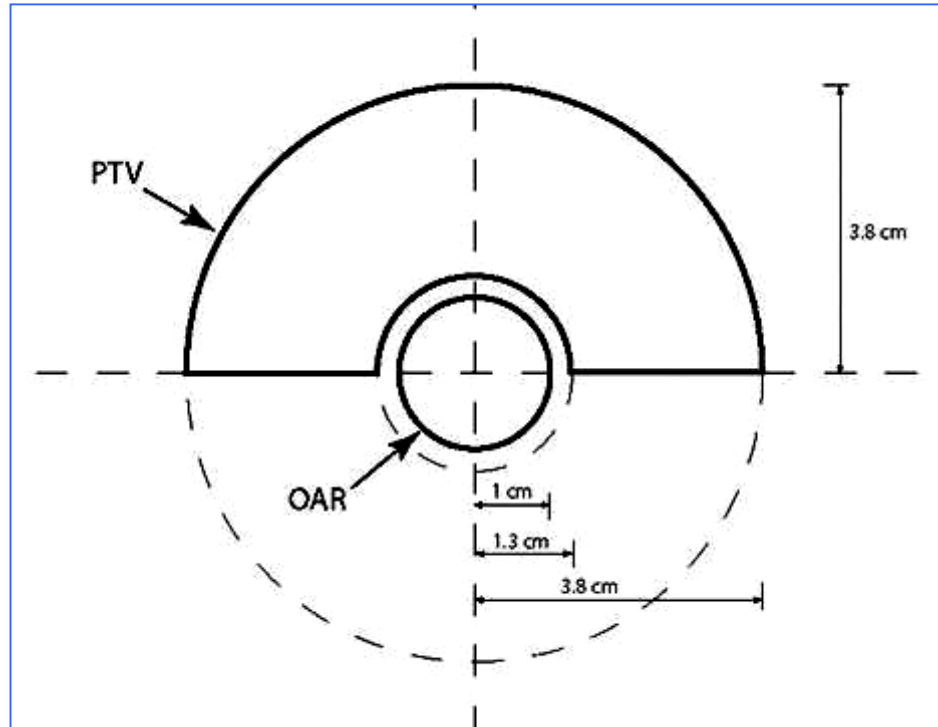


IMRT Benchmark



1st Priority: CNT: <5% volume receive > 60% prescribed dose

2nd Priority: CTV: 100% vol. receive prescribed dose

3rd Priority: CTV maximum 120%

Co-planar 4-9 gantry angles (except arc techniques)

IMRT Benchmark

Dose Verification

Calculated dose transferred to QA phantom

Relative dose distribution in QA phantom
measured in at least one plane and
compared to calculated

Absolute dose verification as routinely
performed in institution

IMRT Benchmarks

Planning Systems:

Plato (Nucletron)

MiMIC (Nomos)

Corvus (Nomos)

CadPlan (Varian)

XPlan (Radionics)

