RUSH logo for emails

**TITLE: Dilution Protocol Proc. #4840-CH-270**

**PRINCIPLE:**

To establish a protocol when a test exceeds the assay range of a method and an automated or manual dilution is needed. Dilution protocols are established based on the manufacturer package inserts. Many of the assays will automatically perform a dilution when the specimen is above the analyzer’s measuring range (AMR). These re-test rules are programed in the analyzer and requires no action from the operator. However, at times a specimen may exceed the measuring range of a diluted sample. The operator must review the AMR chart to determine if an additional manual dilution is necessary taking into consideration the stated “maximum” dilution allowed. If the sample is still above the linearity when using the maximum dilution, the result is reported as “>” the reportable range.

**PROCEDURE:**

1. Automated dilution- requires no action from the operator, on tests where a re-test rule is in place, the analyzer will hold the sample until the initial result is complete. If the results exceeds the AMR it will automatically re-sample the assay using a dilution.
2. Manual Dilution- If a sample still exceeds the AMR, refer to the AMR table to see what the proper diluent is and manually make a dilution. The dilution factor must be entered in the upper right hand corner of the Patient order screen in the box labeled “Sample manual dilution factor 1:□”. The analyzer will calculate the final result. The manual dilution must be a higher factor than what the analyzer is programmed to make.
3. If a physician requests a higher dilution than our stated maximum dilution, dilute the sample until a result is obtained and report the result using a comment stating “result exceeds our recommended dilution protocol, run by doctor’s request”.

**Do not dilute the following tests:**

|  |  |  |
| --- | --- | --- |
| **Sodium** |  | **Hba1c** |
| **Potassium** | **Phosphorus** |
| **Chloride** | **Procalcitonin** |
| **Albumin** | **Vitamin B12** |
| **Calcium** | **Drugs of Abuse** |
| **DLDL** | **Anti-HCV** |
| **ETOH** | **Core-M** |
| **FT3** | **HAVAB-M** |
| **FT4** | **HBsAg** |
| **Folate** | **Core-M** |
| **GGT** | **HIV** |
| **HDL** | **Syphilis** |
|  |  |

Guide for making a manual dilution:

|  |  |  |
| --- | --- | --- |
| Volume of Sample | Volume of Diluent | Dilution Factor |
| 100ul | 100ul | 2 |
| 100ul | 200ul | 3 |
| 100ul | 400ul | 5 |
| 100ul | 900ul | 10 |
| 100ul | 1900ul | 20 |