New Chemistry Platforms

Vanderbilt Medical Laboratories (VML) have upgraded chemistry testing platforms at the Nashville Main Campus Vanderbilt Ingram Cancer Center and Belle Meade laboratory locations. This change enables:

- Reduced sample volume requirements to run tests.
- Improved turnaround time through instrument throughput.
- Improved consistency and quality of results by measuring common interfering conditions, namely hemolysis, lipemia, and icterus.
- Improved lab staff efficiency.

Both locations will implement the new chemistry platforms in April and May 2025, whereas all other lab locations will upgrade their testing platforms over the next year and a half. Further communications about those timelines and processes will be forthcoming.

The process for ordering lab tests will be the same. Changes that will impact your practice include:

- Different reference ranges will exist in the enterprise for the same test if noted, depending on where the test is performed.
  - Two different chemistry platforms will run the same tests until the enterprise standardizes equipment.
  - Slight differences in the reference range values may exist with these new platforms (see charts on pages 2-5).
  - Patients who receive care at multiple Vanderbilt Health locations may see both sets of reference values in their My Health at Vanderbilt (MHAV), depending on which laboratory location processed their tests (see EPIC and MHAV trending examples on pages 6-10).
- Tests on the new platform require precise labeling and tube fill practices (see page 11).

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For more information, please see the Lab Transformation Roche Change Impact.pdf

Or
Call VML Customer Service: 615-875-5227 (5-LABS)
800-551-5227

VANDERBILT UNIVERSITY MEDICAL CENTER | Vanderbilt Medical Laboratories

Updated 3.16.2025

Chemistry Tests with Two Reference Intervals

Test Name	Changes/Impacts	Previous Abbott Reference Range	New Roche Reference Range
Albumin (LAB45)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 - <15 days = 3.3 – 4.5 g/dL 15 days - <1 Years = 2.8 – 4.7 g/dL 1 Year - <8 Years = 3.8 – 4.7 g/dL 8 Years - <15 Years = 4.1 – 4.8 g/dL 15 Years - <19 Years = 4 – 5.1 g/dL 19 Years - <60 Years = 3.5 – 5.2 g/dL 60 Years - <90 Years = 3.2 – 4.6 g/dL >90 Years = 2.9 – 4.5 g/dL	0 - <15 days = 3.3 – 4.5 g/dL 15 days - <1 years = 3.1 – 5 g/dL 1 year - <8 years = 4 – 4.9 g/dL 8 years - <15 years = 4.2 – 5.1 g/dL MALE 15 years - <18 years = 4.3 – 5.3 g/dL FEMALE 15 years - <18 years = 4.0 – 5.3 g/dL ≥18 years = 3.9 – 4.9 g/dL
Alkaline Phosphatase (LAB112)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 - <15 days = 90 – 273 U/L 15 days - <1 Year = 134 – 518 U/L 1 Year - <10 Years = 156 – 369 U/L 10 Years - <13 Years = 141 – 460 U/L ≥19 Years = 40 – 150 U/L MALE 13 Years - <15 Years = 127 – 517 U/L 15 Years - <17 Years = 89 – 365 U/L 17 Years - <19 Years = 54 – 128 U/L FEMALE 13 Years - <15 Years = 62 – 280 U/L 15 Years - <17 Years = 54 – 128 U/L 17 Years - <19 Years = 59 – 164 U/L	0 - <15 days = 83 – 248 U/L 15 days - <1 year = 122 – 469 U/L 10 years - <13 years = 129 – 417 U/L MALE 1 year - <10 years = 142 – 335 U/L 13 years - <15 years = 116 – 468 U/L 15 years - <17 years = 82 – 331 U/L 17 years - <18 years = 55 – 149 U/L ≥18 years = 40 – 129 U/L FEMALE 1 year - <10 years = 129 – 417 U/L 13 years - <15 years = 116 – 468 U/L 15 years - <17 years = 82 – 331 U/L 17 years - <18 years = 55 - 149 U/L ≥18 years = 35 – 120 U/L
Alanine Aminotransferase (LAB132)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Bias on higher values ~25% (pos) for Roche	0 - <1 Year = 5 – 51 U/L 1 Year - <13 Years = 9 – 25 U/L 13 Years - <19 Years = 8 – 24 U/L ≥19 Years = 0 – 55 U/L	0 - <1 year = 0 – 25 U/L 1 year - <13 years = 0 – 19 U/L MALE 13 years - <18 years = 0 – 18 U/L FEMALE 13 years - <18 years = 0 – 17 U/L MALE ≥18 years = 10 – 50 U/L FEMALE ≥18 years = 10 – 35 U/L
Aspartate Aminotransferase (LAB131)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Bias on higher values ~25% (pos) for Roche	0 - <15 days = 40 – 175 U/L 15 days - <1 Year = 28 – 177 U/L 1 Year - <7 Years = 29 – 53 U/L 7 Years - <12 Years = 26 – 45 U/L MALE 12 Years - <18 Years = 22 - 44 U/L FEMALE 12 Years - <18 Years = 21 – 34 U/L MALE ≥18 Years = 10 – 50 U/L FEMALE ≥18 Years = 10 – 35 U/L	No change.
Bilirubin, Total (LAB50)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Bias on higher values ~-10% (neg) for Roche	0 Minutes - <1 Days = 0.2 - 6 mg/dL 1 Days - <2 Days = 0.2 - 10 mg/dL 2 Days - <5 Days = 0.2 - 12 mg/dL 5 Days - <15 Days = 0.2 - 10 mg/dL 15 Days - <30 Days = 0.1 - 0.7 mg/dL 30 Days - <1 Years = 0.1 - 0.7 mg/dL 1 Years - <9 Years = 0.1 - 0.4 mg/dL 9 Years - <12 Years = 0.1 - 0.6 mg/dL 12 Years - <15 Years = 0.1 - 0.7 mg/dL 15 Years - <19 Years = 0.1 - 0.8 mg/dL ≥19 Years = 0.2 - 1.2 mg/dL	0 - <24 hours = 0 - 7.9 mg/dL 24 hours - <48 hours = 0 - 12.9 mg/dL 48 hours - <84 hours = 0 - 16.9 mg/dL 84 hours - <15 days = 0 - 14.6 mg/dL 15 days - <1 year = 0 - 0.6 mg/dL 1 year - <9 years = 0 - 0.3 mg/dL 9 years - <12 years = 0 - 0.5 mg/dL 12 years - <15 years = 0 - 0.6 mg/dL 15 years - <18 years = 0 - 0.7 mg/dL ≥18 years = 0 - 1.2 mg/dL

