
1261SP	Chromium, Serum/Plasma			•					
1261U	Chromium, Urine			•	•				
1290UH	Cobalt, 24 Hour Urine			•	•				
1290B	Cobalt, Blood			•	•				
1290R	Cobalt, RBCs			•	•			•	
1290SP	Cobalt, Serum/Plasma			•					
1290U	Cobalt, Urine			•	•				
1330U	Copper, Urine			•	•				
1781SP	Diquat, Serum/Plasma								•
1781U	Diquat, Urine								•
8103B	Environmental Exposure Screen, Blood (Forensic)			•					
6303U	Firefighter Core Baseline Profile, Urine			•				•	
2150B	Gallium, Blood			•	•			•	
2150R	Gallium, RBCs				•				

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# **Test Updates**

Test Code	Test Name	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
2150SP	Gallium, Serum/Plasma			•					
2150U	Gallium, Urine			•	•				
6210LI	General Unknown Panel, Liquid					•			
6210SL	General Unknown Panel, Solid					•			
2241U	Heavy Metals Panel 5A, Urine (CSA)			•	•				
2231B	ICP/MS Panel, Blood (Forensic)								•
2231H	ICP/MS Panel, Hair (Forensic)								•
2231SP	ICP/MS Panel, Serum/Plasma (Forensic)								•
2231TI	ICP/MS Panel, Tissue (Forensic)								•
2231U	ICP/MS Panel, Urine (Forensic)								•
6364R	Inorganic Panel 64, RBCs		•	•		•			
2492SP	Lead, Serum/Plasma							•	
2570B	Manganese, Blood			•	•			•	
2570R	Manganese, RBCs			•	•			•	
2570U	Manganese, Urine				•			•	
2697B	Metals Acute Poisoning Panel, Blood (CSA)			•		•		•	
6153R	Metals Panel 1, RBCs			•	•			•	
2664UH	Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), 24 Hour Urine				•			•	
2664U	Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), Urine							•	
2693B	Metals/Metalloids Acute Poisoning Panel, Blood			•					
2693R	Metals/Metalloids Acute Poisoning Panel, RBCs			•				•	
2693SP	Metals/Metalloids Acute Poisoning Panel, Serum/Plasma							•	
3782LI	Metals/Metalloids Panel (General Unknown), Liquid					•			
3782SL	Metals/Metalloids Panel (General Unknown), Solid					•			
2661SP	Metals/Metalloids Panel 1, Serum/Plasma							•	
2662B	Metals/Metalloids Panel 2, Blood		•	•	•			•	
2662SP	Metals/Metalloids Panel 2, Serum/Plasma		•						
2662U	Metals/Metalloids Panel 2, Urine		•		•			•	
2663B	Metals/Metalloids Panel 3, Blood			•		•		•	
2663SP	Metals/Metalloids Panel 3, Serum/Plasma		•					•	

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# **Test Updates**

Test Code	Test Name	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
2663U	Metals/Metalloids Panel 3, Urine			•	•			•	
6311B	Metals/Metalloids Panel, Blood (CSA)			•				•	
2240U	Metals/Metalloids Panel, Urine (CSA)			•	•			•	
3069R	Mineral Profile (7), RBCs		•	•	•	•		•	
3066B	Mineral Profile, Blood		•	•	•	•			
3066R	Mineral Profile, RBCs		•	•	•	•		•	
3066SP	Mineral Profile, Serum/Plasma		•						
3090B	Molybdenum, Blood			•	•				
3090R	Molybdenum, RBCs			•	•			•	
3090SP	Molybdenum, Serum/Plasma			•					
3090U	Molybdenum, Urine			•	•			•	
3140B	Nickel, Blood			•	•				
3140R	Nickel, RBCs				•				
3140U	Nickel, Urine			•				•	
3340SP	Paraquat, Serum/Plasma								•
3340U	Paraquat, Urine								•
4124B	Rubidium, Blood		•	•	•			•	
4124R	Rubidium, RBCs		•	•	•				
4124SP	Rubidium, Serum/Plasma			•					
4124U	Rubidium, Urine		•		•				
4180B	Selenium, Blood			•	•				
4180R	Selenium, RBCs			•	•			•	
4180SP	Selenium, Serum/Plasma			•					
6317U	Semi Conductor Panel, Urine		•	•		•		•	
4478SP	Thorium, Serum/Plasma							•	
4765B	Vanadium, Blood		•	•	•				
4765R	Vanadium, RBCs		•		•				
4765SP	Vanadium, Serum/Plasma			•					
4765U	Vanadium, Urine		•		•			•	



## **Test Changes**

6108B Cadmium Exp	osure Profile (OSHA), Blood	
Summary of Changes:	Specimen Requirements were of Stability was changed. Reference Comment was changed	changed. ged.
Specimen Requirements:	2 ml Blood	
Transport Temperature	2 III Blood Refrigerated	
Specimen Container:	Royal Blue ton tube (Trace met	al-free: EDTA)
Light Protection:	Not Required	
Special Handling:	Please submit samples using th Collect sample at end of shift in Container - Cadmium. Clotted Blood specimens are no Submit in container with a non- Heparin based anticoagulants a	ne NMS Labs OSHA Cadmium Exposure kit. to the provided container labeled: Blood Collection of acceptable. Heparin based anticoagulant. Tubes containing are not acceptable.
Rejection Criteria:	Light Green top tube (Lithium H Royal Blue top tube (Trace met Heparin).	leparin). Tan top tube - glass (Sodium Heparin). al-free; Sodium Heparin). Green top tube (Sodium
Stability: Scope of Analysis:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s) ICP/MS (82300, None): Cadmiu	ım
Method (CPT Code)		
Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers.
		Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides.
		Please contact NMS Labs if you need assistance in supplying your state with the required information.
6108U Cadmium Exp	osure Profile (OSHA), Urine	

Summary of Changes: Specimen Requirements were changed. Stability was changed. Reference Comment was changed.



Specimen Requirements:	3 mL Urine	
Transport Temperature:	Refrigerated	
Specimen Container:	Plastic container (Acid washed free)	or Trace metal-free), Plastic container (preservative-
Light Protection:	Not Required	
Special Handling: Rejection Criteria:	Unpreserved urine should be recollection. Acceptable preservation 16M acid/10 mL urine). Avoid exhours prior to sample collection Received Room Temperature.	frigerated immediately and analyzed within 1 week of tives include: Trace Metal Free Nitric Acid (0.1 mL of posure to gadolinium-based contrast media for 48
Stability: Scope of Analysis:	Room Temperature: 5 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 30 day(s) Colorimetry (82570): Creatinine	
Method (CPT Code)	ICP/MS (82300, None): Cadmiu	ım, Cadmium (Creatinine corrected)
Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine
		Refer to OSHA website for workplace information
0921UH Cadmium, 24 I	Hour Urine	
0921UH Cadmium, 24 I Summary of Changes:	Hour Urine Specimen Requirements were o Stability was changed. Reference Comment was chang	changed.
0921UH Cadmium, 24 I Summary of Changes:	Hour Urine Specimen Requirements were o Stability was changed. Reference Comment was chang 2 mL 24 Hour Urine	changed.
0921UH Cadmium, 24 I Summary of Changes: Specimen Requirements: Transport Temperature:	Hour Urine Specimen Requirements were of Stability was changed. Reference Comment was chang 2 mL 24 Hour Urine Refrigerated	changed.
0921UH Cadmium, 24 I Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container:	Hour Urine Specimen Requirements were of Stability was changed. Reference Comment was chang 2 mL 24 Hour Urine Refrigerated Plastic container (Acid washed	changed. ged.
0921UH Cadmium, 24 I Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container: Light Protection:	Hour Urine Specimen Requirements were of Stability was changed. Reference Comment was chang 2 mL 24 Hour Urine Refrigerated Plastic container (Acid washed Not Required	changed. ged.
0921UH Cadmium, 24 Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container: Light Protection: Special Handling:	Hour Urine Specimen Requirements were of Stability was changed. Reference Comment was changed 2 mL 24 Hour Urine Refrigerated Plastic container (Acid washed Not Required Unpreserved urine should be re collection. Acceptable preservat Nitric Acid (0.1 mL of 12M acid/ contrast media for 48 hours prior	changed. ged. frigerated immediately and analyzed within 1 week of tives include: Trace Metal Free Hydrochloric Acid or 10 mL urine). Avoid exposure to gadolinium-based or to sample collection.
0921UH Cadmium, 24 H Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container: Light Protection: Special Handling: Rejection Criteria:	Hour Urine Specimen Requirements were of Stability was changed. Reference Comment was changed 2 mL 24 Hour Urine Refrigerated Plastic container (Acid washed Not Required Unpreserved urine should be re collection. Acceptable preservat Nitric Acid (0.1 mL of 12M acid/ contrast media for 48 hours prio None	changed. ged. or Trace metal-free) frigerated immediately and analyzed within 1 week of tives include: Trace Metal Free Hydrochloric Acid or 10 mL urine). Avoid exposure to gadolinium-based or to sample collection.
0921UH Cadmium, 24 H Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container: Light Protection: Special Handling: Rejection Criteria: Stability:	Hour Urine Specimen Requirements were of Stability was changed. Reference Comment was changed 2 mL 24 Hour Urine Refrigerated Plastic container (Acid washed Not Required Unpreserved urine should be re collection. Acceptable preservat Nitric Acid (0.1 mL of 12M acid/ contrast media for 48 hours prior None Room Temperature: 7 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 3 month(s)	changed. ged. frigerated immediately and analyzed within 1 week of tives include: Trace Metal Free Hydrochloric Acid or 10 mL urine). Avoid exposure to gadolinium-based or to sample collection.



