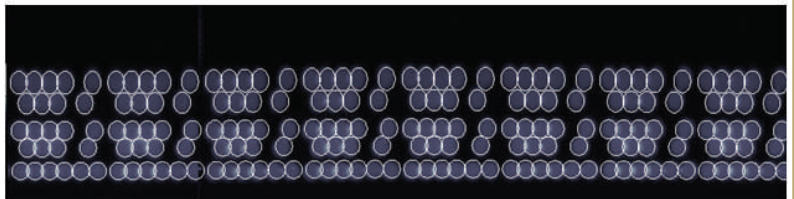
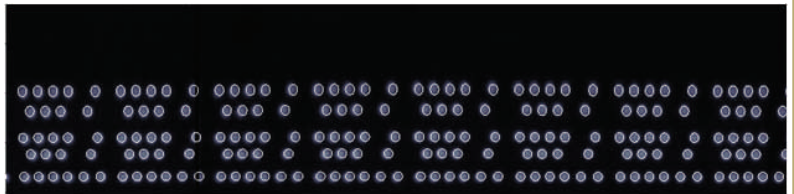


## Stereotactic Radiosurgery Quality Assurance Phantom

### Overview of Technology:

Researchers at the University Health Network have recently developed a novel quality assurance (QA) and verification system for stereotactic radiosurgery systems. Radiotherapy QA is being widely accepted by radiation oncologists and physicists as a necessary step in the treatment process, including the treatment of individual patients. This technology will serve the growing need to calibrate, monitor and verify that stereotactic radiotherapy treatments are providing the intended dosage and reaching their location targets.

Current verification methods involve simple visual inspection, but these methods have serious limitations and disadvantages including the time consuming manual analysis required making results laborious to interpret. The UHN system is able to automatically determine the orientation of any aperture and the corresponding intensity of the stereotactic system. This technology uses an innovative phantom and software combination to verify source and collimator configuration and can fully calibrate systems such as the Gamma-knife® and Gamma-knife® Perfexion™ covering all 192 individual sources.



*Film showing each collimator configuration.*

Due to the nature of radiosurgery, checking the integrity of the collimator systems is a critical QA task related to the accuracy of dose delivery. Ideally, the radiation dose measured during calibration should correlate with the patient's treatment plan to help ensure safe and effective treatment. This technology can safely be used before and after a patient's therapeutic planning to ensure the appropriate treatment is being delivered. Alternatively, this system can be used in daily, monthly, or yearly routine quality assurance equipment checks. This technology is expected to be a disruptive addition to the current stereotactic radiotherapy market and is currently available for world-wide exclusive licensing.

### Patent:

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