Chemistry Tests with Two Reference Intervals

Test Name	Changes/Impacts	Previous Abbott Reference Range	New Roche Reference Range
Bilirubin, Direct (LAB52)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Abbott method is Jendrassik-Grof/Lo & Wu, Roche method is standardized to Doumas	0 - <15 days = 0.3 – 0.7 mg/dL 15 days - <1 Year = 0.1 – 0.3 mg/dL 1 Year - <9 Years = 0.1 – 0.2 mg/dL 9 Years - <13 Years = 0.1 – 0.3 mg/dL 13 Years - <19 Years = 0.1 – 0.4 mg/dL ≥19 Years = 0 – 0.5 mg/dL	No change.
Urea Nitrogen (LAB140)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Days - <15 Days = 3 – 22 mg/dL 15 Days - <1 Year = 4 – 17 mg/dL 1 Year - <10 Years = 9 – 22 mg/dL 10 Years - <19 Years = 7 – 20 mg/dL 19 Years - <50 Years = 7 – 21 mg/dL ≥50 Years = 8 – 26 mg/dL	0 - <15 days = 3 – 22 mg/dL 15 days - <1 year = 4 – 16 mg/dL 1 year - <10 years = 9 – 21 mg/dL MALE 10 years - <19 years = 7 – 20 mg/dL FEMALE 10 years - <19 years = 7 – 18 mg/dL 19 years - <60 years = 6 – 20 mg/dL 60 years - <90 years = 8 – 23 mg/dL ≥90 years = Reference interval not established.
Calcium (LAB53)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Minutes - <10 Days = 7.6 – 10.4 mg/dL 10 Days - <2 Years = 9 – 11 mg/dL 2 Years - <12 Years = 8.8 – 10.8 mg/dL ≥12 Years = 8.4 – 10.5 mg/dL	0 - <10 days = 7.6 – 10.4 mg/dL 10 days - <2 years = 9 – 11 mg/dL 2 years - <12 years = 8.8 – 10.8 mg/dL 12 years - <18 years = 8.4 – 10.2 mg/dL ≥18 years = 8.60 – 10.4 mg/dL
Chloride (LAB59)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Days - <30 Days = 98 – 113 mmol/L 30 days - < 1 Year = 98 – 107 mmol/L	No change.
Carbon Dioxide (LAB55)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Minutes - <15 Days = 5 – 20 mmol/L 15 Days - <1 Year = 10 – 24 mmol/L 1 Years - <5 Years = 14 – 24 mmol/L 5 Years - <15 Years = 17 – 26 mmol/L 15 Years - <19 Years = 17 – 28 mmol/L 19 Years - <60 Years = 22 – 29 mmol/L ≥60 Years = 23 – 31 mmol/L	0 - <15 days = 5 – 20 mmol/L 15 days - <1 year = 10 – 24 mmol/L 1 year - <5 years = 14 – 24 mmol/L 5 years - <15 years = 17 – 26 mmol/L 15 years - <18 years = 17 – 28 mmol/L ≥18 years = 22 – 29 mmol/L
Creatinine (LAB66)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Minutes - <15 Days = 0.42 – 1.05 mg/dL 15 Days - <1 Years = 0.31 – 0.53 mg/dL 1 Years - <4 Years = 0.39 – 0.55 mg/dL 4 Years - <7 Years = 0.44 – 0.65 mg/dL 7 Years - <12 Years = 0.52 – 0.69 mg/dL 12 Years - <15 Years = 0.57 – 0.8 mg/dL MALE 15 Years - <17 Years = 0.65 – 1.04 mg/dL 17 Years - <19 Years = 0.69 – 1.1 mg/dL ≥19 Years = 0.72 – 1.25 mg/dL FEMALE 15 Years - <17 Years = 0.59 – 0.86 mg/dL 17 Years - <19 Years = 0.6 – 0.88 mg/dL ≥19 Years = 0.57 – 1.11 mg/dL	0 - <2 months = 0.24 – 0.85 mg/dL 2 months - <12 months = 0.17 – 0.42 mg/dL 1 year - <3 years = 0.24 – 0.41 mg/dL 3 years - <5 years = 0.31 – 0.47 mg/dL 5 years - <7 years = 0.32 – 0.59 mg/dL 7 years - <9 years = 0.40 – 0.60 mg/dL 9 years - <11 years = 0.39 – 0.73 mg/dL 11 years - <13 years = 0.53 – 0.79 mg/dL 13 years - <15 years = 0.57 – 0.87 mg/dL MALE ≥15 years = 0.7 – 1.3 mg/dL FEMALE ≥15 years = 0.5 – 1.1 mg/dL