Compound Name	Units	Reference Comment		
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers		
0921B Cadmium, Blo	od			
Summary of Changes:	Specimen Requirements were Stability was changed. Reference Comment was chan	changed. ged.		
Specimen Requirements:	2 mL Blood			
Transport Temperature:	Refrigerated			
Specimen Container:	Royal Blue top tube (Trace met	tal-free; EDTA)		
Light Protection:	Not Required			
Special Handling:	Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable			
Rejection Criteria:	Light Green top tube (Lithium H Royal Blue top tube (Trace met	leparin). Tan top tube - glass (Sodium Heparin). tal-free; Sodium Heparin). Green top tube (Sodium		
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s)			
Scope of Analysis: Method (CPT Code)	Frozen (-70 °C): 6 month(s) ICP/MS (82300, None): Cadmi	um		
Compound Name	Units	Reference Comment		
Cadmium	mcg/L	Normally: Less than 5 mcg/L. May be elevated in smokers.		
		Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.		
0921R Cadmium, RB	Cs			
Summary of Changes:	Stability was changed.			
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable			
0921SP Cadmium, Ser	um/Plasma			



## **Test Updates**

## **Test Changes**

Summary of Changes:	Specimen Requirements were c	hanged.
Specimen Requirements:	2 mL Serum or Plasma	
Transport Temperature:	Refrigerated	
Specimen Container:	Plasma: Royal Blue top tube (Tr (Trace metal-free; No additive)	ace metal-free; EDTA), Serum: Royal Blue top tube
Light Protection:	Not Required	
Special Handling:	Promptly centrifuge and separate screw capped vial using approved the strew capped vial using approved the strew capped vial using approved the strew capped vial using th	te Serum or Plasma into an acid washed plastic ed guidelines.
Rejection Criteria:	Polymer gel separation tube (SS	ST or PST).
0921U Cadmium, Uri	ne	
Summary of Changes:	Stability was changed. Reference Comment was chang	ged.
Scope of Apalysis:	Room Temperature: 5 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 30 day(s) Colorimetry (82570): Creatinine	
Method (CPT Code)	ICP/MS (82300, None): Cadmiu	m, Cadmium (Creatinine corrected)
Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information
1006B Carbon Monox	kide - Iron Ratio Profile, Blood	
Summary of Changes:	Methods/CPT Codes were chan	ged [ICP/OES (82375, 83540)]
Scope of Analysis: Method (CPT Code)	GC/MS (82375): Carbon Monox ICP/OES (82375, 83540): Iron,	ide Carboxyhemoglobin
1006TI Carbon Mono>	kide - Iron Ratio Profile, Tissue	
Summary of Changes:	Methods/CPT Codes were chan	ged [ICP/OES (82375, 83540, 80103)]
Scope of Analysis: Method (CPT Code)	GC/MS (82375, 80103): Carbon ICP/OES (82375, 83540, 80103	): Iron, Carboxyhemoglobin
1042U Cesium, Urine		
Summary of Changes:	Reference Comment was chang	ged.



## **Test Changes**

Scope of Analysis: ICP/MS (83018): Cesium Method (CPT Code)

Compound Name	Units	Reference Comment
Cesium	mcg/L	Normally: Less than 12 mcg/L.
1273B Chromium - To	otal, Blood (CSA)	
Summary of Changes:	Specimen Requiremen Specimen Requiremen Stability was changed.	ts were changed. ts (Rejection Criteria) were changed.
Specimen Requirements:	2 mL Blood	
Transport Temperature:	Refrigerated	
Specimen Container:	Royal Blue top tube (Tr	race metal-free; EDTA)
Light Protection:	Not Required	
Special Handling:	Submit in container wit Heparin based anticoa	h a non-Heparin based anticoagulant. Tubes containing gulants are not acceptable.
Rejection Criteria:	Plastic container. Ligh (Sodium Heparin). Roy top tube (Sodium Fluor	t Green top tube (Lithium Heparin). Tan top tube - glass yal Blue top tube (Trace metal-free; Sodium Heparin). Gray ide / Potassium Oxalate). Green top tube (Sodium Heparin).
Stability:	Refrigerated: 30 day(s) Frozen (-20 °C): 3 mor Frozen (-70 °C): 6 mor	i A). 0 day(s) 0 0 0th(s) 0th(s)
1273SP Chromium - To	otal, Serum/Plasma (CS	SA)
Summary of Changes:	Specimen Requiremen	ts were changed.
Specimen Requirements:	2 mL Serum or Plasma	
Transport Temperature:	Refrigerated	
Specimen Container:	Plasma: Royal Blue top (Trace metal-free; No a	o tube (Trace metal-free; EDTA), Serum: Royal Blue top tube additive)
Light Protection:	Not Required	
Special Handling:	Promptly centrifuge an screw capped vial usin	d separate Serum or Plasma into an acid washed plastic g approved guidelines.
Rejection Criteria:	Gray top tube (Sodium Polymer gel separation	Fluoride / Potassium Oxalate). Lavender top tube (EDTA). tube (SST or PST). Green top tube (Sodium Heparin).
1273U Chromium - To	otal, Urine (CSA)	
Summary of Changes:	Specimen Requiremen Specimen Requiremen Stability was changed. Reference Comment w	ts were changed. ts (Rejection Criteria) were changed. /as changed.



### **Test Changes**

Specimen Requirements:	3 mL Urine
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative- free)
Light Protection:	Not Required
Special Handling: Rejection Criteria:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Received Room Temperature.
Stability:	Room Temperature: 5 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 30 day(s)
Scope of Analysis: Method (CPT Code)	Colorimetry (82570): Creatinine ICP/MS (82495): Chromium - Total, Chromium - Total (Creatinine corrected)

Compound Name	Units	Reference Comment
Chromium - Total (Creatinine corrected)	mcg/g Creat	Normal urine values are less than 1.0 mcg/g Creatinine.
		The measurement of total chromium includes all forms of chromium, including hexavalent and trivalent chromium. However, this assay does not differentiate the individual forms that comprise the total chromium measurement.

#### 1265B Chromium and Cobalt, Blood

Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Methods/CPT Codes were changed [ICP/MS (82495, 83018)]
Specimen Requirements:	2 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required

Special Handling: Clotted Blood specimens are not acceptable. To reduce specimen contamination, powder-free gloves are recommended during collection. Blood should be drawn through an indwelling plastic intracath needle into a trace metal free evacuated tube



Rejection Criteria:	<ul> <li>(e.g. B/D Royal blue top Vacutainer®) containing EDTA as a preservative. If using a steel needle, contamination may be reduced by discarding the first tube.</li> <li>Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.</li> <li>Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin) – Royal Blue top tube (Trace metal-free: Sodium Heparin) – Gray</li> </ul>
Stability:	top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA). Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
Scope of Analysis: Method (CPT Code)	ICP/MS (82495, 83018): Chromium, Cobalt
1265SP Chromium and	I Cobalt, Serum/Plasma
Summary of Changes:	Specimen Requirements were changed. Methods/CPT Codes were changed [ICP/MS (82495, 83018)]
Specimen Requirements:	2 mL Serum or Plasma
Transport Temperature:	Refrigerated
Specimen Container:	Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
Light Protection:	Not Required
Special Handling:	Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved quidelines
Rejection Criteria:	Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Polymer gel separation tube (SST or PST). Green top tube (Sodium Heparin).
Scope of Analysis: Method (CPT Code)	ICP/MS (82495, 83018): Chromium, Cobalt
1265U Chromium and	l Cobalt, Urine
Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Methods/CPT Codes were changed [ICP/MS (82495, 83018)]
Specimen Requirements:	2 mL Urine
Specimen Container:	Reingerateu
Light Protection:	Not Required
Special Handling:	Increaserved urine should be refrigerated immediately and analyzed within 1 week of
Special Handling.	collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.
Rejection Criteria:	None



