On April 15th, 2025, ChristianaCare lab systemwide (Newark, Wilmington, Middletown, Cecil and Helen F Graham Cancer Center) will implement new chemistry analyzers. Changes to chemistry orders/values fall broadly into three categories:

1. Some labs will have reference range changes but will remain on the same row in Results Review as their values are comparable historically. High/Low flags will change to reflect the new reference ranges. In addition, you may see new comments from the lab for clinical decision making.
2. Some labs will have a more dramatic change in reference ranges and will have a new line in Results Review. These labs cannot be directly compared historically.
3. Several tests will have new orders due to the new assay/analyzer.

Note: Reference Range changes for Pediatric population are not captured below. CLICK HERE for those ranges.

1. **Labs with more significant reference range changes but are comparable historically.**

For a complete list of affected lab tests and changes: CLICK HERE

Test Name	Before Conversion	New Values
Albumin	Age >2: 3.8 – 5.1	Age ≥18: 3.8 – 5.1 (younger patients have updated ranges)
ALP	Age ≥15: 50 – 250	Male Age 12 – 19: 0 - 750 Male Age ≥20: 40 – 150 Female Age ≥15: 40 – 150
Alcohol Blood Level	Normal: Negative	Normal: <10 mg/dL
ALT	7 – 52	Adult Male: 0 – 45 Adult Female: 0 – 34
Ammonia Level	16 – 53	18 – 72
Amylase	29 – 103	Age ≥14 days to 70 years: 25 – 125 Age ≥71 years: 20 – 160
AST	11 – 39	11 – 34
BUN	8 – 22	Age 14 – 50: 8 – 21 Male Age ≥51: 8 – 26 Female Age ≥51: 10 – 20
C3	87 – 200	Male Age ≥15: 82 – 185 Female Age ≥15: 83 – 193
C4	19 – 52	Male Age ≥15: 15 – 53 Female Age ≥15: 15 – 57
Calcium	8.4 - 10.3	Age ≥13: 8.4 – 10.2
UR Chloride 24hr Calc	110 – 250	Age 15 – 59: 110 – 250 Age ≥60: 95 – 195
Creatine Kinase	Adult Male: 40 – 250 Adult Female: 30 – 210	Adult Male: 30 – 200 Adult Female: 29 – 168
CO2	24 – 32	Age 18 – 60: 22 – 29 Age ≥61: 23 – 31

Creatine	Adult Male: 0.7 – 1.3 Adult Female: 0.5 – 1.0	Adult Male: 0.6 – 1.3 Adult Female: 0.5 – 1.2
UR CRT Clearance Calc	Adult Male: 97 – 137 Adult Female: 88 – 128	Adult Male: 85 – 125 Adult Female: 75 – 115
UR Creatinine Random	N/A	Adult Male: 0.8 – 1.8 Adult Female: 0.6 – 1.6
UR CRT 24hr Measured	N/A	Adult Male: 0.8 – 1.8 Adult Female: 0.6 – 1.6
C-Reactive Protein	0.0 – 8.0	0.0 – 5.0
CRP High Sensitivity	0.00 – 3.00	0.00 – 1.00
Gentamicin Peak Level	4.0 – 10.0	3.0 – 10.0
GGTP	9 – 64	Adult Male: >55 Adult Female: >38
Glucose 1hr Post 50gm	70 – 140	70 – 139
Glucose Gestational 1hr	50 – 180	70 – 179
Glucose 2hr PP	70 – 120	70 – 139
Glucose Tolerance 2hr GLUG2	50 – 155	70 – 155
Glucose Tolerance 3hr	50 – 140	70 – 140
Glucose Tolerance 2hr GLU2H	70 – 140	70 – 139
Glucose Fasting Gest	70 – 95	70 – 94
Glucose Fasting	70 – 99	74 – 99
Glucose	70 – 99	74 – 99
UR Glucose Random	0 – 30	1 – 15
UR Glu 24hr Measured	N/A	1 – 15
Iron	40 – 150	Adult Male: 65 – 175 Adult Female: 50 – 170
Lactate Dehydrogenase	107 – 270	125 – 220
Lipase	11 – 82	0 – 60
Lithium	0.5 – 1.6 (Toxic >2.0)	0.6 – 1.2 (Toxic >1.5)
Magnesium	1.7 – 2.4	Age 0 – 20: 1.5 – 2.3 Age ≥21: 1.6 – 2.6
UR Magnesium 24hr Calc	50 – 160	73 – 122
PreAlbumin	17 – 42	Male Age 13 – 60: 18 – 45 Female Age 13 – 60: 16 – 38 Male Age ≥61: 16 – 42 Female Age ≥61: 14 – 37
UR Phosphorus Random	N/A	Adult Male: 5 – 189 Adult Female: 7 – 148
UR Phos 24hr Measured	N/A	Adult Male: 5 – 189 Adult Female: 7 – 148

