

CO reflection example: quality improvement activity

Title and description of activity or event

Date: March 2015

Comparison of differences in GTV between axially and spirally acquired CT planning scans as contribution to the implementation of IMRT for NSCLC in the department.

Which category of activity does this match?

Quality improvement activity

What have you learned as a result of the activity?

- * This radiotherapy planning exercise demonstrated that GTV varies in size when outlined on CT planning scans acquired using either axial or spiral scanning protocols. Volume can either increase or decrease. The whole lung volume can also vary in the same manner between the two data sets. These changes in volumetric parameters are not related to tumour position in the lung.
- * I am also more aware of how the CT planning datasets are acquired and the difference between conformal and IMRT planning requirements.

What has been the short and long term impact on your professional practice and patient care?

- * In the short term this has demonstrated that, as a department, we cannot utilise CT scans acquired using different protocols interchangeably when planning radiotherapy.
- * In the longer term this planning exercise has contributed to the implementation of an advanced radiotherapy technique within the department, leading to improved patient outcomes.

State any action points to be carried out following this activity

- * An unexpected finding from this exercise was that these volumetric differences mean that V20, a derived measure of lung toxicity, is also potentially significantly altered by changing scanning protocols. My ability to "guesstimate" the V20 (usually reasonably accurate) is now less reliable, so I will have to take more patients at the limit of safe treatment delivery through the planning process to ensure I do not deny treatment to any potentially suitable patients.
- * This exercise has served as a reminder that all process changes may have unforeseen consequences.