

-----Original Message-----

From: <removed for privacy reasons>
Sent: Tuesday, August 04, 2009 10:40 AM
To: Anderson, Tom
Subject: Save screens only show up in b/w on PACS

Originally, I thought there was just a problem with save screens, but now is not just the save screens that are showing up in B/W. All images are. In summary, we tried 8-bit and 2-4bit save screens, but both appear on the PACS in B/W.

-----Reply Message-----

From: Anderson, Tom
Sent: Tuesday, August 04, 2009 10:47 PM
To: <removed for privacy reasons>
Subject: Save screens only show up in b/w on PACS

For raw images (not savescreens)....

Nuclear Medicine images are comprised of numbers stored within a pixel, and then multiple pixels form an image. For example, a 64 x 64 matrix image has 4096 pixels. Each of those 4096 pixels stores the number of gamma events (counts) that occurred at a specific x/y coordinate. **Whether those counts are displayed in color or black & white is purely a function of the viewing software.** 25 counts in a given pixel could be displayed as red, green, blue, or a shade of grey. The viewing software determines the display properties. For example, in Siemens *syngo* MI APPS, the user can select one of a large variety of lookup tables (color tables) to display an image. Those tables determine how the image is displayed.

For savescreens, not raw images...

Savescreens (called "secondary capture") can be created & saved in either color (24 bit) or black & white (8 bit). However, just because they are created in color does not mean the viewing station will display them in color.

There is a DICOM tag (0028,0004) which determines whether the secondary capture should be displayed in color. For example, in a Siemens Monthly Intrinsic Flood Calibration Savescreen, the image is in grey scale but the border of the page is blue. Therefore, DICOM tag (0028,0004) contains RGB (red, green, blue). That tells the viewing software this is a color save screen. In Siemens terminology, this is called a 24 bit savescreen (8 bits for red, 8 bits for green, and 8 bits for blue).

See the following page for the DICOM tags listed (via [DicomDumper](#)) for the aforementioned Siemens Monthly Intrinsic Flood Calibration Savescreen.

To troubleshoot your issue, whether the raw images appear in color or B&W is purely a function of the viewing station. For the savescreen issue, check DICOM tag (0028,0004) on the affected files.