## **Test Changes**

Scope of Analysis: ICP/MS (82495, 83018): Chromium, Cobalt Method (CPT Code)

1261B Chromium, Bl	bod
Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed.
Specimen Requirements:	2 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria: Stability:	Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA). Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
1261R Chromium, RE	BCs
Summary of Changes:	Specimen Requirements (Specimen Container) were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Reference Comment was changed.
Specimen Requirements:	1 mL RBCs
Transport Temperature:	Refrigerated
Specimen Container:	Green top tube (Sodium Heparin), Light Green top tube (Lithium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	two hours of collection.
Rejection Criteria:	Received Frozen. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable
Scope of Analysis: Method (CPT Code)	ICP/MS (82495): Chromium



Compound Name	Units	Reference Comment
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
1261SP Chromium, Se	rum/Plasma	
Summary of Changes:	Specimen Requirements were	e changed.
Specimen Requirements:	2 mL Serum or Plasma	
Transport Temperature:	Refrigerated	
Specimen Container:	Plasma: Royal Blue top tube ( (Trace metal-free; No additive	Trace metal-free; EDTA), Serum: Royal Blue top tube )
Light Protection:	Not Required	
Special Handling:	Promptly centrifuge and separ screw capped vial using appro	ate Serum or Plasma into an acid washed plastic oved guidelines.
Rejection Criteria:	Gray top tube (Sodium Fluoric Polymer gel separation tube (	le / Potassium Oxalate). Lavender top tube (EDTA). SST or PST). Green top tube (Sodium Heparin).
1261U Chromium, Ur	ine	
Summary of Changes:	Specimen Requirements (Reje Stability was changed.	ection Criteria) were changed.
Specimen Requirements:	4 mL Urine	
Transport Temperature:	Refrigerated	
Specimen Container:	Plastic container (Acid washed	d or Trace metal-free), Plastic container (preservative-
Light Protection:	Not Required	
Special Handling:	Unpreserved urine should be collection. Acceptable preserv Nitric Acid (0.1 mL of 12M acid contrast media for 48 hours pr	refrigerated immediately and analyzed within 1 week of atives include: Trace Metal Free Hydrochloric Acid or d/10 mL urine). Avoid exposure to gadolinium-based ior to sample collection.
Rejection Criteria: Stability:	Received Room Temperature. Room Temperature: 5 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 30 day(s)	
1290UH Cobalt, 24 Hou	ur Urine	



## **Test Updates**

Summary of Changes	: Specimen Requirements were changed. Specimen Requirements (Specimen Container) were changed. Stability was changed.
Specimen Requirements	: 2 mL 24 Hour Urine
Transport Temperature	: Refrigerated
Specimen Container	: Plastic container (Acid washed or Trace metal-free)
Light Protection	: Not Required
Special Handling	<ul> <li>Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.</li> </ul>
Rejection Chiena Stability	· None · Room Tomporatura: 20 day/a)
Stability	Refrigerated: 30 day(s)
	Frozen (-20 °C): 3 month(s)
1290B Cobalt, Blood	t de la construcción de la const
Summary of Changes	: Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed.
Specimen Requirements	: 2 mL Blood
Transport Temperature	: Refrigerated
Specimen Container	: Royal Blue top tube (Trace metal-free; EDTA)
Light Protection	Not Required
Special Handling	: Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable
Rejection Criteria	<ul> <li>Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).</li> </ul>
Stability	: Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
1290R Cobalt, RBCs	<b>3</b>
Summary of Changes	<ul> <li>Specimen Requirements (Specimen Container) were changed.</li> <li>Specimen Requirements (Rejection Criteria) were changed.</li> <li>Stability was changed.</li> <li>Reference Comment was changed.</li> </ul>



### **Test Changes**

Specimen Requirements:	1 mL RBCs
Transport Temperature:	Refrigerated
Specimen Container:	Green top tube (Sodium Heparin), Light Green top tube (Lithium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
Rejection Criteria:	Received Frozen. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable
Scope of Analysis: Method (CPT Code)	ICP/MS`(83018́): Cobalt

Compound Name	Units	Reference Comment
Cobalt	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 1.5 mcg/L (n=912).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.

#### 1290SP Cobalt, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements:	2 mL Serum or Plasma
Transport Temperature:	Refrigerated
Specimen Container:	Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
Light Protection:	Not Required
Special Handling:	Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
Rejection Criteria:	Polymer gel separation tube (SST or PST).
1290U Cobalt, Urine	
Summary of Changes:	Specimen Requirements were changed. Stability was changed.



## **Test Updates**

Specimen	Requirements:	2 mL Urine	
Transpo	rt Temperature:	Refrigerated	
Specir	men Container:	Plastic container (Acid washed or Trace metal-free)	
L	ight Protection:	Not Required	
Sp	ecial Handling:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.	
Re	jection Criteria:	None	
	Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s)	
1330U	Copper, Urine		
Summa	ary of Changes:	Specimen Requirements were changed. Stability was changed.	
Specimen	Requirements:	2 mL Urine	
Transpor	rt Temperature:	Refrigerated	
Specir	men Container:	Plastic container (Acid washed or Trace metal-free)	
Ľ	ight Protection:	Not Required	
Sp	ecial Handling:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.	
Re	jection Criteria:	None	
	Stability:	Room Temperature: 7 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s)	
8103B	Environmenta	Exposure Screen, Blood (Forensic)	
Summa	ary of Changes:	Specimen Requirements (Rejection Criteria) were changed.	
Specimen	Requirements:	10 mL Blood	
Transpo	rt Temperature:	Refrigerated	
Specir	men Container:	r: Gray top tube (Sodium Fluoride / Potassium Oxalate) AND Roval Blue top tube	
		(Trace metal-free; EDTA)	
L	ight Protection:	Not Required	
Sp	ecial Handling:	Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable. Studies have shown that cyanide has variable instability in biological specimens and is particularly unstable in some postmortem	



## **Test Updates**

## **Test Changes**

Rejection Criteria:	specimens. The loss of cyan laboratory for analysis as soot transportation and preservati tube). Samples should not be increases in cyanide concern and may be due to microbial this possibility. Plastic container. Light Gree (Sodium Heparin). Royal Blue top tube (Sodium Fluoride / I Lavender top tube (EDTA).	ide can be minimized by shipping the sample to the on as possible, preferably using refrigerated or frozen ion using sodium fluoride / potassium oxalate (grey-top e refrozen if previously thawed. The potential for trations, although rare, have also been demonstrated action. Preservation with sodium fluoride may reduce en top tube (Lithium Heparin). Tan top tube - glass ue top tube (Trace metal-free; Sodium Heparin). Gray Potassium Oxalate). Green top tube (Sodium Heparin).	
6303U Firefighter Cor	e Baseline Profile, Urine		
Summary of Changes:	Specimen Requirements we Reference Comment was ch	re changed. anged.	
Specimen Requirements:	5 mL Urine		
Transport Temperature:	Refrigerated		
Specimen Container:	Plastic container (Acid wash	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative- free)	
Light Protection:	Not Required		
Special Handling:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.		
Rejection Criteria:	Received Room Temperature	e.	
Scope of Analysis: Method (CPT Code)	Colorimetry (82570): Creatin ICP/MS (82300, None): Cad ICP/MS (83018): Antimony, A ICP/MS (83825): Mercury, M	ine mium, Cadmium (Creatinine corrected) Antimony (Creatinine corrected) lercury (Creatinine corrected)	
Compound Name	Units	Reference Comment	
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers	
Cadmium (Creatinine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information	
2150B Gallium, Blood	ł		
Summary of Changes:	Specimen Requirements were Stability was changed. Reference Comment was changed was changed.	re changed. anged.	



## **Test Updates**

Specimen Requirements:	2 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	Clotted Blood specimens are not acceptable. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria:	Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium Heparin).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
Scope of Analysis: Method (CPT Code)	ICP/MS`(83018́, None): Gaĺlium

Compound Name	Units	Reference Comment
Gallium	mcg/L	Normally: Less than 1.0 mcg/L.

2150R Gallium, RBCs	
Summary of Changes:	Stability was changed.
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable
2150SP Gallium, Serur	n/Plasma
Summary of Changes:	Specimen Requirements were changed.
Specimen Requirements:	2 mL Serum or Plasma
Transport Temperature:	Refrigerated
Specimen Container:	Plasma: Royal Blue top tube, plastic (Trace metal-free; EDTA), Serum: Royal Blue top tube, plastic (Trace metal-free; No additive)
Light Protection:	Not Required
Special Handling:	Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
Rejection Criteria:	Glass container. Polymer gel separation tube (SST or PST).
2150U Gallium, Urine	
Summary of Changes:	Specimen Requirements were changed. Stability was changed.

