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The Pathology Council of Alverno Laboratories has determined that follow-up testing and/or confirmation of the following tests is medically necessary in order to provide appropriate patient care. Changes are highlighted in YELLOW. Deleted are highlighted in RED.

May 2023

Original Test	Orderable with or without reflex	Result	Follow-up/Confirmation Test
Allergen Profile: Childhood Food & Environmental Panel	Yes	Egg white (f1).0.1 Ku/L Milk (f2)>0.1 Ku/L Peanut (f13) > 0.1 Ku/L	Reflex to egg, milk, and/or peanut component allergen profile
Allergen Profile: Food Allergy Panel	Yes	Egg white (f1).0.1 Ku/L Milk (f2)>0.1 Ku/L Peanut (f13) > 0.1 Ku/L	Reflex to egg, milk, and/or peanut component allergen profile
ANA by multiplex EIA, Screen	Yes	Positive	Quantitative detection of DsDNA, semi-quantitative detection of: Chromatin, Ribosomal P, SS-A, SS-B, Sm, SmRNP, RNP, Scl-70, and Centromere B.
ANA by IFA with reflex to multiplex EIA	Yes	Titer ≥ 1:80	Quantitative detection of DsDNA, semi-quantitative detection of: Chromatin, Ribosomal P, SS-A, SS-B, Sm, SmRNP, RNP, Scl-70, and Centromere B.
Antibody Screen	No	Positive	Antibody ID
Antibody Screen	No	Positive	Antigen-type units for crossmatch
Blood Culture	No	Rapid identification positive for Staph aureus	PCR for confirmation of Staph aureus identification and mecA (MRSA) resistance marker detection.
Blood Culture	No	Rapid identification positive for E coli	ePlex for resistance markers CTX-M, IMP, KPC, NDM, OXA, (OXA-23 and OXA-48 groups only), and VIM
Body Fluid Slide	No	Abnormal cells	Pathologist review
Breast Cancer (new diagnosis)	No	Carcinoma	HER-2 (reflex to FISH if applicable) Estrogen/Progesterone receptors.
CBC	No	Specified abnormal flags	Pathologist review and/or scan and/or manual diff
Clostridium difficile	No	GDH + / Toxin negative	PCR confirmation
Clostridium difficile, BioFire GI Panel	Yes	Positive	If the C. diff target on the BioFire PCR panel is positive an EIA antigen test will be reflexed.
Colorectal carcinoma, MMR	No	MLH1 deficient	BRAF V600E (Alverno) with reflex to MLH1 promoter methylation in wild type cases (Quest)
CSF specimen	No	CSF specimen is cloudy (not bloody)	STAT Gram Stain
Coronary Risk Panel	No	Triglycerides > 400 mg/dl	Direct LDL