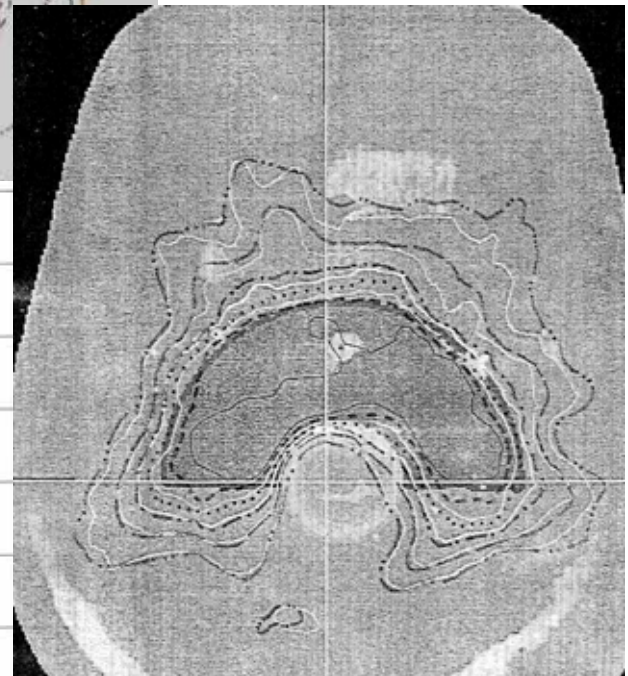
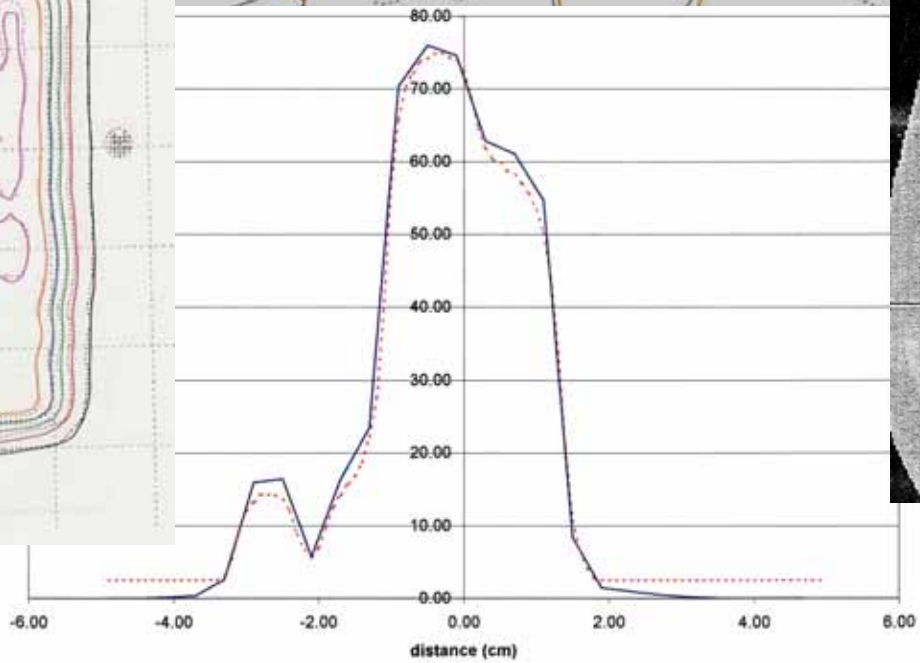
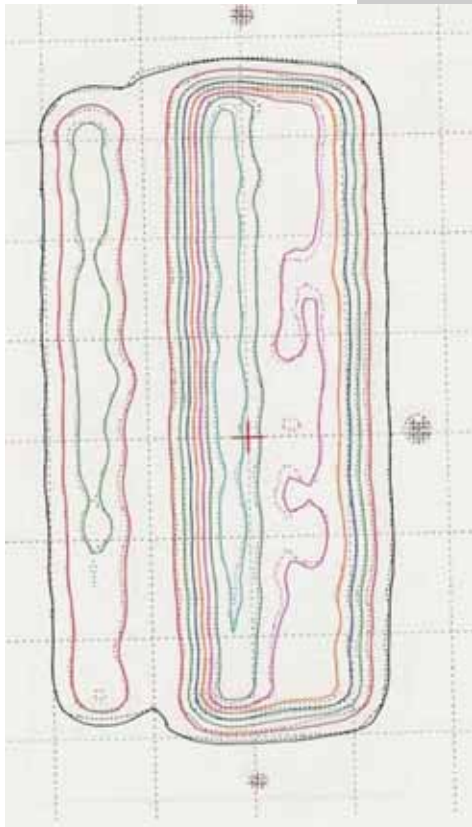
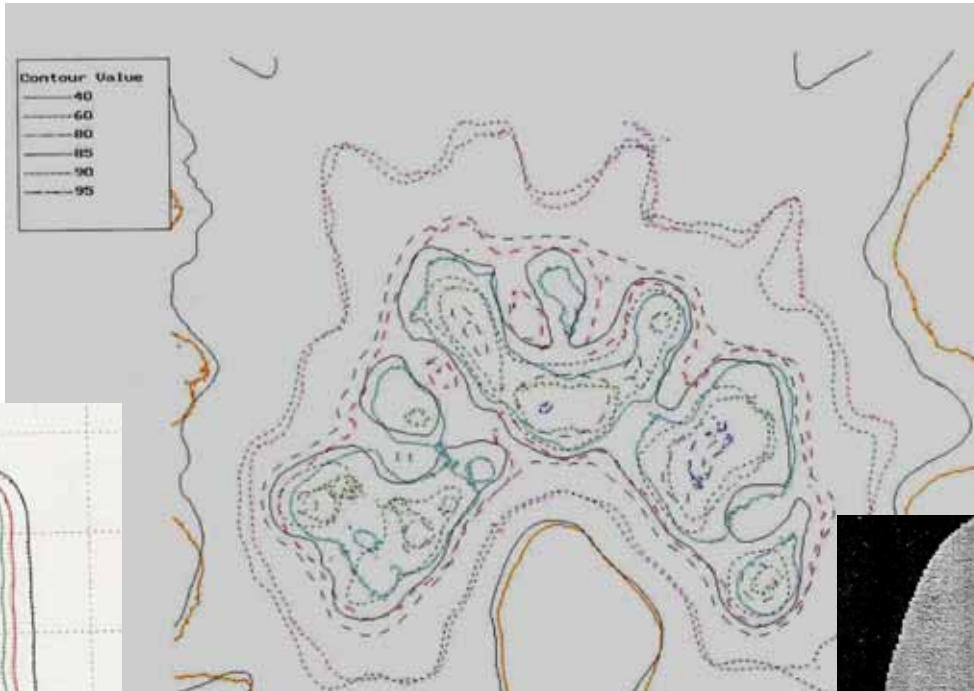
Pinnacle (ADAC)