UR Potassium 24hr Calc	25 – 120	25 – 125
Sodium	136 – 146	136 – 145
UR Sodium 24hr Calc	40 – 220	Adult Male: 40 – 220 Adult Female: 27 – 287
Salicylate Level	2.8 – 20.0	15.0 – 25.0
Total Protein	6.1 – 8.3	6.0 – 8.0
UR Tot. Protein Random	0.0 – 20.0	1 – 14
UR Random TP/CRT Ratio	0 – 250	<200
CSF Total Protein	15 – 45	15 – 40
Triglycerides	Age 16 – 19: 40 – 163 Male Age ≥20: 0 – 150	0 – 150
Unsaturated Iron Binding Capacity	155 – 355	Adult Male: 69 – 240 Adult Female: 70 – 310
Total Iron Binding Capacity	220 – 440	Adult Male: 134 – 415 Adult Female: 120 – 480
Uric Acid	Adult Male: 3.8 – 8 Adult Female: 2.8 – 6.5	Adult Male: 3.7 – 7.7 Adult Female: 2.5 – 6.2
Uric Acid - Rasburicase	Adult Male: 3.8 – 8 Adult Female: 2.8 – 6.5	Adult Male: 3.7 – 7.7 Adult Female: 2.5 – 6.2
HCG Gestational	Adult Male: 0 – 2 Adult Female: 0 – 7	Expired Ref Ranges & Details added to test comment
CA 125	0 – 38	0 – 35
CA 153	0 – 30	0 – 31
CEA	0.0 – 4.3	0.0 – 5.0
Ferritin	Adult Male: 30 – 400 Adult Female: 13 – 150	Adult Male: 22 – 275 Adult Female: 5 – 204
Folate	3.6 – 99.0	7.0 – 31.4
T3 Free	2.00 – 4.40	1.58 – 3.91
T4 Free	0.9 – 1.7	0.70 – 1.48
Procalcitonin	0.00 – 0.24	0.00 – 0.07
Prolactin	Adult Male: 4.0 – 15.2 Adult Female: 4.8 – 23.3	Adult Male: 3.5 – 19.4 Adult Female: 5.2 – 26.5
Testosterone	Male Age 18 – 49: 249 – 836 Male Age ≥50: 193 – 740 Female Age 18 – 49: 8 – 48 Female Age ≥50: 3 – 41	Male Age 18 – 49: 240 – 871 Male Age ≥50: 221 – 716 Female Age 18 – 49: 14 – 53 Female Age ≥50: 12 – 36
Triiodothyronin	0.8 – 2.0	0.35 – 1.93
TSH	0.27 – 4.20	0.35 – 4.94
Cortisol	AM sample: 4.8 – 19.5 PM sample: 2.5 – 11.9	AM sample: 3.7 – 19.4 PM sample: 2.9 – 17.3
Progesterone	Male: <0.05 – 0.1 Female: See Test Comments	Male: 0.0 – 0.2 Female: See Test Comments
PTH	15 – 65	8.7 – 77.1

Rapid PTH	15 – 65	8.7 – 77.1

2. **<u>Labs with significant reference range changes, that are NOT comparable historically and will appear as a new test within Results Review.</u>**

Test Name	Before Conversion	New Values
Acetaminophen Level	10 – 20 mg/L	10 – 30 mcg/mL
Carbamazepine	mg/L	mcg/mL unit of measure change / numeric values unchanged
Phenobarbital Level	mg/L	mcg/mL unit of measure change / numeric values unchanged
Phenytoin Level	10 – 20 mg/L Toxic >25 mg/L	10 – 20 mcg/mL Toxic >30 mcg/mL
Theophylline Level	mg/L	mcg/mL unit of measure change / adult numeric values unchanged
Valproic Acid Level	mg/L	mcg/mL unit of measure change / numeric values unchanged
Follicle Stim Hormone	Male: 1.5 – 12.4 Female: See Test Comments	Male: 1.0 – 12.0 Female: See Test Comments
Luteinizing Hormone	Male: 1.7 – 8.6 Female: See Test Comments	Male: 0.6 – 12.0 Female: See Test Comments

3. **<u>New lab orderables</u>**

High Sensitivity Troponin I *(replacing HSTT)*	*Algorithm categories:* Manual retest: DE < 15 Females DE < 23 Males MD < 16 Females MD < 21 Males Automated retest: DE > 14 Females DE > 22 Males MD > 15 Females MD > 20 Males Critical: All Sites: > 51 Critical Delta: ≥ 7	*Algorithm categories (all sites aligned):* Manual retest: < 15 Females < 36 Males Automated retest: 15 – 63 Females 36 – 63 Males Critical: > 63 Critical Delta: ≥ 15

CA 199	Replacing old CA199
Urine Microalbumin Creatine Ratio	Replacing old UMALB order
Cystatin C	New Test
Alphafetoprotein Tumor Marker	Replacing old AFP order
PSA Screen	New Test
PSA Diagnostic	New Test
PSA Free Group	New Test
PSA Free	New Test
PSA %	New Test
PSA Free and Total	New Test
PSA Total	New Test
PSA Total w/ Reflex	New Test