Chemistry Tests with Two Reference Intervals

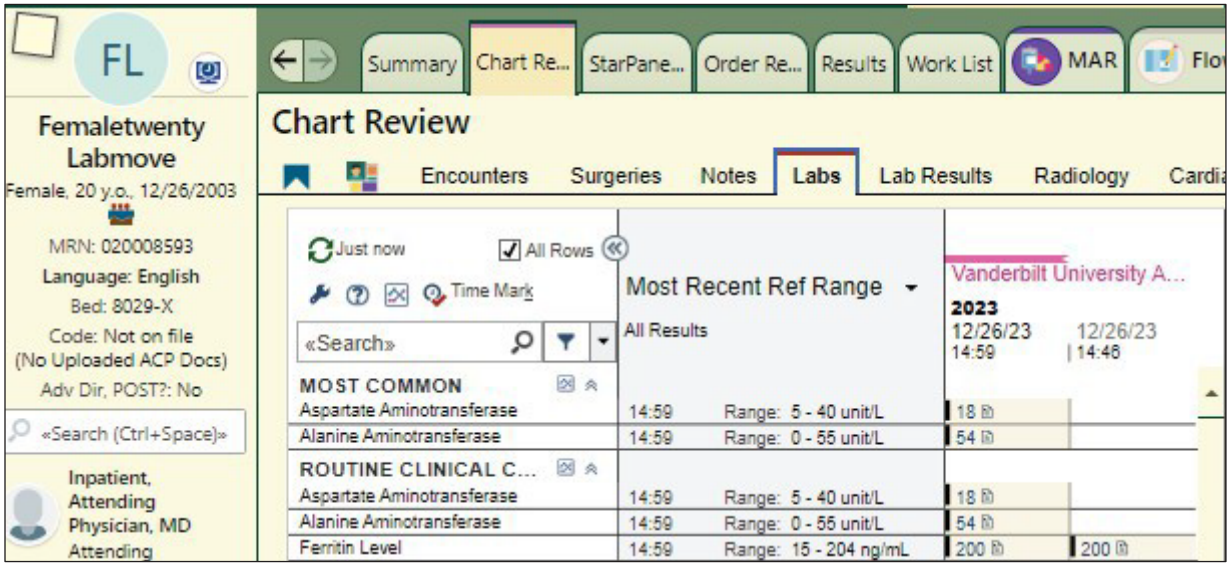
Test Name	Changes/Impacts	Previous Abbott Reference Range	New Roche Reference Range
Glucose (LAB82)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Minutes - <1 Day = 40 – 60 mg/dL 1 Day - <30 Days = 50 – 80 mg/dL 30 days - <1 Year = 60 – 99 mg/dL 1 Year - <19 Years = 60-99 mg/dL >/= 19 Years = 70 - 99 mg/dL	Premature: 0 - <2 Days = 20 – 60 mg/dL 0 Minutes - <2 Days = 40 – 60 mg/dL 2 Days - <1 Month = 50 - 80 mg/dL 1 Month - <18 Years = 60 - 99 mg/dL ≥18 Years = 70 - 99 mg/dL
Lactate Dehydrogenase (LAB96)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Bias on all values ~-10% (neg) for Roche	0 Minutes - <15 Days = 309 – 1222 IU/L 15 Days - <1 Years = 163 – 452 IU/L 1 Years - <10 Years = 192 – 321 IU/L 10 Years - <15 Years = 157 – 283 IU/L 15 Years - <19 Years = 130 – 250 IU/L ≥19 Years = 125 – 220 IU/L	0 - <30 days = 130 – 700 IU/L 1 month - <5 years = 130 – 400 IU/L 5 years - <12 years = 100 – 300 IU/L 12 years - 150 years = 100 – 250 IU/L
Magnesium (LAB103)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Minutes - <5 Months = 1.5 – 2.2 mg/dL 5 Months - <6 Years = 1.7 – 2.3 mg/dL 6 Years - <20 Years = 1.7 – 2.2 mg/dL ≥20 Years = 1.6 – 2.6 mg/dL	0 - <5 months = 1.5 – 2.2 mg/dL 5 months - <6 years = 1.7 – 2.3 mg/dL 6 years - <12 years = 1.7 – 2.1 mg/dL 12 years - <20 years = 1.7 – 2.2 mg/dL ≥20 years = 1.6 – 2.6 mg/dL
Phosphorus (LAB113)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Bias on all values ~-5% (neg) for Roche	0 Minutes - <15 Days = 5.6 – 10.5 mg/dL 15 Days - <1 Years = 4.8 – 8.4 mg/dL 1 Years - <5 Years = 4.3 – 6.8 mg/dL 5 Years - <13 Years = 4.1 – 5.9 mg/dL 13 Years - <16 Years = 3.2 – 6.2 mg/dL 16 Years - <19 Years = 2.9 – 5.0 mg/dL ≥19 Years = 2.3 – 4.7 mg/dL	MALE 0 - <30 days = 3.6 – 6.9 mg/dL 1 month - <12 months = 3.5 – 6.6 mg/dL 1 year - <4 years = 3.1 – 6.0 mg/dL 4 years - <7 years = 3.3 – 5.6 mg/dL 7 years - <10 years = 3.0 – 5.4 mg/dL 10 years - <13 years = 3.2 – 5.7 mg/dL 13 years - <16 years = 2.9 – 5.1 mg/dL 16 years - <18 years = 2.7 – 4.9 mg/dL FEMALE 0 - <30 days = 4.3 – 7.7 mg/dL 1 month - <12 months = 3.7 – 6.5 mg/dL 1 year - <4 years = 3.4 – 6.0 mg/dL 4 years - <7 years = 3.2 – 5.5 mg/dL 7 years - <10 years = 3.1 – 5.5 mg/dL 10 years - <13 years = 3.3 – 5.3 mg/dL 13 years - <16 years = 2.8 – 4.8 mg/dL 16 years - <18 years = 2.5 – 4.8 mg/dL ≥18 years = 2.5 – 4.5 mg/dL
Potassium (LAB114)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Days - <30 Days = 3.7 – 5.9 mmol/L 30 Days - <1 Year = 4.1 – 5.3 mmol/L 1 Year - <12 Years = 3.4 – 4.7 mmol/L ≥12 Years = 3.3 – 4.8 mmol/L	Premature: 0 – 48 hours = 3.0 – 6.0 mmol/L 0 Days - <30 Days = 3.7 – 5.9 mmol/L 30 Days - <1 Year = 4.1 – 5.3 mmol/L 1 Year - <12 Years = 3.4 – 4.7 mmol/L (Plasma) ≥12 Years = 3.3 – 4.8 mmol/L
Total Protein (LAB118)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Minutes - <15 Days = 5.3 – 8.3 g/dL 15 Days - <1 Years = 4.4 – 7.1 g/dL 1 Years - <6 Years = 6.1 – 7.5 g/dL 6 Years - <9 Years = 6.4 – 7.7 g/dL 9 Years - <19 Years = 6.5 – 8.1 g/dL ≥19 Years = 6 – 8.3 g/dL	0 -<15 days = 5.1 – 8.0 g/dL 15 days - <1 year = 4.3 – 6.9 g/dL 1 year - <6 years = 5.9 – 7.3 g/dL 6 years = <9 years = 6.2 – 7.5 g/dL 9 years - <18 years = 6.3 – 7.8 g/dL ≥18 years = 6.6 – 8.7 g/dL
Sodium (LAB59)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete	0 Days - <30 Days = 133 - 146 mmol/L 30 Days - <1 Year = 139 - 146 mmol/L 1 Year - <18 Years = 138 - 145 mmol/L ≥18 Years = 136 – 145 mmol/L	Premature: 0 – 48 hours = 128 - 148 mmol/L 0 Days - <30 Days = 133 - 146 mmol/L 30 Days - <1 Year = 139 - 146 mmol/L 1 Year - <18 Years = 138 - 145 mmol/L ≥18 Years = 136 – 145 mmol/L

