

VRIJE UNIVERSITEIT

**Volumetric modulated arc therapy for stereotactic body radiotherapy:
Planning considerations, delivery accuracy and efficiency**

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor aan
de Vrije Universiteit Amsterdam,
op gezag van de rector magnificus
prof.dr. L.M. Bouter,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de Faculteit der Geneeskunde
op woensdag 19 september 2012 om 11.45 uur
in de aula van de universiteit,
De Boelelaan 1105

door

Chin Loon Ong

geboren te Maleisië

promotoren: prof.dr. S. Senan
prof.dr. B.J. Slotman
copromotor: dr. W.F.A.R. Verbakel

Volumetric modulated arc therapy for stereotactic body radiotherapy: planning considerations, delivery accuracy and efficiency [master's thesis]. Amsterdam: Vrije Universiteit; 2012. 23. Ong CL, Palma D, Verbakel WF, Slotman BJ, Senan S. Treatment of large stage I-II lung tumors using stereotactic body radiotherapy (SBRT): planning considerations and early toxicity. *Radiother Oncol.* 2010; 97:431-6. Prospective trial of stereotactic body radiation therapy for both operable and inoperable T1N0M0 non-small cell lung cancer: Japan Clinical Oncology Group Study JCOG0403. *Int J Radiat Oncol Biol Phys.* 2015; 93:989-96. PhD Thesis title: "Volumetric modulated arc therapy for stereotactic body radiotherapy: planning considerations, delivery accuracy and efficiency". Author: Chin Loon, Ong Email: c.ong@vumc.nl Institution: VU university medical center, Amsterdam, The Netherlands Supervisors: Prof. Dr. Suresh Senan; Prof. Dr. RapidArc (Varian Medical Systems) is a form of volumetric modulated arc therapy, which is IMRT delivery during a 358° gantry rotation. During delivery, a conformal dose distribution can be generated by varying dose rates, gantry speeds and leaf apertures created using a dynamic multi-leaf collimator (MLC).