LABS

Effective Date: Monday, July 28, 2014

## **Test Updates**

Specimen Requirements:	2 mL Urine	
Transport Temperature:	Refrigerated	
Specimen Container:	Plastic container (Acid washed or Trace metal-free)	
Light Protection:	Not Required	
Special Handling:	Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.	
Rejection Criteria:	None	
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s)	
6210LI General Unkno	own Panel, Liquid	
Summary of Changes:	Scope of Analysis was changed. Silicon and Sodium were removed.	
Scope of Analysis: Method (CPT Code)		
6210SL General Unkno	own Panel, Solid	
Summary of Changes:	Scope of Analysis was changed. Silicon and Sodium were removed.	
Scope of Analysis: Method (CPT Code)		
2241U Heavy Metals	Panel 5A, Urine (CSA)	
Summary of Changes:	Specimen Requirements (Rejection Criteria) were changed. Stability was changed.	
Specimen Requirements:	6 mL Urine	
Transport Temperature:	Refrigerated	
Specimen Container:	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative- free)	
Light Protection:	Not Required	
Special Handling:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Avoid seafood consumption for 48 hours prior to sample collection.	
Rejection Criteria:	Received Room Temperature.	
Stability:	Room Temperature: 5 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 14 day(s)	
6364P Inorganic Pan		



## **Test Updates**

## **Test Changes**

Summary of Changes:	Specimen Requirements Scope of Analysis was cl Order of Reporting was c Methods/CPT Codes we	were changed. hanged. changed. re changed [ICP/MS (82300, 83885)]
Specimen Requirements:	5 mL RBCs	
Transport Temperature:	Refrigerated	
Specimen Container:	Royal Blue top tube (Tra	ce metal-free; EDTA)
Light Protection:	Not Required	
Special Handling:	Avoid seafood consumption for 48 hours prior to sample collection. Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection	
Rejection Criteria:	Received Frozen.	
Scope of Analysis: Method (CPT Code)	ICP/MS (83655): Lead ICP/MS (82175): Arsenic ICP/MS (82108): Aluminum ICP/MS (82300, 83885): Cadmium, Nickel ICP/MS (83825): Mercury	
2492SP Lead, Serum/F	Plasma	
Summary of Changes:	Reference Comment was	s changed.
Scope of Analysis: Method (CPT Code)	ICP/MS (83655): Lead	
Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.
2570B Manganese, B	lood	
Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Reference Comment was changed.	



## **Test Updates**

Specimen Requirements:	2 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	Clotted Blood specimens are not acceptable. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria:	Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Lavender top tube (EDTA). Green top tube (Sodium Heparin).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
Scope of Analysis: Method (CPT Code)	ICP/MS (83785): Manganese

Compound Name	Units	Reference Comment
Manganese	mcg/L	Normally: 5 - 18 mcg/L.

2570R	Manganese, R	BCs
Summa	ary of Changes:	Specimen Requirements (Specimen Container) were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Reference Comment was changed.
Specimen	Requirements:	1 mL RBCs
Transpor	rt Temperature:	Refrigerated
Specir	men Container:	Green top tube (Sodium Heparin), Royal Blue top tube (Trace metal-free; EDTA)
Li	ight Protection:	Not Required
Sp	ecial Handling:	Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.
Rej	jection Criteria:	Received Frozen. Light Green top tube (Lithium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).
	Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable
Sco Metho	ope of Analysis: od (CPT Code)	ICP/MS (83785): Manganese



Compound Name	Units	Reference Comment
Manganese	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 4.7 to 20 mcg/L (n=2022).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
2570U Manganese, U	rine	
Summary of Changes:	Stability was changed. Reference Comment was chang	ged.
Stability:	Room Temperature: 5 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 30 day(s)	
Scope of Analysis: Method (CPT Code)	Colorimetry (82570): Creatinine ICP/MS (83785): Manganese, M	Manganese (Creatinine corrected)
Compound Name	Units	Reference Comment
Manganese (Creatinine corrected)	mcg/g Creat	Normally less than 4 mcg/g creatinine
2697B Metals Acute F	Poisoning Panel, Blood (CSA)	
Summary of Changes:	Specimen Requirements were of Specimen Requirements (Reject Scope of Analysis was changed Order of Reporting was changed Reference Comment was changed	changed. ction Criteria) were changed. I. d. ged.
Specimen Requirements:	7 mL Blood	
Transport Temperature:	Refrigerated	
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)	
Light Protection:	Not Required	
Special Handling: Rejection Criteria:	Clotted Blood specimens are not acceptable. Collect sample in Glass Container (see Specimen Container). Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable. Plastic container. Plastic tube. Glass container. Light Green top tube (Lithium Heparin). Royal Blue top tube glass (Trace metal-free; EDTA). Tan top tube - glass (Sodium Heparin). Pavel Plue ten tube (Trace metal-free; Sodium Heparin). Crave	
	top tube (Sodium Fluoride / Pot Lavender top tube (EDTA).	assium Oxalate). Green top tube (Sodium Heparin).



Scope of Analysis: Method (CPT Code)	ICP/MS (None, 82300): Cadmit Selenium, Vanadium ICP/MS (83018): Antimony ICP/MS (82175): Arsenic ICP/MS (83018): Bismuth ICP/MS (83018): Tellurium ICP/OES (84630): Zinc ICP/OES (82525): Copper ICP/MS (83825): Mercury	um, Chromium, Cobalt, Molybdenum, Nickel,
Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers.
		Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides.
		Please contact NMS Labs if you need assistance in supplying your state with the required information.
6153R Metals Panel 1	, RBCs	
Summary of Changes:	Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Reference Comment was changed.	
Specimen Requirements:	8 mL RBCs	
Transport Temperature:	Refrigerated	
Specimen Container:	Green top tube (Sodium Heparin), Light Green top tube (Lithium Heparin), Royal Blue top tube (Trace metal-free; EDTA)	
Light Protection:	Not Required	
Special Handling:	Submit in container with a non-Potassium based preservative/anticoagulant. Tubes containing Potassium based preservatives/anticoagulants are not acceptable. Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.	
Rejection Criteria:	Received Room Temperature. Citrate). Gray top tube (Sodiun (EDTA). Yellow top tube (ACD	Received Frozen. Light Blue top tube (Sodium n Fluoride / Potassium Oxalate). Lavender top tube - Acid Citrate Dextrose).
Stability:	Room Temperature: Not Stable Refrigerated: 14 day(s) Frozen (-20 °C): Not Stable	,
Scope of Analysis: Method (CPT Code)	ICP/MS (82495): Chromium ICP/OES (84630): Zinc ICP/OES (82525): Copper ICP/OES (84132): Potassium ICP/OES (83735): Magnesium ICP/OES (82310): Calcium	



### **Test Changes**

Compound Name	Units	Reference Comment
Calcium	mg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is <rl (n="1091).&lt;br" 2.3="" dl="" mg="" to="">The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mg/dL units.</rl>
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Copper	mcg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 59 - 91 mcg/dL (n=1999). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/dL units.
Magnesium	mg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 4.2 - 5.9 mg/dL (n=2812). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mg/dL units.
Potassium	mEq/L	NMS Labs derived data for 2.5th - 97.5th percentile range is 82 - 100 mEq/L (n=541). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mEq/L units.
Zinc	mcg/dL	NMS Labs derived data for 2.5th - 97.5th percentile range is 794 - 1470 mcg/dL (n=2940). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/dL units.

#### 2664UH Metals Panel 4 (Arsenic, Cadmium, Lead, Mercury), 24 Hour Urine

Summary of Changes:	Stability was changed. Reference Comment was changed.
Stability:	Room Temperature: 7 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 14 day(s)



Scope of Method (C	Analysis: PT Code)	ICP/MS (82175): Urine Volume, Arsenic, Arsenic (Urine Volume corrected) ICP/MS (83655): Urine Volume, Lead, Lead (Urine Volume corrected) ICP/MS (82300, None): Urine Volume, Cadmium, Cadmium (Urine Volume corrected)	
		ICP/MS (83825): Urine Volume	e, Mercury, Mercury (Urine Volume corrected)
Compound Nam	ne	Units	Reference Comment
Cadmium		mcg/L	Normally less than 1 mcg/L May be elevated in smokers
2664U Meta	lls Panel 4	(Arsenic, Cadmium, Lead, Me	ercury), Urine
Summary of	Changes:	Reference Comment was chan	iged.
Scope of Method (C	<sup>-</sup> Analysis: PT Code)	Colorimetry (82570): Creatinine ICP/MS (82175): Arsenic, Arsenic (Creatinine corrected) ICP/MS (82300, None): Cadmium, Cadmium (Creatinine corrected) ICP/MS (83655): Lead, Lead (Creatinine corrected) ICP/MS (83825): Mercury, Mercury (Creatinine corrected)	
Compound Nam	ne	Units	Reference Comment
Cadmium		mcg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creati	inine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information
2693B Meta	ls/Metallo	ids Acute Poisoning Panel, Bl	ood
Summary of	Changes:	Specimen Requirements were Specimen Requirements (Reje	changed. ction Criteria) were changed.
Specimen Requ	lirements:	6 ml Blood	
Transport Terr	nperature:	Refrigerated	
Specimen C	Container:	Royal Blue ton tube (Trace metal-free: EDTA)	
Light P	Protection:	Not Required	
Special	Handling:	Clotted Blood specimens are not acceptable. Collect sample in Glass Container (see Specimen Container). Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.	
2602D Moto	ls/Motalla	(Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).	
		IUS AUUR FUISOIIIIU FAIIRI. KE	