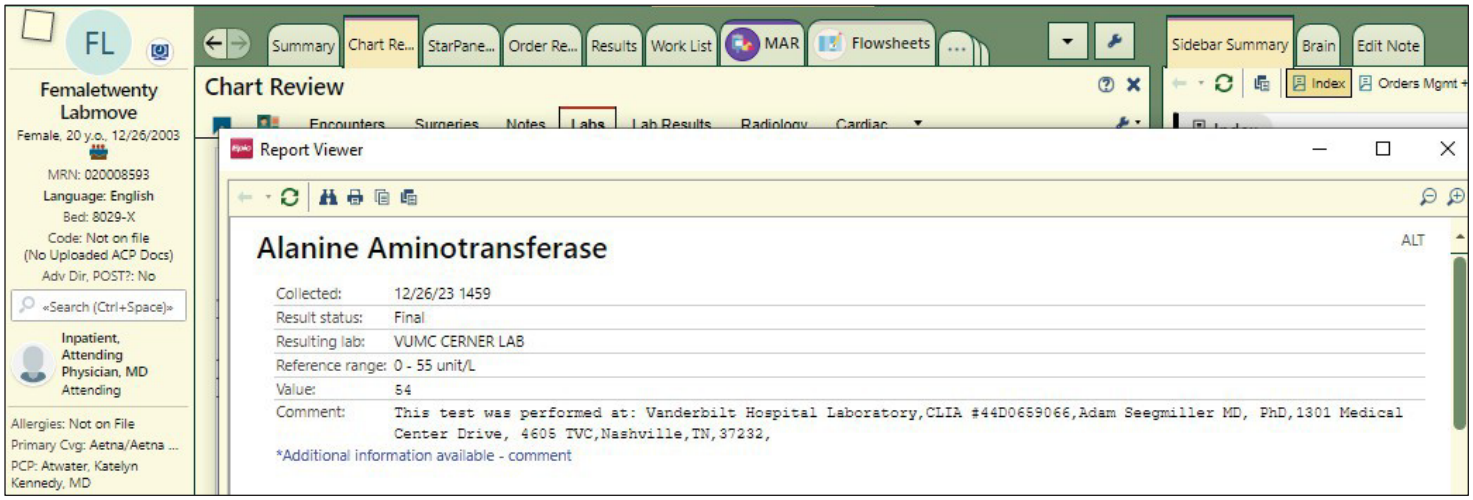
Chemistry Tests with Two Reference Intervals			
Test Name	**Changes/Impacts**	**Previous Abbott Reference Range**	**New Roche Reference Range (Nashville Main Campus Hematology Oncology and Belle Meade Locations)**
Uric Acid (LAB141)	• Two reference intervals, one for each platform (Abbott and Roche), until transition complete • Bias on higher values ~-5% (neg) for Roche	0 Minutes - <15 Days = 2.8 – 12.7 mg/dL 15 Days - <1 Years = 1.6 – 6.3 mg/dL 1 Years - <12 Years = 1.8 – 4.9 mg/dL MALE 12 Years - <19 Years = 2.6 – 7.6 mg/dL FEMALE 12 Years - <19 Years = 2.6 – 5.9 mg/dL MALE ≥19 Years = 3.5 – 7.2 mg/dL FEMALE ≥19 Years = 2.6 – 6 mg/dL	0 - <15 days = 2.7 – 12.6 mg/dL 15 days - <1 year = 1.5 – 6.2 mg/dL 1 year - <12 years = 1.7 – 4.7 mg/dL MALE 12 years - <18 years = 2.5 – 7.5 mg/dL FEMALE 12 years - <18 years = 2.5 – 5.7 mg/dL MALE ≥18 years = 3.4 – 7 mg/dL FEMALE ≥18 years = 2.4 – 5.7 mg/dL