Eclipse (Varian)

XIO (CMS)

In-House (MSKCC)

BrainScan
(BrainLab)



IMRT Benchmark Dose Summary from which acceptability criteria were developed

	Insitution							
	A	B	C	D	DD	E	F	FF
% vol. CNT >60% dose	0.1	5	0.5	17	4.5	0	5	5
%CTV .>95% dose	95	93	100	98	96	94	96	93
% CTV >90% dose	100	98.5	100	100	98	96	98	96
max dose	120	109	124	122	136	125	130	140
# fields	7	7	7	7	9	9	ARCS	ARCS

Each planning system is represented by a different letter
 (i.e. D & DD are same RTPS but different institutions)

Acceptability Criteria for Treatment Plan

CNT: $\leq 5\%$ volume receive

$> 60\%$ prescribed dose

CTV: 95% volume receive at least

95% prescribed dose

CTV: $< 5\%$ CTV receive $\geq 120\%$

prescribed dose



22 benchmarks/ questionnaires received

12 OK'd

2 Hold: questionnaire OK; awaiting H&N phantom

1 CNT planned dose much too high

1 no patients yet treated

4 inadequate dose verification submitted

2 dose verification discrepancy ($>10\%$ and $>4\text{mm}$)

ATC Method 2 Transfer

- Secure transfer across Internet
- NetSys and WebSys (from RCET)
- Tools for reviewing all data
from server at ITC

Method 2 Status (QARC's perspective)

- Service server at ITC
- High End Review Station at QARC
- Sample data of all types have been submitted successfully by Method 2 by “outside” institutions

Method 2 Status (QARC's perspective)

- **Service server at ITC**
 - Software “frozen”
 - With developmental work ongoing on RCET server it's easier to use and debug the ATC server
 - One group responsible
 - Ease of troubleshooting and “who to call”
 - ITC downloads from ATC server for RT review
 - Dose review using ITC tools from ITC

Method 2 Status (QARC's perspective)

- **High End Review Station at QARC**
 - High quality dual monitors
 - Reasonably fast response
 - Administered by ATC
(in QARC's DMZ zone)
 - Current review tools are working

Method 2 Status (QARC's perspective)