## **Test Updates**

### **Test Changes**

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Summary of Changes:	Specimen Requirements were Specimen Requirements (Spec Specimen Requirements (Rejec Reference Comment was change	changed. imen Container) were changed. ction Criteria) were changed. ged.
Specimen Requirements:	9 mL RBCs	
Transport Temperature:	Refrigerated	
Specimen Container:	Green top tube (Sodium Hepari	n). Roval Blue top tube (Trace metal-free: EDTA)
Light Protection:	Not Required	,,,,,,,,,
Special Handling:	Collect sample in Glass Container (see Specimen Container). Avoid seafood consumption for 48 hours prior to sample collection. Centrifuge and	
Rejection Criteria:	Received Frozen. Plastic container. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA)	
Scope of Analysis: Method (CPT Code)	ICP/MS (83655): Lead ICP/MS (82175): Arsenic ICP/MS (83018): Bismuth ICP/MS (83825): Mercury ICP/MS (84255): Selenium ICP/MS (83018): Thallium ICP/MS (83018): Antimony	
Compound Name	Units	Reference Comment
Selenium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656). The RBC sample used for analysis was measured by weight
		and multiplied by the density of human RBC (1.10 g/mL)

#### 2693SP Metals/Metalloids Acute Poisoning Panel, Serum/Plasma

Summary of Changes: Reference Comment was changed.

Scope of Analysis:	ICP/MS (82175): Arsenic		
Method (CPT Code)	ICP/MS (83018): Bismuth		
	ICP/MS (83825): Mercury		
	ICP/MS (84255): Selenium		
	ICP/MS (83655): Lead		
	ICP/MS (83018): Antimony		
	ICP/MS (83018): Thallium		
Compound Name	Units	Reference Comment	
Lead	mcg/dL	Normally less than 0.5 mcg/dL.	

to obtain mcg/L units.



## **Test Changes**

3782LI Metals/Metallo	oids Panel (General Unknown),	Liquid
Summary of Changes:	Scope of Analysis was changed Silicon and Sodium were remov	ł. /ed.
Scope of Analysis: Method (CPT Code)	ICP/MS (None): Aluminum, Anti Cadmium, Calcium, Cesium, Cl Indium, Iron, Lead, Lithium, Ma Palladium, Platinum, Potassium Titanium, Tungsten, Uranium, V	imony, Arsenic, Barium, Beryllium, Bismuth, Boron, hromium, Cobalt, Copper, Gallium, Germanium, Gold, gnesium, Manganese, Mercury, Molybdenum, Nickel, h, Selenium, Silver, Strontium, Tellurium, Thallium, Tin, /anadium, Zinc
3782SL Metals/Metallo	oids Panel (General Unknown),	Solid
Summary of Changes:	Scope of Analysis was changed Silicon and Sodium were remove	ł. ved.
Scope of Analysis: Method (CPT Code)	ICP/MS (None, None): Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Gallium, Germanium, Gold, Indium, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Palladium, Platinum, Potassium, Selenium, Silver, Strontium, Tellurium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc,	
2661SP Metals/Metallo	oids Panel 1, Serum/Plasma	
Summary of Changes:	Reference Comment was chan	ged.
Scope of Analysis: Method (CPT Code)	ICP/MS (83655): Lead ICP/MS (82175): Arsenic ICP/MS (83825): Mercury	
Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.
2662B Metals/Metallo	oids Panel 2, Blood	
Summary of Changes:	Specimen Requirements were of Specimen Requirements (Reject Stability was changed. Reference Comment was chan	changed. ction Criteria) were changed. ged.

Methods/CPT Codes were changed [ICP/MS (82300, 83785, 83885)]



### **Test Changes**

Specimen Requirements:	2 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	Clotted Blood specimens are not acceptable. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria:	Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 30 day(s)
Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Thallium ICP/MS (82300, 83785, 83885): Cadmium, Manganese, Nickel

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers.
		Refer to the OSHA website for workplace information.

Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides.

Please contact NMS Labs if you need assistance in supplying your state with the required information.

#### 2662SP Metals/Metalloids Panel 2, Serum/Plasma

Summary of Changes: Methods/CPT Codes were changed [ICP/MS (82300, 83785, 83885)]

Scope of Analysis: ICP/MS (83018): Thallium Method (CPT Code) ICP/MS (82300, 83785, 83885): Cadmium, Manganese, Nickel

#### 2662U Metals/Metalloids Panel 2, Urine

Summary of Changes:	Stability was changed. Reference Comment was changed. Methods/CPT Codes were changed [ICP/MS (82300,83785,83885)]
Stability:	Room Temperature: 5 day(s)
	Refrigerated: 14 day(s)
	Frozen (-20 °C): 30 day(s)



# Test Changes

Scope of Analysis: Method (CPT Code)	Colorime ICP/MS ( ICP/MS ( Mangane	etry (82570): Creatinine (83018): Thallium, Thal (82300,83785,83885): ese, Manganese (Creat	llium (Creatinine corrected) Cadmium, Cadmium (Creatinine corrected), tinine corrected), Nickel, Nickel (Creatinine corrected)
Compound Name	ι	Jnits	Reference Comment
Cadmium	r	ncg/L	Normally less than 1 mcg/L May be elevated in smokers
Cadmium (Creatinine corre	cted) n	ncg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information
Manganese (Creatinine corrected)	r	ncg/g Creat	Normally less than 4 mcg/g Creatinine.
Nickel (Creatinine corrected	1) n	ncg/g Creat	Normally less than 4 mcg/g creatinine.
2663B Metals/Metallo	ids Panel	3, Blood	
Summary of Changes:	Specime Scope of Order of Referenc	n Requirements (Reject Analysis was changed Reporting was change the Comment was change	ction Criteria) were changed. I. d. ged.
Specimen Requirements:	5 mL Blo	od	
Transport Temperature:	Refrigerated		
Specimen Container:	Royal Blu	ue top tube (Trace meta	al-free; EDTA)
Light Protection:	Yes		
Special Handling:	Clotted Blood specimens are not acceptable. Avoid seafood consumption for 48 hours prior to sample collection. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.		
Rejection Criteria:	Not received Light Protected. Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).		
Scope of Analysis: Method (CPT Code)	ICP/MS (None, 82300): Cadmium, Chromium H (84202): ZPP ICP/MS (83655): Lead ICP/MS (82175): Arsenic ICP/MS (83825): Mercury		



## **Test Changes**

Compound Name	Units	Reference Comment
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers.
		Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides.
		Please contact NMS Labs if you need assistance in supplying your state with the required information.
2663SP Metals/Metallo	ids Panel 3, Serum/Plasma	
Summary of Changes:	Reference Comment was chan Methods/CPT Codes were cha	ged. nged [ICP/MS (82300, 82495)]
Scope of Analysis: Method (CPT Code)	ICP/MS (82175): Arsenic ICP/MS (82300, 82495): Cadm ICP/MS (83825): Mercury ICP/MS (83655): Lead	ium, Chromium
Compound Name	Units	Reference Comment
Lead	mcg/dL	Normally less than 0.5 mcg/dL.
2663U Metals/Metallo	ids Panel 3, Urine	
Summary of Changes:	Specimen Requirements were Specimen Requirements (Reje Stability was changed. Reference Comment was chan	changed. ction Criteria) were changed. ged.
Specimen Requirements:	5 mL Urine	
Transport Temperature:	Refrigerated	
Specimen Container:	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative- free)	
Light Protection:	Not Required	
Special Handling:	Unpreserved urine should be recollection. Acceptable preservation Nitric Acid (0.1 mL of 12M acid, contrast media for 48 hours prior to sample co	efrigerated immediately and analyzed within 1 week of tives include: Trace Metal Free Hydrochloric Acid or /10 mL urine). Avoid exposure to gadolinium-based or to sample collection. Avoid seafood consumption llection.
Rejection Criteria: Stability:	Received Room Temperature. Room Temperature: 5 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 14 day(s)	



