

Pathology Testing in Emergency Department

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Dealing of medical emergencies and better patient care with good outcomes hugely depends on the timely asked pathology test reports. However pathology should be used only for the urgent issues and not for the non urgent complaints leading to associated morbidity. It is the responsibility of junior doctors and medical emergency doctors to assess the magnitude of urgent problem, making diagnosis and order for those pathology tests that can help in supporting the diagnosis and further management of patient. This will ensure the best timely help to the patient and will reduce the burden of pathology labs. This article will add and emphasize the knowledge of right test at the right time on the right patient. Most efficient way for the best patient care and better utilization of laboratory services is to order the tests required, in a single collection. To minimize the wasteful testing in emergencies, STAT tests have been described. These tests should be urgently done for the diagnosis and treatment of patient as any delay can be life threatening. Results for the tests should be ready within the span of one hour or less.

Fremount Rideout Health Group Laboratory Services have defined some STAT Tests in various disciplines such as: *Hematology*- APTT, CBC, D-Dimer, Differential count, FDP, Fibrinogen, Fluid Cell Count, Hemogram, Platelet count, PFA, PT, Reticulocyte count; *Microbiology*- Direct Antigen-serum group B, Flu A/B, Gram stain, Legionella urinary antigen, Rapi HIV, Rapid Streptococcus, Rota virus, RSV and Wet Mount; *Serology*-Streptozyme; *Transfusion Services*- Cryo, FFP, Platelets, Type and Screen and Type and Cross match for Packed Red Blood Cells; and *Chemistry*- Acetaminophen, Alcohol, ALT, Albumin, ALK Phos, Ammonia, Amylase, AST, Bilirubin- Total and Direct, BNP, BUN, Calcium, Carbamazepine, CEA, Chloride, Cholesterol, Cholinesterase, Co₂, Cortisol, CK, CKMB, Creatinine, CRP, CSF Glucose, CSF Total Protein, Digoxin, Dilantin, Drug Screen, Ferrotom, Fetal Fibronectin, Free T₄, Gentamicin, GGT, Glucose, HDL, HCG, Homocysteine, Ionized calcium, Iron, Ketones, Lactic Acid, LDH, Lipase, Lithium, Magnesium, Microalbumin, Phenobarbital, Phosphorus, Potassium, PSA, Rheumatoid Factor, Salicylate, Sodium, Theophylline, Tobramycin, Total protein, Transferrin, Triglyceride, Troponin- I, T₄, T₃U, TSH, Uric Acid, Vancomycin and Valproic Acid.

The excessive ordering of blood test places a significant financial burden on our health care system and also causes undue discomfort to the patients. Waghlikar et al. [1] studied the effectiveness of pathology ordering controls in emergency departments and concluded that pathology ordering can be reduced using sustainable

protocols. Storrow et al. [2] used a sophisticated simulation model, which suggests that decreasing laboratory turnaround time improves emergency department throughput and decreases emergency medical services diversion. Singer et al. [3] observed that the introduction of a stat laboratory reduces emergency department length of stay that impacts patient satisfaction and overcrowding. Some common wasteful exercises encountered in the pathology laboratory from the medical emergency department are:

- A battery of tests is done on every patient irrespective for the specific test required at that time.
- Testing for the tests when the diagnosis is clinically clear and management can be started or already started.
- Requisition of bundled tests instead of the single most important test for that urgent complaint.
- Asking for the nonspecific tests, when specific tests can better help the patient.
- Improper training of junior doctors or medical emergency doctors in dealing emergencies.
- Non availability of senior doctors at the time of crisis.
- Some technical problems like wrong identification and labelling protocols.
- Wrong collection of blood.

To conclude, this article strengthens the fact that in medical emergencies, pathology should only be used in patients where it assists management decisions and is absolutely critical to the patients care pathway. The junior doctors and medical emergency doctors should be trained and skilled properly for when, which and why to order for tests to ensure the right test at the right time on the right patient. This will definitely be helpful in reducing the budget of the patient and burden on the pathology lab with best outcome for patient in the nick of time.

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