

Table 1**Major milestones in the history of IMRT (Adapted from Cho 2018)**

Year	Investigators	Milestone
1982	Brahme et al. (A Brahme et al., 1982)	Solving of an ‘inverse’ problem of rotational beam fluence to deliver a uniform dose to a donut-shaped target
1984	Brahme (Anders Brahme, 1987)	First commercial MLCs patented by Brahme and commercialized by Scanditronix
1988	Brahme (Brahme, 1988)	First paper on algebraic inverse planning
1989	Webb (Webb, 1989)	Cast the inverse planning problem as an optimization problem that minimizes an objective or ‘cost’ function
1990	Bortfeld et al. (T. Bortfeld et al., 1990)	Developed algebraic/iterative optimization for inverse planning
1991	Boyer et al. (Boyer et al., 1991)	Developed principle of multiple segmented-field IMRT
1992	Convery and Rosenbloom (Convery & Rosenbloom, 1992)	Developed principle of sliding-window technique IMRT
1992	Carol (M. P. Carol, 1995)	First full IMRT system, based on serial tomotherapy, was introduced. NOMOS MIMiC binary MLC and simulated annealing optimization inverse planning (Peacock Plan)
1993	Mackie et al. (Mackie et al., 1993)	Concept of helical tomotherapy
1994	Svensson et al. (Svensson et al., 1994) Spirou and Chui (Spirou & Chui, 1994) Stein et al. (Stein et al., 1994)	Independent finding of optimal and analytic solutions for sliding-window leaf trajectory problem by three research groups (Karolinska group in Stockholm, MSKCC group in New York, and DKFZ group in Heidelberg)
1994	Bortfeld et al. (T. R. Bortfeld et al., 1994)	First multiple-static-field (MSF) experiments
1994	Carol et al. (M. Carol et al., 1996)	First IMRT treatment using serial tomotherapy (NOMOS MIMiC)
1995	Ling et al. (Ling et al., 1996)	First MLC-based IMRT at the Memorial Sloan Kettering Cancer Center
1995	Yu (Yu, 1995, p. 19)	Intensity-modulated arc therapy; proposed as a tomotherapy-mimicking IMRT using a linac
2002	-	Tomotherapy released commercially
2007	Otto (Otto, 2008)	Volumetric-modulated arc therapy: IMRT in a single gantry arc
2010	Bogdanich (Walt Bogdanich, 2010)	New York Times IMRT accident reports