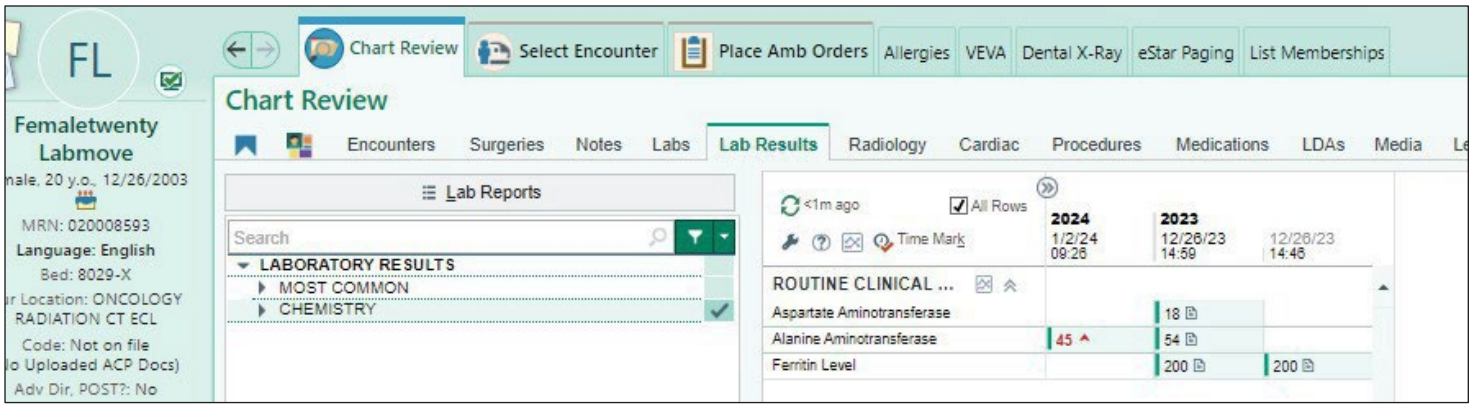
EPIC and My Health at Vanderbilt Trend Examples

