



<b>Title</b>	<b>Assessment of Intensity-Modulated Radiotherapy</b>
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## Aim

To assess the efficacy, safety, availability, and economic aspects of intensity-modulated radiotherapy (IMRT).

## Conclusions and results

- The term “intensity-modulated radiotherapy” covers different technologies. There is no consensus definition of IMRT. IMRT is significantly more complex than any other radiotherapy technique, and requires rigorous and specific quality assurance.
- The 8 clinical trials selected presented a low level of evidence: a dose-escalation study and 7 case series, only one of which was a prospective study.
- The literature review provided insufficient information to determine a clinical risk/benefit ratio for this emerging technique. Limited clinical data show that IMRT is feasible for treating prostate, head /neck, central nervous system, breast, and gynecological cancers.
- Investment in IMRT depends much on the equipment and staff already available within the healthcare organization. A cost/efficacy ratio for IMRT could not be determined as no studies of adequate design quality were found.
- The practice survey reflects the current availability of IMRT in France: 87.7% of centers that responded did not use the technique, but 46.5% planned to introduce it within the next 3 years. Twelve centers had treated 159 patients between June 2000 and December 2002, mainly for prostate cancer (79.9%) and head and neck cancer (17%).

## Methods

ANAES searched the MEDLINE, EMBASE and Pascal databases, useful websites, and the grey literature (between 1995 and 2002). Studies were selected according to their level of evidence and design quality (using review checklists). As there was little information in the literature, ANAES carried out a quantitative (postal

questionnaire) and qualitative (onsite visits) practice survey. A working group (10 experts) and a multidisciplinary peer review group (13 experts), recruited from the relevant professional societies, validated the report.

## Further research/reviews required

- IMRT is an emerging external radiotherapy technique. Its clinical applications have yet to be studied.
- Specific guidelines for this technique need to be drawn up to define the optimum human and equipment resources, quality assurance, and training for care staff.