1.0 PURPOSE:

Bone Mineral Density (BMD) is a marker for the strength of bone. This is the parameter of interest for investigations involving bone development, restoration, or deterioration. This parameter can be extracted from numerous parts of a specimen.

2.0 SCOPE:

It is be assumed that the individual performing the BMD analysis is familiar with GE MicroView software, consequently the use of GE MicroView software will not be outlined. All procedures can be performed at any computer workstation that has GE MicroView installed.

3.0 RESPONSIBILITIES:

Only an individual who is competent with GE MicroView should perform this procedure.

4.0 DEFINITIONS:

BMC – Bone Mineral Content

BMD – Bone Mineral Density

ROI – Region of Interest

5.0 REFERENCES:

None.

6.0 EQUIPMENT:

- Computer with GE MicroView software.

7.0 PROCEDURES:

7.0.1 LOAD THE VOLUME

1. Run GE eXplore MicroView software.
2. Load a specific volume.
3. The SB3 cortical bone and other materials are required for calibration.

7.0.2 SELECT A REGION OF INTEREST

1. Select a cylindrical or square region of interest.
2. Load a specific volume.
3. The SB3 corticle bone and other materials are required for calibration.

7.0.3 ACQUIRE THE BONE MINERAL DENSITY VALUE

1. Move a ROI to center of the SB3 cortical bone on the calibrator ring. Press ‘M’ to get the mean value of the grey-scale pixel values within that region.

3. Move a ROI to the center of the water calibrator. Press 'M' to get the mean value.
4. In general, the air value is not required. Use the mean values to calibrate the scanned images into Hounsfield units.
5. Verify that the values are correct. Select a region in the water and bone calibrators to make sure that the entered calibrations are correct. (Should be 0 for water and 1000 for bone).
6. Select a ROI whereby the BMD value is desired.
6. Under the "Bone Parameters" menu, check the BMD checkbox.
7. Click "Auto Threshold".
8. Click "Run".
9. Select the "BMD" tab, the BMD value will be displayed (in mg/cc).

NOTE: Depending on what version of GE MicroView is being used and on which platform, the general procedure may vary slightly.

8.0 REPORTING AND DOCUMENTATION:

N/A

9.0 REVIEWS AND REVISIONS:

This procedure shall be reviewed for compliance and effectiveness and revised as necessary.

10.0 ATTACHMENTS and REFERENCE FORMS:

None.