Reference Range Change Example in Epic

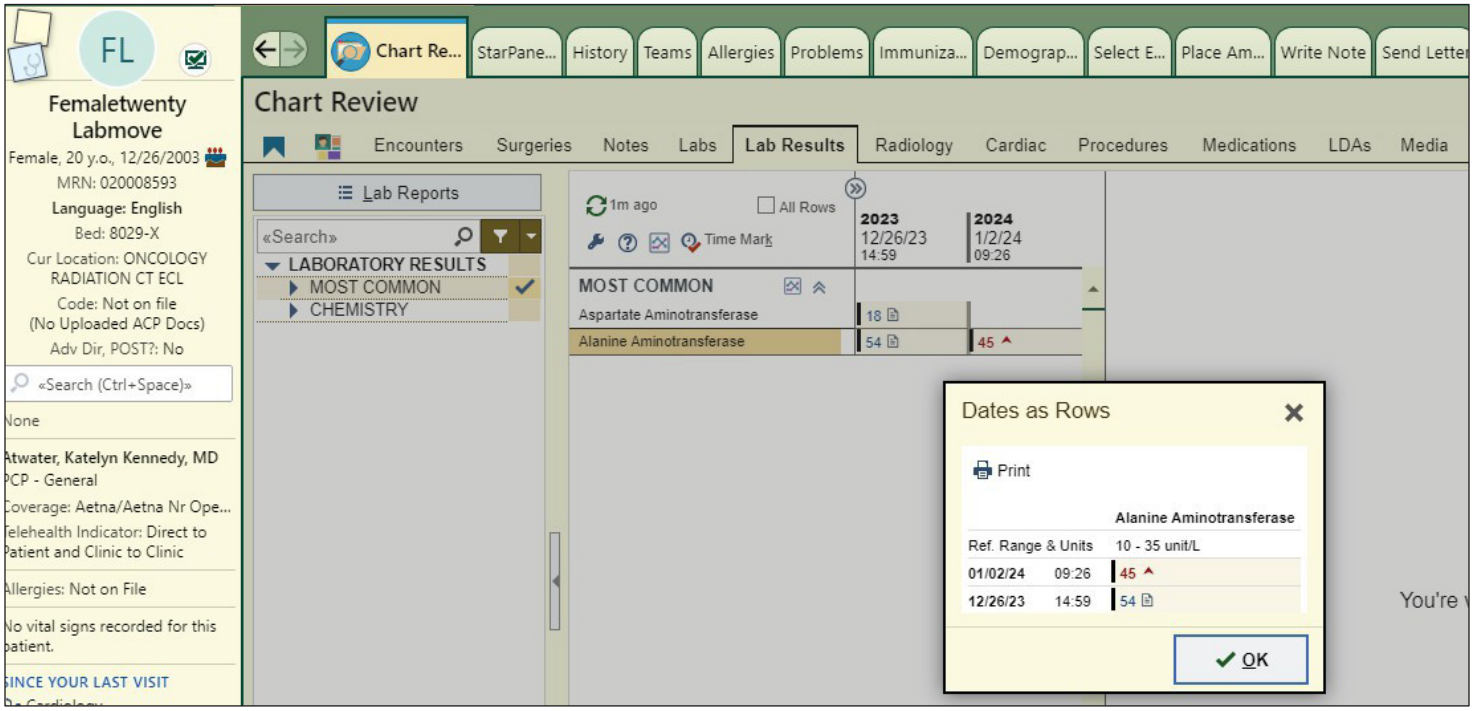
Example: ALT Test Female, 20 years old. MRN 20008593 Abbott Result 54 on 12/26/2023 and Roche result 45 on 01/02/2024.