Scope of Analysis: Method (CPT Code)	Colorimetry (82570): Creatinine ICP/MS (82175): Arsenic, Arsenic (Creatinine corrected) ICP/MS (83655): Lead, Lead (Creatinine corrected) ICP/MS (None, 82300): Cadmium, Cadmium (Creatinine corrected), Chromium, Chromium (Creatinine corrected) ICP/MS (83825): Mercury, Mercury (Creatinine corrected)		
Compound Name	Units	Reference Comment	
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers	
Cadmium (Creatinine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information	
6311B Metals/Metallo	ids Panel, Blood (CSA)		
Summary of Changes:	Specimen Requirements were Reference Comment was chan	changed. nged.	
Specimen Requirements:	3 mL Blood		
Transport Temperature:	Refrigerated		
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)		
Light Protection:	Not Required		
Special Handling: Rejection Criteria:	Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium		
Scope of Analysis: Method (CPT Code)	Heparin). ICP/MS (83825): Mercury ICP/MS (82300, None): Cadmium ICP/MS (83018): Tellurium		
Compound Name	Units	Reference Comment	
Cadmium	mcg/L	Normally: Less than 3 mcg/L. May be elevated in smokers. Refer to the OSHA website for workplace information. Various states require that Blood Cadmium levels above certain cutoffs must be reported to the state in which the patient resides. Please contact NMS Labs if you need assistance in supplying your state with the required information.	
2240U Metals/Metallo	ids Panel, Urine (CSA)		



## **Test Updates**

## **Test Changes**

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Summary of Changes:	Specimen Requirements were Stability was changed. Reference Comment was chan	changed. ged.	
Specimen Requirements:			
Transport Tomporature			
transport temperature.	Reingeraled		
Specimen Container:	Plastic container (Acid washed free)	or Trace metal-free), Plastic container (preservative-	
Light Protection:	Not Required		
Special Handling:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.		
Rejection Criteria:	Received Room Temperature.		
Stability:	Room Temperature: 5 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 14 day(s)		
Scope of Analysis:	Colorimetry (82570): Creatinine		
Method (CPT Code)	ICP/MS (83018): Bismuth		
	ICP/MS (82175): Arsenic, Total Inorganic, Arsenic, Total Inorganic (Creatinine corrected)		
	ICP/MS (None, 82495, 82300): Cadmium, Cadmium (Creatinine corrected)		
	ICP/MS (83018): Beryllium, Beryllium (Creatinine corrected)		
	ICP/MS (83825): Mercury, Mercury (Creatinine corrected)		
	ICP/MS (None, 82495, 82300):	Chromium, Chromium (Creatinine corrected)	
Compound Name	Units	Reference Comment	
Cadmium	mcg/L	Normally less than 1 mcg/L	
		May be elevated in smokers	
Cadmium (Creatinine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information	

#### 3069R Mineral Profile (7), RBCs

Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Specimen Container) were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Scope of Analysis was changed. Order of Reporting was changed. Reference Comment was changed. Methods/CPT Codes were changed [ICP/MS (82495, 83018x2, 83785, 84255)]
	04233)j



Chromium	mog/l	NMS Laba dariyad data:
Compound Name	Units	Reference Comment
	ICP/OES (82525): Copper	
	ICP/OES (84630): Zinc	
Method (CPT Code)	Molybdenum, Selenium	-
Scope of Analysis:	ICP/MS (82495, 83018x2, 8378	5, 84255): Chromium, Cobalt, Manganese,
	Frozen (-20 °C): Not Stable	
	Refrigerated: 14 day(s)	
Stability:	Room Temperature: Not Stable	
	Lavender top tube (EDTA).	
	Fluoride / Potassium Oxalate).	Yellow top tube (ACD - Acid Citrate Dextrose).
Rejection Chiena.	tube (Lithium Heparin) Light B	lue top tube (Sodium Citrate) Grav top tube (Sodium
Poloction Critoria:	Received Room Temperature	Pacaivad Frazan Plastic containar Light Graan tan
Special Handling:	Centrifuge and separate RBCs	into an acid washed plastic screw capped vial within
Light Protection	Not Required	, <b>,</b> , , , ,
Specimen Container:	Green top tube (Sodium Hepari	n) AND Royal Blue top tube (Trace metal-free; EDTA)
Transport Temperature:	Refrigerated	
Specimen Requirements:	4 mL RBCs	

Compound Name	Units	Reference Comment
Chromium	mcg/L	NMS Labs derived data:
		2.5th - 97.5th percentile range is
		<1.0 to 3.1 mcg/L (n=3019).
		The RBC sample used for analysis was measured by weight
		and multiplied by the density of human RBC (1.10 g/mL)
		to obtain mcg/L units.
Copper	mcg/dL	NMS Labs derived data for 2.5th - 97.5th percentile
		range is 59 - 91 mcg/dL (n=1999).
		and multiplied by the density of human PBC (1.10 g/ml.)
		to obtain mcg/dL units.
Cobalt	mcg/L	NMS Labs derived data:
		2.5th - 97.5th percentile range is
		< 1.0 to 1.5 mcg/L (n=912).
		The RBC sample used for analysis was measured by weight
		and multiplied by the density of human RBC (1.10 g/mL)
		to obtain mcg/L units.
Manganese	mca/L	NMS Labs derived data:
		2.5th - 97.5th percentile range is
		4.7 to 20 mcg/L (n=2022).
		The RBC sample used for analysis was measured by weight
		and multiplied by the density of human RBC (1.10 g/mL)
		to obtain mcg/L units.



Compound Name	Units	Reference Comment
Molybdenum	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 2.6 mcg/L (n=956).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Selenium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
3066B Mineral Profile	e, Blood	
Summary of Changes:	Specimen Requirements wer Specimen Requirements (Re Stability was changed. Scope of Analysis was chang Order of Reporting was chang Methods/CPT Codes were ch 84255)]	e changed. jection Criteria) were changed. ed. ged. hanged [ICP/MS (82495, 83018x2, 83785,
Specimen Requirements:	3 mL Blood	
Transport Temperature:	Refrigerated	
Specimen Container:	Roval Blue top tube (Trace m	etal-free: EDTA)
Light Protection:	Not Required	
Special Handling:	For Magnesium testing, pleas Submit in container with a no	se order Magnesium test 2551. n-Heparin based anticoagulant. Tubes containing
Rejection Criteria:	Plastic container. Plastic tube top tube glass (Trace metal-fr Royal Blue top tube (Trace m Fluoride / Potassium Oxalate tube (EDTA).	e. Light Green top tube (Lithium Heparin). Royal Blue ree; EDTA). Tan top tube - glass (Sodium Heparin). retal-free; Sodium Heparin). Gray top tube (Sodium ). Green top tube (Sodium Heparin). Lavender top
Stability:	Room Temperature: 30 day(s Refrigerated: 30 day(s) Frozen (-20 °C): 30 day(s)	)
Scope of Analysis: Method (CPT Code)	ICP/MS (82495, 83018x2, 83 Molybdenum, Selenium ICP/OES (84630): Zinc ICP/OES (82525): Copper	785, 84255): Chromium, Cobalt, Manganese,
3066R Mineral Profile	, RBCs	



**Test Updates** 

Summary of Changes:	Specimen Requirements were Specimen Requirements (Reje Stability was changed. Scope of Analysis was change Order of Reporting was change Reference Comment was chan Methods/CPT Codes were cha 84255)]	changed. ction Criteria) were changed. d. ed. nged. nged [ICP/MS (82495, 83018x2, 83785,
Specimen Requirements:	5 mL RBCs	
Transport Temperature:	Refrigerated	
Specimen Container:	Green top tube (Sodium Hepar	in) AND Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required	
Special Handling:	Centrifuge and separate RBCs	into an acid washed plastic screw capped vial within
Rejection Criteria:	two hours of collection. Received Room Temperature. Received Frozen. Plastic container. Light Green top tube (Lithium Heparin). Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose).	
Stability:	Room Temperature: Not Stable Refrigerated: 14 day(s) Frozen (-20 °C): Not Stable	
Scope of Analysis: Method (CPT Code)	ICP/MS (82495, 83018x2, 837) Molybdenum, Selenium ICP/OES (84630): Zinc ICP/OES (82525): Copper ICP/OES (83735): Magnesium	85, 84255): Chromium, Cobalt, Manganese,
Compound Name	Units	Reference Comment
Chromium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 3.1 mcg/L (n=3019). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Cobalt	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 1.5 mcg/L (n=912).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.



## **Test Changes**

Compound Name	Units	Reference Comment
Manganese	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 4.7 to 20 mcg/L (n=2022).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Molybdenum	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 2.6 mcg/L (n=956).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Selenium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.
Mineral Profile	e, Serum/Plasma	
Summary of Changes:	Methods/CPT Codes w 84255)]	ere changed [ICP/MS (82495, 83018x2, 83785,
Scope of Analysis: Method (CPT Code)	ICP/MS (82495, 83018x2, 83785, 84255): Chromium, Cobalt, Manganese, Molybdenum, Selenium ICP/OES (84630): Zinc ICP/OES (82525): Copper	
Molybdenum,	Blood	
Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed.	