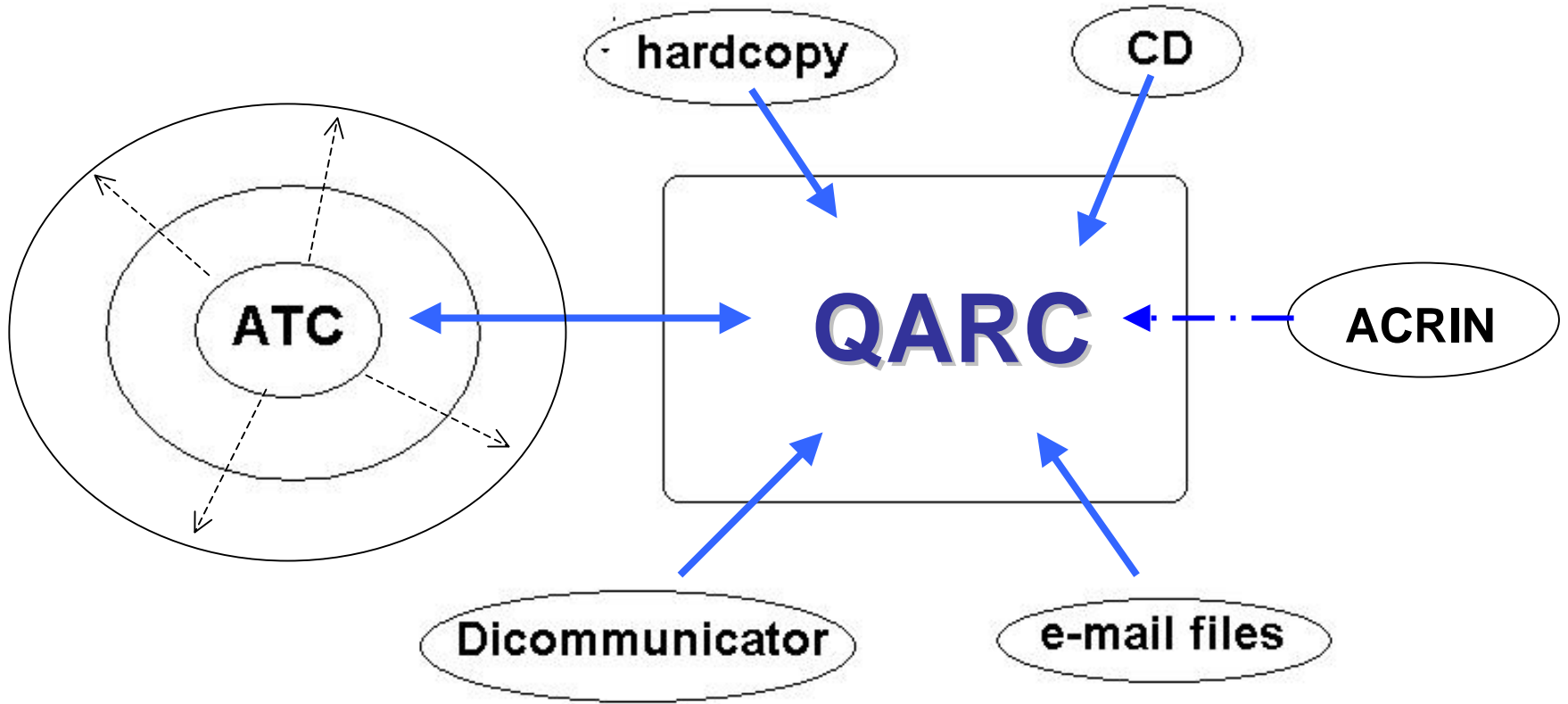
- Sample data of all types have been submitted successfully by “outside” institutions
 - Connell Chu, LDS, Salt Lake City
 - Colin Field, Cross Cancer Inst., Edmonton
 - Tim Fox, Emory, Atlanta

Method 2 Status (QARC's perspective)

- **Sample data of all types have been submitted successfully**
 - Diagnostic CT
 - Diagnostic MR
 - Treatment Plan via DICOM RT
 - Treatment Plan via RTOG format
 - “JPEG”s of DRRs and portal images

Method 2 Status (QARC's perspective)

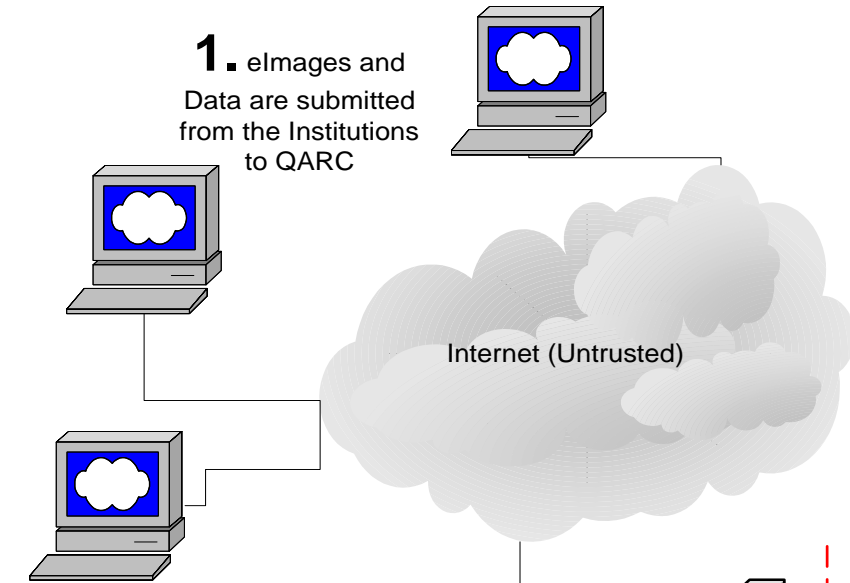
- **No complete data for one patient**
- **No protocol patient data**



