

AbstractID:9665Title :ElectronicTransmissionofGammaKnifeRecordstoRadiationOncologyRecordandVerificationSystemandE-mail.

**Purpose:**

CreateamechanismforpaperlessdocumentationofGammaKnifetreatmentplans(GammaPlan)inPDFformatthatcanbeintegratedintoarecordandverificationssystemforradiationoncology.ThemechanismmustnotviolateFDAapprovaloftheGammaPlancomputerenvironment.

**MaterialandMethods:**

GammaPlanhasaseparatebinarydatabasethatisnotdirectlyimportableintotheMosaicrecordandverificationssystemwithoutthedevelopmentofin-housesoftware,butincorporationof“foreignsoftware”intotheGammaPlanUNIX-basedcomputerplatformwouldviolateFDAapproval.Therefore,amechanismwasdesignedthatusesacombofscriptsintheUNIXenvironmentandgenericWindowsXP-basedPCthat“listens”onthelocalnetwork,toconvertandcombineuserselectedpaperprintoutsintoonePDFfile.Variousother“Freeware”programsinstalledonthePC,whichincludeGhostscript,FictionalDaemon,andImageMagick.UNIXKornshellscripts werewrittenfortheGammaPlanplatformandrelaunchedwheneachdocumentisprintedasaPostScriptfilebyGammaPlan.These files are stored locally before sending them to the PC for conversion to a PDF document. The PDF file is uploaded to the eScan folder of Mosaic for manual importing into the Documents folder. A Korn shell script uses Elm to e-mail the PDF document with a comment and HIPAA notice to the physician’s e-mail account.

**Results:**

The software has been used for 7 months without significant problems. One potential problem is that the PC must be logged on in order for the software to work. We checked that the computer is up and running from the UNIX platform. Also, we had two instances when the PC was running a httpd which blocks communications between GammaPlan and the PC.

**Conclusions:**

The software works well as designed under the constraints imposed by the FDA.