Stability was changed.



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Specimen Requirements:	2 mL Blood	
Transport Temperature:	Refrigerated	
Specimen Container:	Royal Blue top tube (Trace meta	al-free; EDTA)
Light Protection:	Not Required	
Special Handling: Rejection Criteria:	Clotted Blood specimens are no Submit in container with a non-I Heparin based anticoagulants a Plastic tube. Light Green top tu (Trace metal-free; EDTA). Tan (Sodium Fluoride / Potassium C	it acceptable. Heparin based anticoagulant. Tubes containing re not acceptable. be (Lithium Heparin). Royal Blue top tube glass op tube - glass (Sodium Heparin). Gray top tube exalate). Green top tube (Sodium Heparin).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)	
3090R Molybdenum,	RBCs	
Summary of Changes:	Specimen Requirements (Spec Specimen Requirements (Rejec Stability was changed. Reference Comment was changed	men Container) were changed. tion Criteria) were changed. ged.
Specimen Requirements:	1 mL RBCs	
Transport Temperature:	Refrigerated	
Specimen Container:	Green top tube (Sodium Hepari	n) Roval Blue top tube (Trace metal-free: EDTA)
Light Protection:	Not Required	
Special Handling:	Centrifuge and separate RBCs two hours of collection.	nto an acid washed plastic screw capped vial within
Rejection Criteria:	Received Frozen. Light Blue to Fluoride / Potassium Oxalate). Lavender top tube (EDTA).	p tube (Sodium Citrate). Gray top tube (Sodium Yellow top tube (ACD - Acid Citrate Dextrose).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable	
Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Molybdenum	
Compound Nome		

Compound Name	Units	Reference Comment
Molybdenum	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is <1.0 to 2.6 mcg/L (n=956).
		The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL) to obtain mcg/L units.



3090SP Molybdenum, Serum/Plasma		
Summary of Changes:	Specimen Requirements were	changed.
Specimen Requirements:	2 mL Serum or Plasma	
Transport Temperature:	Refrigerated	
Specimen Container: Light Protection:	Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive) Not Required	
Special Handling:	Promptly centrifuge and separate Serum or Plasma into an acid washed plastic	
Rejection Criteria:	Gray top tube (Sodium Fluoride (SST or PST).	e / Potassium Oxalate). Polymer gel separation tube
3090U Molybdenum,	Urine	
Summary of Changes:	Specimen Requirements were Stability was changed. Reference Comment was char	changed. nged.
Specimen Requirements:	3 mL Urine	
Transport Temperature:	Refrigerated	
Specimen Container:	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative- free)	
Light Protection:	Not Required	
Special Handling:	Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.	
Rejection Criteria:	Received Room Temperature.	
Stability: Scope of Analysis: Method (CPT Code)	Room Temperature: 5 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 30 day(s) Colorimetry (82570): Creatinine	
	linite	Reference Comment
		Normally: Less than 160 mcg/l
Molybacham	mog/L	Normally: 2000 that 100 mog/2.
Molybdenum (Creatinine corrected)	mcg/g Creat	Normally: Less than 150 mcg/g creatinine.
3140B Nickel, Blood		
Summary of Changes:	Specimen Requirements were Specimen Requirements (Reje Stability was changed.	changed. ction Criteria) were changed.

# **Test Updates**



## **Test Changes**

Light Protection: Special Handling: Rejection Criteria: Scope of Analysis: Method (CPT Code) Compound Name	Tree)Not RequiredUnpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Received Room Temperature.Colorimetry (82570): Creatinine ICP/MS (83885): Nickel, Nickel (Creatinine corrected)UnitsReference Comment
Light Protection: Special Handling: Rejection Criteria: Scope of Analysis: Method (CPT Code)	Not Required Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Received Room Temperature. Colorimetry (82570): Creatinine ICP/MS (83885): Nickel, Nickel (Creatinine corrected)
Light Protection: Special Handling: Rejection Criteria:	Not Required Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Received Room Temperature.
Light Protection: Special Handling:	Tree) Not Required Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or
Light Protection:	rree) Not Required
opecimen container.	
Specimen Container	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative-
Transport Temperature:	Refrigerated
Specimen Requirements:	3 mL Urine
Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Specimen Container) were changed. Reference Comment was changed.
3140U Nickel, Urine	
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): Not Stable
Summary of Changes:	Stability was changed.
3140R Nickel, RBCs	
Stability:	top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA). Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
Rejection Criteria:	Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable. Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray
Special Handling:	Clotted Blood specimens are not acceptable.
Light Protection:	Not Required
Specimen Container	Refrigerated
Transport Temperature:	



4124B Rubidium, Bl	od	
Summary of Changes:	Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Reference Comment was changed. Methods/CPT Codes were changed [ICP/MS (83018)]	
Specimen Requirements:	2 mL Blood	
Transport Temperature:	Refrigerated	
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)	
Light Protection:	Not Required	
Special Handling:	Clotted Blood specimens are not acceptable. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.	
Rejection Criteria:	Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).	
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s)	
Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Rubidium	
	Units Reference Comment	
Compound Name	Units Reference Comment	
Compound Name Rubidium	Units         Reference Comment           mcg/dL         Normally: 100 - 400 mcg/dL.	
Compound Name Rubidium 4124R Rubidium, RE	Units         Reference Comment           mcg/dL         Normally: 100 - 400 mcg/dL.           Cs         Cs	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:	Units     Reference Comment       mcg/dL     Normally: 100 - 400 mcg/dL.       Cs     Specimen Requirements were changed.       Stability was changed.     Methods/CPT Codes were changed [ICP/MS (83018)]	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:	Units     Reference Comment       mcg/dL     Normally: 100 - 400 mcg/dL.       Cs     Specimen Requirements were changed.       Stability was changed.     Methods/CPT Codes were changed [ICP/MS (83018)]	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:         Specimen Requirements:	Units     Reference Comment       mcg/dL     Normally: 100 - 400 mcg/dL.       Cs     Specimen Requirements were changed.       Stability was changed.     Methods/CPT Codes were changed [ICP/MS (83018)]       1 mL RBCs	
Compound Name Rubidium 4124R Rubidium, RE Summary of Changes: Specimen Requirements: Transport Temperature:	Units     Reference Comment       mcg/dL     Normally: 100 - 400 mcg/dL.       Cs     Specimen Requirements were changed.       Stability was changed.     Methods/CPT Codes were changed [ICP/MS (83018)]       1 mL RBCs     Refrigerated	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:         Specimen Requirements:         Transport Temperature:         Specimen Container:	Units       Reference Comment         mcg/dL       Normally: 100 - 400 mcg/dL.         Cs       Specimen Requirements were changed.         Stability was changed.       Methods/CPT Codes were changed [ICP/MS (83018)]         1 mL RBCs       Refrigerated         Royal Blue top tube (Trace metal-free; EDTA)	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:         Specimen Requirements:         Transport Temperature:         Specimen Container:         Light Protection:	Units       Reference Comment         mcg/dL       Normally: 100 - 400 mcg/dL.         Cs       Specimen Requirements were changed.         Stability was changed.       Methods/CPT Codes were changed [ICP/MS (83018)]         1 mL RBCs       Refrigerated         Royal Blue top tube (Trace metal-free; EDTA)       Not Required         0 trifference       DD0 interesting the stability interest	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:         Specimen Requirements:         Transport Temperature:         Specimen Container:         Light Protection:         Special Handling:	Units       Reference Comment         mcg/dL       Normally: 100 - 400 mcg/dL.         Cs       Specimen Requirements were changed. Stability was changed. Methods/CPT Codes were changed [ICP/MS (83018)]         1 mL RBCs Refrigerated Royal Blue top tube (Trace metal-free; EDTA) Not Required Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:         Specimen Requirements:         Transport Temperature:         Specimen Container:         Light Protection:         Special Handling:         Rejection Criteria:	Units       Reference Comment         mcg/dL       Normally: 100 - 400 mcg/dL.         Cs       Specimen Requirements were changed. Stability was changed. Methods/CPT Codes were changed [ICP/MS (83018)]         1 mL RBCs       Refrigerated         Royal Blue top tube (Trace metal-free; EDTA)       Not Required         Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection. Received Frozen.	
Compound Name         Rubidium         4124R       Rubidium, RE         Summary of Changes:         Specimen Requirements:         Transport Temperature:         Specimen Container:         Light Protection:         Special Handling:         Rejection Criteria:         Stability:	Units       Reference Comment         mcg/dL       Normally: 100 - 400 mcg/dL.         Cs       Specimen Requirements were changed.         Stability was changed.       Methods/CPT Codes were changed [ICP/MS (83018)]         1 mL RBCs       Refrigerated         Royal Blue top tube (Trace metal-free; EDTA)       Not Required         Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.       Received Frozen.         Room Temperature: 30 day(s)       Refrigerated: 30 day(s)       Frozen (-20 °C): Not Stable	