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Culture	No	Suspected pathogens	Organism ID & Susceptibility Testing if indicated
Culture, Acid Fast	No	All	AFB stain
Endometrial endometroid adenocarcinoma, MMR	No	MLH1 deficient	MLH1 promoter methylation (Quest)
Fetal Bleed Screening Test	No	Positive	Kleihauer-Betke fetal cell stain or flow cytometry test for the detection of fetal hemoglobin.
Group B Streptococcus by PCR	No	Unresolved/Indeterminate	Culture
Group B Streptococcus by PCR (Sensitivity Testing)	No	Positive on Penicillin allergic patients	Culture and Antibiotic Susceptibility Testing
Hemoglobin A1C	No	All	Estimated Average Glucose (EAG calculation) also reported
Hemoglobin electrophoresis	No	If peak is in "S" zone If peak is in "C" zone Other abnormal findings	Sickle screen Acid Plate Sent to Reference lab if indicated
Heparin Induced Platelet Antibodies	No	If positive	Serotonin Release Assay
Hepatitis A Cascade	Yes	If Hepatitis A total is Positive or Equivocal	Hepatitis A IgM
Hepatitis B Surface Antigen	No	If Hepatitis B Surface Antigen Index value is repeatedly between 1.00 and 50.00 or result is >=50.00 in a stand-alone order without other Hep B serology assays to confirm.	Hepatitis B Surface Antigen Confirmation by neutralization.
Hepatitis C Screen	No	Positive & equivocal	PCR Quantitative Confirmation
HIV Phenotype Comprehensive (HIVPN)	No	ARUP will not run HIVPN until a HIV Viral Load test is run first.	HIV Viral Load Test
HIV – Rapid Test	No	Positive	HIV 5th Generation Screen
HIV 5th Generation Screen	No	Reactive	Geenius confirmation (HIV Ab Differentiation Immunoassay)
Geenius confirmation (HIV Ab Differentiation Immunoassay)	No	Nonreactive, Indeterminate, HIV Positive Untypable (Undifferentiated)	-Nonreactive, Indeterminate or Undifferentiated sent to reference lab for HIV-1 RNA NAT
LDL	No	LDL calculation is negative	Direct LDL
Lupus Anticoagulant Reflexive Panel	No	If indicated	Fibrinogen, dRVVT and Silica Clotting Time(SCT) confirmation, and dRVVT and SCT mixing studies.
Lyme Disease	No	Positive or equivocal EIA/IFA test	Western Blot confirmation
Malaria Smear	No	Positive	Sent to Reference Lab for confirmation by PCR
Malaria, Rapid Screen and Smear	No	Pos antigen / Neg smear or Neg. antigen/Pos smear	Sent to Reference Lab for Confirmation by PCR
Newborn Metabolic Error Screen	No	-	- Collection required before baby leaves the hospital

			- if 1st screen is collected <24 hrs after 1st protein feeding, no-charge repeat is required - State does follow-up with parents and MD if any screen result is positive
Organism ID	No	All Identified Pathogens	Antibiotic susceptibility if indicated.
Pain Management urine with interpretation	No	Positive Screen for Ethyl Glucuronide	Ethyl Glucuronide and Ethyl Sulfate, urine, quantitative.
Pap smear / thin prep	No	Suspected Abnormal Cells	Pathologist interpretation
Pap HPV Reflex if ASCUS	Yes	Pap with ASCUS result	HPV
Pap HPV on Any Abnormal	Yes	Pap with any abnormal result	HPV
Prenatal Testing (Blood Bank)	No	Positive Antibody Screen Clinically significant antibodies detected in Prenatal Antibody Screen	Antibody identification performed Antibody titer performed
Serum Creatinine	No	All (greater than 20 years of age)	Glomerular Filtration Rate (GFR - calculation) also reported
Serum Protein Electrophoresis	Yes	Positive	Immunotyping
Strep Screen by EIA/FIA (Group A Strep – throat screen)	No	Strep screen negative for Group A Streptococcus	Culture performed
Syphilis Screen (RPR)	No	Reactive / Positive	RPR quantitative & Syphilis Screen (Treponema specific)
Susceptibility Testing	No	Pan Resistant Pseudomonas species: Confirmed CRE KPC Confirmed CRE not NDM: Elizabethkingia meningiosepticum/ Acinetobacter species only susceptible to Minocycline	Ceftazidime-avibactam Ceftolozane-tazobactam Ceftazidime-avibactam Meropenem-Vaborbactam Ceftazidime-avibactam Colistin
Syphilis Screen (Treponema specific)	No	Reactive / Positive	RPR / RPR quantitative (if indicated)
RPR / RPR quantitative (if indicated)	No	Nonreactive (if Syphilis Screen (EIA) is reactive or equivocal) Reactive (if Syphilis Screen (EIA) is equivocal)	TP-PA (Treponema pallidum Particle Agglutination)
Therapeutic phlebotomy	No	Requested	H/H must be performed within 24 hr prior to phlebotomy
Thyroglobulin by LC-MS/MS	Yes	Thyroglobulin Antibody ≥1 IU/mL	If the thyroglobulin antibody is positive (≥1 IU/mL) samples will be sent to Quest to perform the Thyroglobulin antigen by LC-MS/MS. If the antibody is

