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**Standardisation and metrology for High Intensity focused**  
**ultrasound: a clinical perspective**

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The clinical application of HIFU is a young and rapidly expanding field, and it is essential that validated methods for measurement and testing are made available as soon as possible. These issues have not been addressed to date in any systematic fashion. There is, therefore, an urgent need to produce standard registration, testing equipment and methodology to allow users to characterize clinical HIFU systems for checking safety and reproducibility of a machine's output, comparing different devices or commissioning new systems. HIFU is delivered to the target volume via a number of routes. Extra-corporeal and trans-rectal probes are the most commonly used, although preliminary testing of intra-cavitary, catheter based devices is also underway<sup>19</sup>. These different devices present a wide range of different transducer geometries, f-numbers ( $\sim 0.8$ - $1.8$ ), operating frequencies ( $\sim 0.8$  -  $5$  MHz), and focal peak intensities ( $\sim 7.5 \cdot 10^2$  -  $3 \cdot 10^4$  W cm<sup>-2</sup>). Clinical HIFU systems are currently assessed on an ad hoc basis by individual clinical departments and manufacturers, using methods, many of which are unpublished. The main requirements from a clinical perspective are for the quantification of parameters which relate directly to individual HIFU treatments, allow reproducible treatments between different patients, and allow clinical trial data to be compared.