4124SP Rubidium, Se	rum/Plasma
Summary of Changes:	Specimen Requirements were changed.
Specimen Requirements:	2 mL Serum or Plasma
Specimen Container:	Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)
Light Protection:	Not Required
Special Handling:	Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.
Rejection Criteria:	Plastic container. Gray top tube (Sodium Fluoride / Potassium Oxalate). Polymer gel separation tube (SST or PST). Lavender top tube (EDTA).
4124U Rubidium, Uri	ne
Summary of Changes:	Stability was changed. Methods/CPT Codes were changed [ICP/MS (83018)]
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s)
Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Rubidium
4180B Selenium, Blo	od
Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed.
Specimen Requirements:	2 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)
Light Protection:	Not Required
Special Handling:	Clotted Blood specimens are not acceptable. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
Rejection Criteria:	Plastic container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin). Lavender top tube (EDTA).
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)
4180R Selenium, RB	Cs





### **Test Changes**

Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Specimen Container) were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Reference Comment was changed.		
Specimen Requirements:	1 mL RBCs		
Transport Temperature:	Refrigerated		
Specimen Container:	Green top tube (Sodium Heparin), Royal Blue top tube (Trace metal-free; EDTA)		
Light Protection:	Not Required		
Special Handling:	Centrifuge and separate RBCs into an acid washed plastic screw capped vial within two hours of collection.		
Rejection Criteria:	Received Frozen. Plastic container. Light Blue top tube (Sodium Citrate). Gray top tube (Sodium Fluoride / Potassium Oxalate). Yellow top tube (ACD - Acid Citrate Dextrose). Lavender top tube (EDTA).		
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s)		
Scope of Analysis: Method (CPT Code)	ICP/MS (84255): Selenium		
Compound Name	Units	Reference Comment	
Selenium	mcg/L	NMS Labs derived data: 2.5th - 97.5th percentile range is 110 - 330 mcg/L (N=1656). The RBC sample used for analysis was measured by weight and multiplied by the density of human RBC (1.10 g/mL)	
		to obtain mcg/L units.	
4180SP Selenium, Ser	um/Plasma	to obtain mcg/L units.	
<b>4180SP</b> Selenium, Sere Summary of Changes:	u <b>m/Plasma</b> Specimen Requirements were o	to obtain mcg/L units.	
4180SP Selenium, Ser Summary of Changes: Specimen Requirements:	u <b>m/Plasma</b> Specimen Requirements were o 2 mL Serum or Plasma	to obtain mcg/L units.	
4180SP Selenium, Serr Summary of Changes: Specimen Requirements: Transport Temperature:	um/Plasma Specimen Requirements were of 2 mL Serum or Plasma Refrigerated	to obtain mcg/L units.	
4180SP Selenium, Serr Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container:	um/Plasma Specimen Requirements were of 2 mL Serum or Plasma Refrigerated Plasma: Royal Blue top tube (T (Trace metal-free; No additive)	to obtain mcg/L units. changed. race metal-free; EDTA), Serum: Royal Blue top tube	
4180SP Selenium, Serr Summary of Changes: Specimen Requirements: Transport Temperature: Specimen Container: Light Protection:	um/Plasma Specimen Requirements were of 2 mL Serum or Plasma Refrigerated Plasma: Royal Blue top tube (T (Trace metal-free; No additive) Not Required	to obtain mcg/L units.	

#### 6317U Semi Conductor Panel, Urine

## **Test Updates**



### **Test Changes**

Summary of Changes:	Specimen Requirements were changed. Scope of Analysis was changed. Order of Reporting was changed. Reference Comment was changed. Methods/CPT Codes were changed [ICP/MS (82300, 84255)]		
Specimen Requirements:	5 ml Urine		
Transport Temperature:	Refrigerated		
Specimen Container:	Plastic container (Acid washed or Trace metal-free), Plastic container (preservative- free)		
Light Protection:	Not Required		
Special Handling:	Unpreserved urine should be refrigerated immediately and analyzed within 1 week of collection. Acceptable preservatives include: Trace Metal Free Hydrochloric Acid or Nitric Acid (0.1 mL of 12M acid/10 mL urine). Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection. Avoid seafood consumption for 48 hours prior to sample collection.		
Rejection Criteria:	Received Room Temperature.		
Scope of Analysis: Method (CPT Code)	Colorimetry (82570): Creatinine ICP/MS (82175): Arsenic, Arsenic (Creatinine corrected) ICP/MS (82300, 84255): Cadmium, Cadmium (Creatinine corrected), Selenium, Selenium (Creatinine corrected) ICP/MS (83018): Tellurium ICP/MS (83825): Mercury, Mercury (Creatinine corrected)		
Compound Name	Units	Reference Comment	
Cadmium	mcg/L	Normally less than 1 mcg/L May be elevated in smokers	
Arsenic (Creatinine correcte	ed) mcg/g Creat	[Reference comment removed]	
Cadmium (Creatinine corre	cted) mcg/g Creat	Normally less than 1 mcg/g creatinine Refer to OSHA website for workplace information	

#### 4478SP Thorium, Serum/Plasma

Summary of Changes: Reference Comment was changed.

Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Thorium	
Compound Name	Units	Reference Comment
Thorium	mcg/L	Normally: Less than 0.5 mcg/L.

#### 4765B Vanadium, Blood

# **Test Updates**



## **Test Changes**

Summary of Changes:	Specimen Requirements were changed. Specimen Requirements (Rejection Criteria) were changed. Stability was changed. Methods/CPT Codes were changed [ICP/MS (83018)]	
Specimen Requirements:	2 mL Blood	
Transport Temperature:	Refrigerated	
Specimen Container:	Royal Blue top tube (Trace metal-free; EDTA)	
Light Protection:	Not Required	
Special Handling:	Clotted Blood specimens are not acceptable. Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.	
Rejection Criteria:	Glass container. Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin). Royal Blue top tube (Trace metal-free; Sodium Heparin). Gray top tube (Sodium Fluoride / Potassium Oxalate). Green top tube (Sodium Heparin).	
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s) Frozen (-20 °C): 3 month(s) Frozen (-70 °C): 6 month(s)	
Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Vanadium	
4765R Vanadium, RB	Cs	
Summary of Changes:	Stability was changed. Methods/CPT Codes were changed [ICP/MS (83018)]	
Stability:	Room Temperature: 30 day(s) Refrigerated: 30 day(s)	
Scope of Analysis: Method (CPT Code)	ICP/MS (83018): Vanadium	
4765SP Vanadium, Ser	um/Plasma	
Summary of Changes:	Specimen Requirements were changed.	
Specimen Requirements:	2 mL Serum or Plasma	
Transport Temperature:	Refrigerated	
Specimen Container:	Plasma: Royal Blue top tube, plastic (Trace metal-free; EDTA), Serum: Royal Blue top tube, plastic (Trace metal-free; No additive)	
Light Protection:	Not Required	
Special Handling:	Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.	
Rejection Criteria:	Glass container. Polymer gel separation tube (SST or PST).	



## **Test Updates**

## **Test Changes**

4765U Vanadium, Uri	ne	
Summary of Changes:	Stability was changed. Reference Comment was chang Methods/CPT Codes were char	ged. nged [ICP/MS (83018)]
Stability:	Room Temperature: 5 day(s) Refrigerated: 30 day(s)	
Scope of Analysis: Method (CPT Code)	Colorimetry (82570): Creatinine ICP/MS (83018): Vanadium, Va	nadium (Creatinine corrected)
Compound Name	Units	Reference Comment
Vanadium	mcg/L	Normally: Less than 1 mcg/L.



### **Discontinued Tests**

Test Code	Test Name	Alternative Test
1781SP	Diquat, Serum/Plasma	No Alternate Tests Available
1781U	Diquat, Urine	No Alternate Tests Available
2231B	ICP/MS Panel, Blood (Forensic)	No Alternate Tests Available
2231H	ICP/MS Panel, Hair (Forensic)	No Alternate Tests Available
2231SP	ICP/MS Panel, Serum/Plasma (Forensic)	No Alternate Tests Available
2231TI	ICP/MS Panel, Tissue (Forensic)	No Alternate Tests Available
2231U	ICP/MS Panel, Urine (Forensic)	No Alternate Tests Available
3340SP	Paraquat, Serum/Plasma	No Alternate Tests Available
3340U	Paraquat, Urine	No Alternate Tests Available