How eMaterial is Acquired and Managed at QARC

Various Institutions

1. Images and Data are submitted from the Institutions to QARC



2. Images and Data arrive at QARC via:

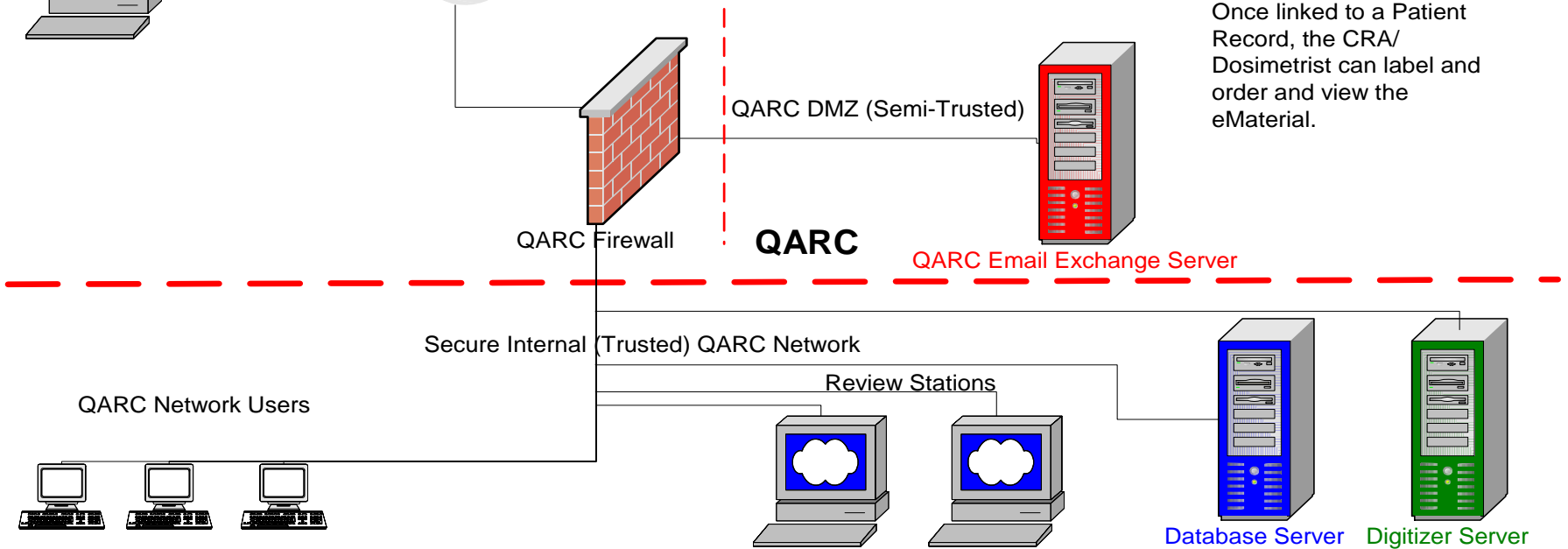
- A. Dicom Communicator/Exchange Server
- B. Email
- C. CD

A. If the Dicom compliant images come in via Dicom Communicator they arrive at our **Email Server**. The **Digitizer Server** (lower right) queries this server automatically. The images are imported and resolved with Patient images in our **Database** - MAX. Then they are linked and viewable from the patient record in MAX.

