

## **Quality Assurance Tools for Frequent, Speedy Assessment of a large field Multileaf Collimator.**

Quality Assurance (QA) of Multileaf Collimators (MLC) compared to a standard monoblock design is increased by a factor equivalent to the number of MLC leaves. This increases time required for QA to an unacceptable value. This results in one of three things happening,

- 1 Available treatment time is reduced.
- 2 QA performed out of normal treatment hours.
- 3 QA of the MLC compromised due to pressure of work.

A practice used at many centres using an MLC for a radical conformal field is to check each required shape against the printed template for the patient's field. This is time consuming and short cuts may occur. Methods and tools are required to speed up the QA process whilst still maintaining high standards. Most checks carried out are of a repetitive nature. Therefore, standardisation must be implemented. Test fields designed to check the MLC in specific setups and positions along with manufactured test tools to enable quick reading or assessment are required. These will go through different levels of QA depending upon who carries them out or the purpose of their implementation. The lower levels would be routine checks carried out daily usually by the machine operators. Other checks on specific functions may be carried out by physics staff. By standardising the methods it should be possible for any person trained in their use to carry out these checks and produce results that do not differ from other staff.