

# Low Dose Report

## Comparing Syringeless Injectors to Conventional Syringe Injectors

The Royal Bournemouth and Christchurch Hospitals **NHS**  
NHS Foundation Trust

### Royal Bournemouth Hospital – Introduction

The Royal Bournemouth Hospital is a UK general hospital with around 1,000 beds, serving a population of ½ million people. CT referrals are varied, but there are large cardiac and vascular services on site and so demand for pump-delivered contrast CT is large.

The radiology department has two Aquilion ONE high-end CT scanners, scanning a total of around 22,000 patients each year. A 3rd scanner is being considered for 2015.

### Modern Technology – Scanner

The CT scanners at Bournemouth have the latest hardware allowing ultra-short scan times, even during cardiac examinations. Also, the combination of high output x-ray tubes and the latest image reconstruction techniques has resulted in a reduction in the useable tube kilovoltage (kVp) used for all studies. A consequence of this is that contrast enhancement can be maintained with reduced contrast media doses. Some contrast protocols are now kVp dependent, such as with cardiac or CTPA scanning. 80 kVp is often used and this allows patients to receive just 40 mL instead of 60 to 80 mL of contrast media. For general abdominal scanning, contrast doses are tailored to the patient's weight to improve consistency of portal-venous phase liver enhancement between patients.

To enable this to be achieved without compromising patient throughput, it was crucial that a continuous delivery contrast injector system was employed that would allow differing contrast volumes to be administered to each patient without slowing the process.

### Modern Technology – Injector

Being a syringeless system, the ulrich medical CT motion™ allows rapid changeover between patients regardless of the next injection protocol. There are no syringes to load – the injector delivers



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the contrast media straight from the bottle. Only a single patient line is disposed of per patient resulting in reduced consumable waste. Patient-specific contrast dosing is simple to perform and is achieved without wasting contrast media as there is no unused excess. Saline chasing can be performed every time.

These features have allowed the Royal Bournemouth Hospital to completely modernize their injection protocols and thereby get the most out of their scanner systems. Patient contrast doses have been reduced by at least 25% and significant savings in consumable costs have been achieved.