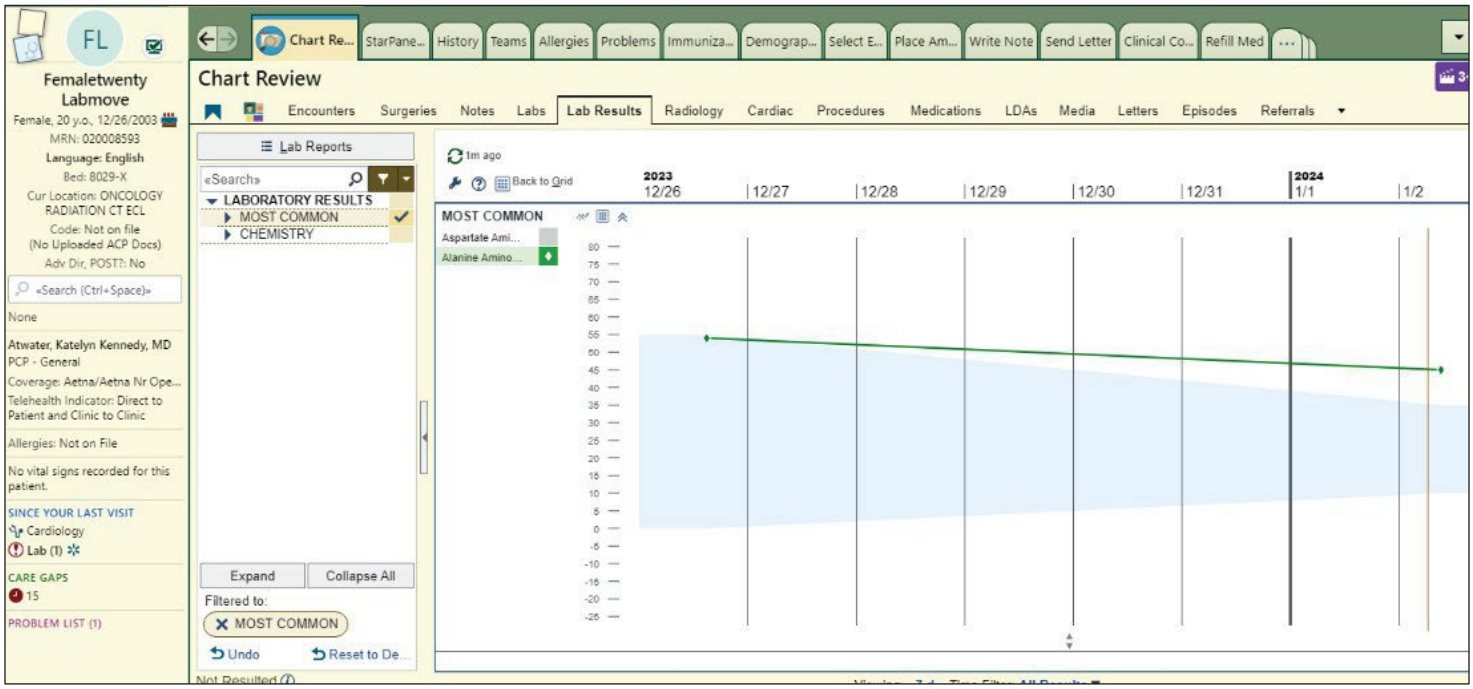




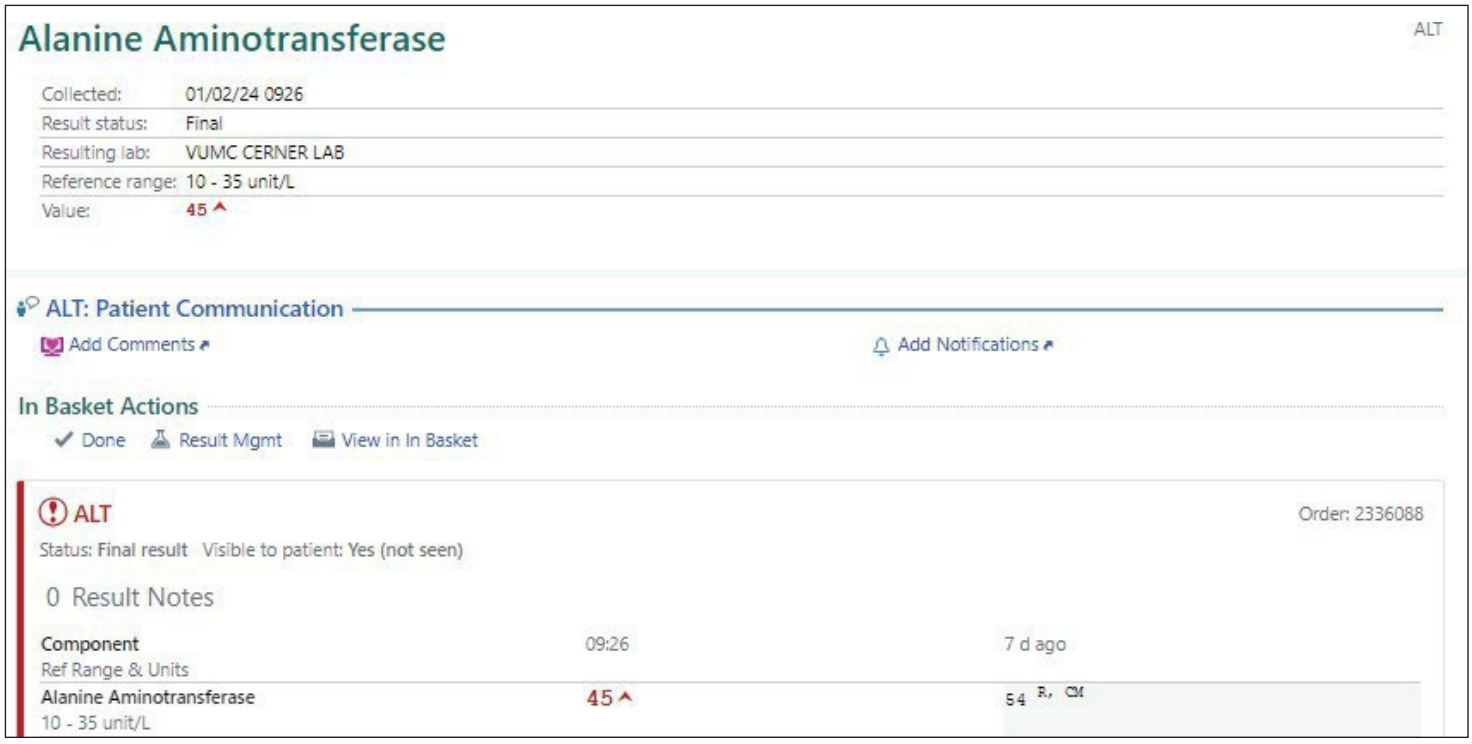


EPIC and My Health at Vanderbilt Trend Examples



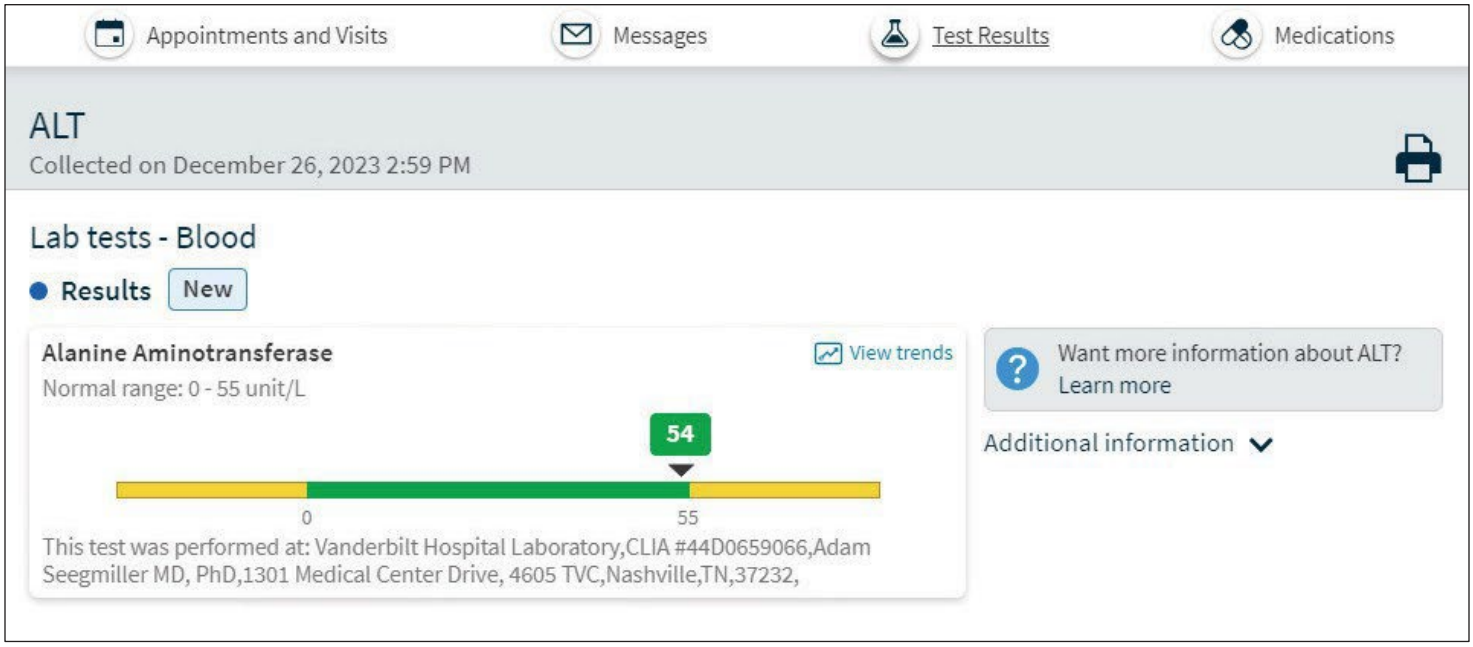


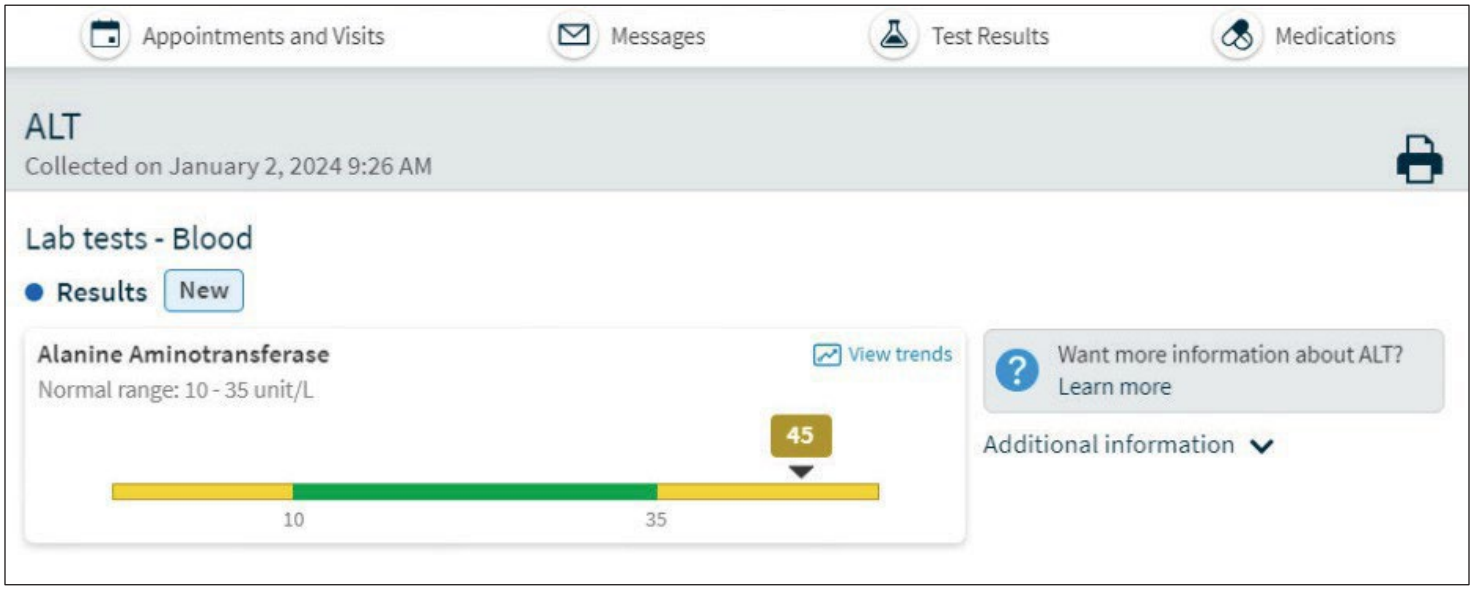
EPIC and My Health at Vanderbilt Trend Examples



EPIC and My Health at Vanderbilt Trend Examples

Reference Range Change Example in MyChart (Patient View)





EPIC and My Health at Vanderbilt Trend Examples

Barcode Labeling for Roche

Label Example	Description	Reason
	Incorrect	Barcode label incorrectly placed, must be parallel to tube edge
	Incorrect	Label is sticking out from tube
	Incorrect	Barcode partially covered with stripes, not readable
	Incorrect	Damaged barcode
	Incorrect	Not enough window to see the sample on the tube because of barcode placement
	Correct	Correct placement of barcode label