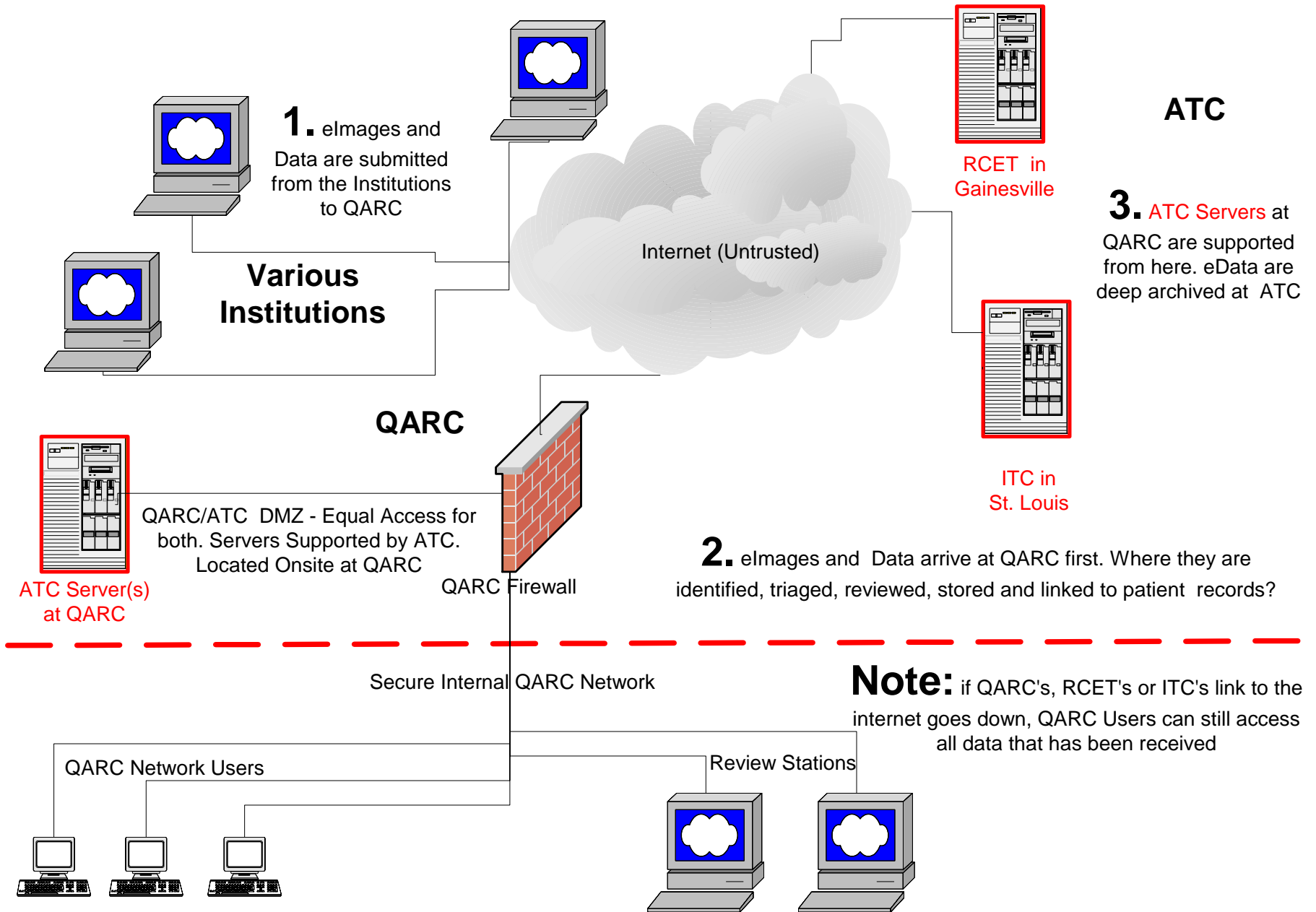
B. If eMaterial is sent via email. The CRA saves the attachments to a folder and determines if the material is Dicom compliant. If so the images are imported into the MAX database using Dicom Communicator. If the images are not Dicom compliant, MAX itself is used to import the images to the Patient Electronic Materials archive and link them to a Patient Record.

C. If eMaterial and images are sent via CD. The procedure is identical to B. except Dicom Communicator or MAX pulls the eMaterials from the CD directly, without CRA intervention.

Once linked to a Patient Record, the CRA/ Dosimetrist can label and order and view the eMaterial.



How eMaterials will be Sent to and Managed by QARC Assisted by the ATC



Dicommunicator Network V1.8.0q

Browse PACS

Manage Coop Group Data

Manager Functions

Version

Help

QUIT