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			<1, thyroglobulin antigen testing will be performed in-house by immunoassay.
Transfusion (packed cells or platelets)	No	Requested	H/H or platelet count must be performed prior to transfusion
Urinalysis	No	Specified positive biochemical results: glucose value of >= 500 mg/dL or positive blood or positive protein or positive nitrite or positive leukocyte esterase.	Urine microscopic
Urinalysis / Culture reflex	Yes	> 10 WBC per HPF and either one or both abnormal Leukoesterase or Nitrite	Urine Culture
Urine Drug Screen – Chain of Custody	No	Positive	Confirmation by LC / MS (based on client)
Urine Drug Screens – All Panels including Chain of Custody	Yes	Positive	Confirmation by LC/MS
Pain Management – Urine Drug Test	No	Positive	Confirmation by LC/MS
Pain Management-Saliva Drug Test	No	Positive	Confirmations by GC or LC/MS
VDRL (CSF)	No	Positive	Titer

NOTES:

1. All routine stool cultures include examinations for Salmonella, Shigella, Campylobacter, Aeromonas, Pleisiomonas, Edwardsiella and predominant growth of Klebsiella Oxytoca. Examinations for E. coli 0157 will be automatically performed by the laboratory if a bloody stool specimen is submitted for routine stool examination. Examinations for other enteric pathogens (Vibrio, E. coli 0157, Yersinia) will be performed only upon physician request. Special physician requests for Vibrio, E. coli 0157 or Yersinia will also trigger the performance of a routine stool culture. E.coli 0157 culture will automatically include Shiga Toxin testing also.

2. 24-hour urine creatinine test will not be performed on all 24-hour urine specimens unless specifically requested by the physician.

3. All routine body fluid, wound, sputum and "other" culture orders include a gram smear to be performed on the original specimen.

4. Orders for a Triple Prenatal Risk Assessment Screen will be converted to a Quad Prenatal Risk Assessment Screen. The Alverno Pathology Council has determined that Alverno will no longer offer the Triple Prenatal Screen (effective 4/1/2015).

5. All thyroglobulin antigen orders will be accompanied with a thyroglobulin antibody assay to determine if antibodies are present. If antibodies are present the thyroglobulin antigen assay will be

sent to Quest to be performed by LC/MS-MS methodology. If antibodies are not present, the thyroglobulin antigen assay will be performed in-house via immunoassay methodology (go-live 12/7/21).

6. Orders for "Fungal Antibody Screen" include the following:
   - Histoplasma antibody
   - Blastomyces antibody
   - Coccidioides antibody
   - Aspergillus antibody

Note: Any of the four fungal antibodies listed above may be ordered individually by the physician.

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Addendum A

Clinical Laboratory Interpretation Services

The Pathologist may automatically interpret the clinical laboratory services listed below. This professional interpretation will be written and included on the patient's test report.

- Hemoglobin Electrophoresis
- Nucleic acid probe, with electrophoresis, with examination and report
- Protein, total, serum, urine; electrophoretic fractionation and quantitation
- Abnormal blood smear; interpretation and report
- Fibrinolysin; screening
- Platelet aggregation (in vitro), any agent
- Fluorescent antibody, screen
- Fluorescent antibody, titer
- Immunoelectrophoresis / Immunotyping; serum, each specimen – capillary immunotyping
- Immunoelectrophoresis / Immunotyping; other fluids (e.g. urine) with concentration, each specimen
- Dark field examination, any source (e.g. penile, vaginal, oral, skin); includes specimen collection.
- Mixing Studies – PT and/or APTT
- Smear, primary source, with interpretation; special stain for inclusion bodies or intracellular parasites (e.g. malaria, kala azar, herpes)
- Crystal Identification by light microscopy with or without polarizing lens analysis, any body fluid (except urine)
- Deviations from standard Blood Bank Procedures
- Transfusion Reaction Workups
- Immunophenotyping by flow cytometry
- FISH Analysis
- Endomysial antibodies for celiac sprue
- Lupus Anticoagulant Reflexive Panel
- Antiphospholipid Syndrome Panel
- Cystic fibrosis
- Microsatellite Instability for Lynch Syndrome
- Microsatellite Instability for Checkpoint Therapy