Additional Information for MLS (Medical Laboratory Sciences):

As a MLS, you're aware that Type II Diabetes is a condition which is associated with insulin resistance and glucose intolerance, which means that the cells are no longer responding to insulin's signal to allow glucose in, so glucose stays in the plasma, meaning that the cells are intolerant to glucose. When glucose levels remain high in the blood, blood vessels can become glycosylated or "sugar-coated" so normal circulation is affected.

You know that kidney function can be detrimentally affected by high glucose levels over an extended period of time. The small capillaries within the glomerulus do not filter substances as efficiently as they should, which will affect renal function tests.

You also know that normally lipids from the diet get broken down in the liver and recycled or excreted. In a patient with Type II Diabetes, there is an excess of lipids due to high levels of glucose that get converted to more lipids. These excess lipids start accumulating and lead to the development of arteriosclerosis and atherosclerosis. Atherosclerosis is the accumulation of plaque deposits in the blood vessels throughout the body, which can lead to partial or complete occlusions. Where the occlusions occur make a difference in what organ is most affected.

This patient has been diagnosed with an ischemic stroke, which is a result of an occlusion within one of the small arteries in the brain that has cut off oxygen supply and resulted in a stroke.

Questions:

1. Why are the creatinine levels often elevated in Type II Diabetic patients?

2. Explain the importance of doing a complete lipid panel rather than just total cholesterol:

3. Explain the significance of getting fasting levels versus random when monitoring glucose and lipids levels? Note: the case did not indicate that the patient was fasting, but based on the reference ranges listed, the patient was fasting.

4. Explain the significance of performing a HgbA1C? What does it tell us about how a diabetic patient is keeping their disease under control? What is the ideal level that diabetics should keep their Hgb A1C levels under? How often do Hgb A1C levels need to be monitored?

5. What other testing would be appropriate to monitor renal function and increasing permeability of the renal filtering system? Does age play a role in a decreasing GFR as well?

6. Establish a timeline for collecting follow-up samples after discharge: