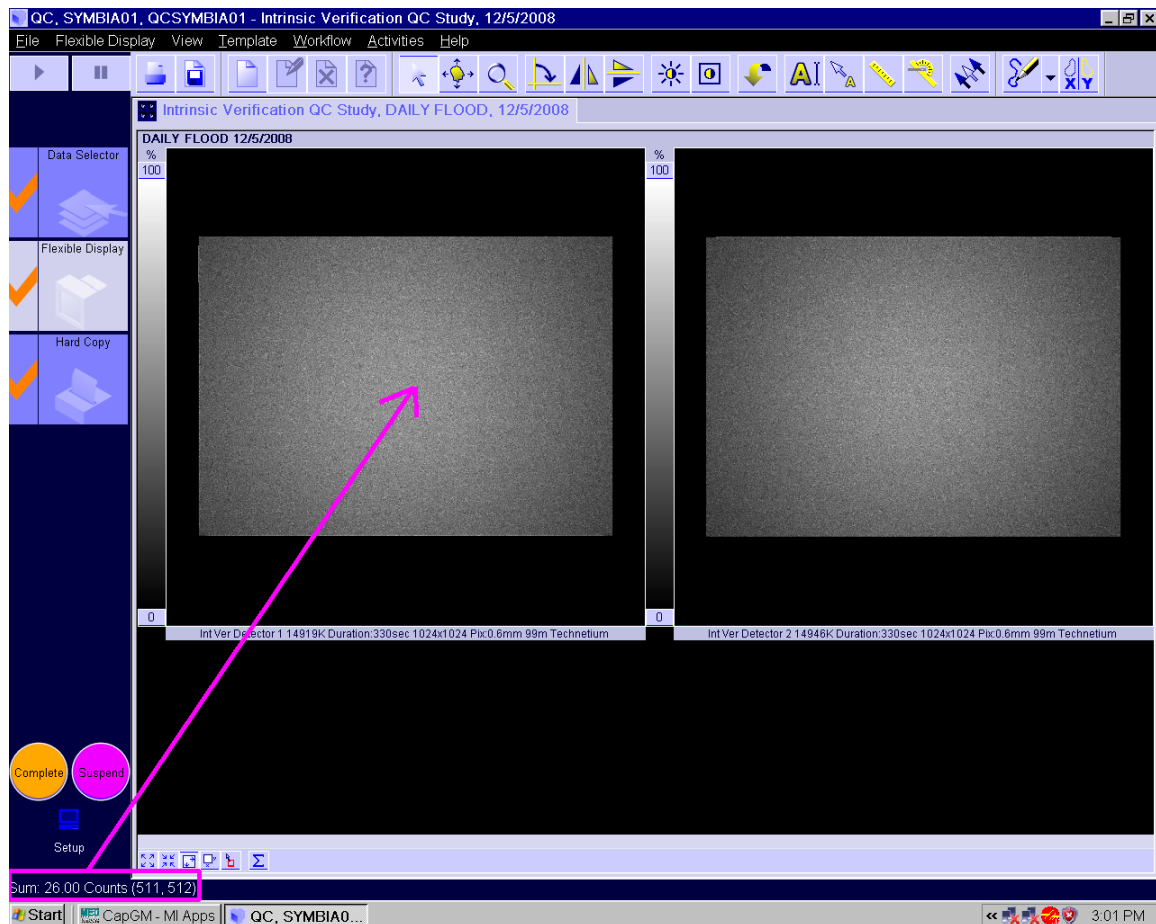

From: <removed for privacy reasons>
Sent: Thursday, December 11, 2008 1:11 PM
To: Anderson, Tom
Subject: Images Retrieved From PACS Will Not Display

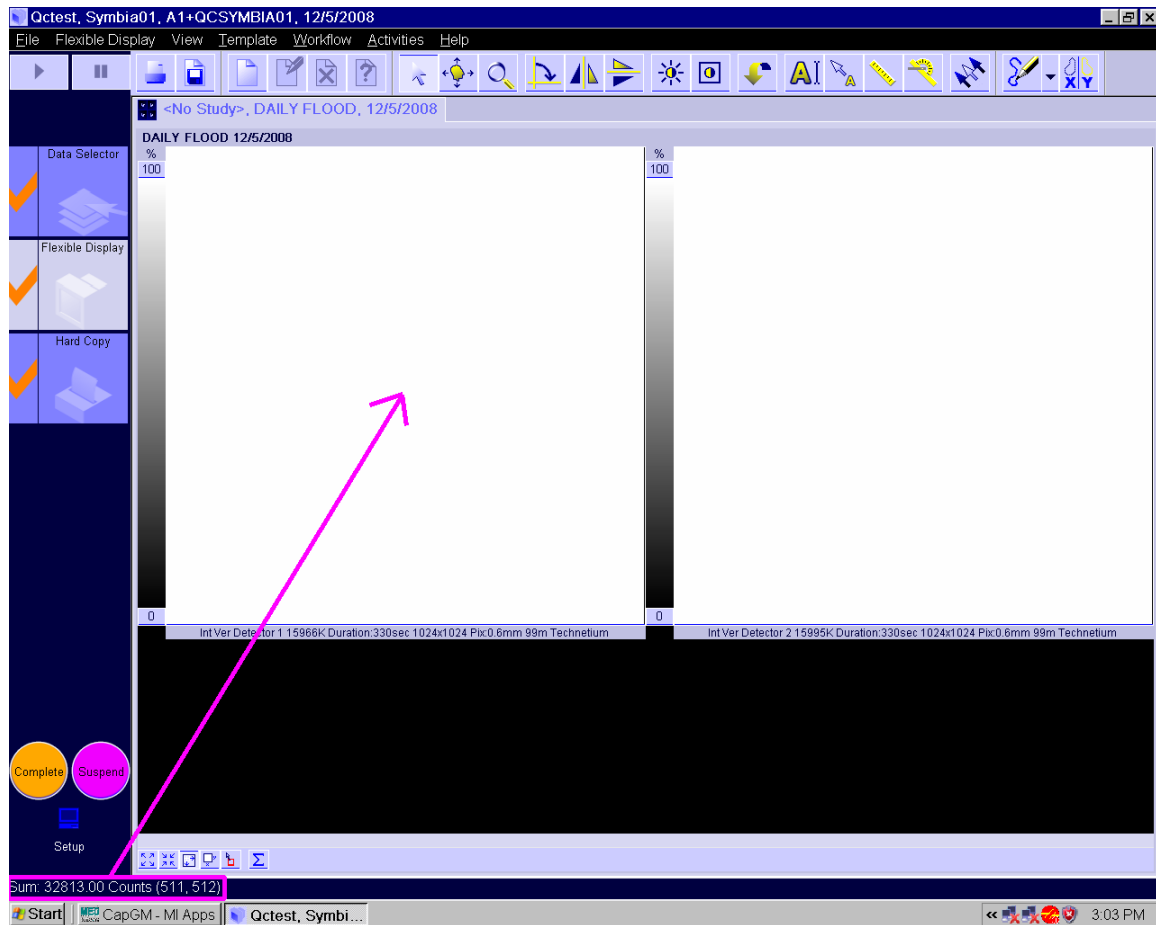
Attached are two images. QCSYMBIA is the original and QCTEST is the same image after it was sent to a McKesson PACS, and then later retrieved back to the original sending computer. QC SYMBIA displays normally, but the QCTEST image is just a white box even though it does show counts in statistics. Let me know what you find.

From: Anderson, Tom
Sent: Thursday, December 11, 2008 3:34 PM
To: <removed for privacy reasons>
Subject: RE: Images From PACS Will Not Display

When the first image (QCSYMBIA) is displayed, each pixel has between 0 and 62 counts. For example, the pixel at location 511, 512 has 26 counts. See below. FYI, the maximum count for any pixel is stored in DICOM tag 28,107. For this image, that DICOM tag contains a value of 62.



After the image is transferred to a McKesson PACS and then retrieved, each pixel shows between 32769 and 32851 counts, even though the aforementioned DICOM tag is unchanged. In other words, even though DICOM tag 28,107 contains a value of 62 for the retrieved image, the images are displayed as though all the pixels have greater than 32,769 counts. For example, the pixel at location 511, 512 has 32,813 counts. See below. Somehow an approximate +32k offset has occurred on each pixel in the image retrieved from PACS. That answers why the image displays completely in white, but does not explain why this occurred.



Comparing the DICOM tags between what was sent to PACS (QCSYMBIA) and what was returned (QCTEST) reveals the root cause of this problem.

A side by side comparison of the DICOM headers (using DICOM Dumper) for each file is shown below. QCSYMBIA is shown on the left, while QCTEST is displayed on the right. You'll notice the image QCSYMBIA was not compressed: there is no tag 28, 2110 in that file. Conversely, the image retrieved from PACS (QCTEST) underwent Lossy Image Compression.

Conclusion: The McKesson PACS is not returning the same image it was sent; rather, it is returning a compressed version of that image – and the viewing station does not support this compression.

