# Starting priority radiotherapy treatments quickly

**Descriptor:**

An audit of time taken until radiotherapy starts for priority patients (those with rapidly-progressing tumours being treated curatively and for whom radiotherapy is the first and critical intervention, such as HNSCC) with analysis of treatment planning process workflow and re-audit after implementation of streamlined pathway. Delays to starting radiotherapy may be detrimental to survival outcomes hence streamlined treatment planning pathways could improve cure rates [1].

**Background:**

Modern radiotherapy planning is a complex multistep process involving many professionals working across several different teams including oncologists, radiographers, dosimetry & medical physics and patients cannot start treatment immediately. Most steps are sequential, depending on the completion of the previous stage and must be scheduled in advance to help each team manage its workload and allocate resources effectively and efficiently. Many of the steps are limited in their possible scheduling by capacity in equipment and staff availability. Scheduling of the steps can be sometimes difficult due to uncertainty about the length of time needed for each stage to be completed.

Occasionally patients suffer progressive disease between planning and starting treatment which necessitates further work to modify treatment plans or may mean they can no longer have a hope of being cured of the their malignancy, if the disease has extended beyond the region which can reasonably (or safely) be treated with a curative radiotherapy schedule.

Some cancers such as head & neck squamous cell carcinoma are known to progress more quickly and meta-analyses have shown "statistically significant associations between delay and the risk of local recurrence in head and neck cancer and breast cancer” [3,4].

## The Cycle

**The standard:**

Department of Health guidelines set a maximum of 31 days to first fraction from 'ECAD' (Earliest Clinically Appropriate Date), the point at which the patient themselves is ready to start treatment or the date of consent/planning request from the clinician if there is no other reason for delay [5].  This audit regards the aim for high-priority patients to be able to start treatment more quickly.

**Target:**

Patients with rapidly-progressing tumours being treated curatively and for whom radiotherapy is the first and critical intervention to start treatment within 14 days.

## Assess local practice

**Indicators:**

Time taken from ECAD to first fraction.

**Data items to be collected:**

• Primary site of disease

• Treatment intent

• Prior/ other treatment

• Social or medical conditions impacting treatment planning

• Length of time from ECAD to first fraction

• Length of time taken for each step in treatment planning process (time to planning CT, time to contouring, time to physics planning, time to check/QA, time to first fraction)

**Suggested number:**

All patients in the chosen cohort (not likely to be large numbers) treated during a set period of time e.g. three months.

**Suggestions for change if target not met:**

• Analysis of time taken at each step of planning process to identify potential 'bottle-necks' or 'rate-limiting steps'

• Identification of social or medical patient factors hindering planning process

• Examination of planning team working arrangements:

   - Are the different components of the planning process scheduled appropriately (i.e. has the right amount of time for each step been allocated for each teams work to be completed)?

   - Can more than one member of staff perform a task as soon as it is needed, rather than waiting for one particular person?

• Examination of planning team communication methods:

   - Can email or other digital methods such as remote access be used to avoid delays in waiting for a person to document or approve a decision?

• Repeat audit recommended after intervention and after suitable time period e.g. one year

**Resources:**

Personnel:

• Radiotherapy department data manager

• Representatives from planning team (clinical oncologist, planning radiographer/dosimetrist, medical physics)

**References:**

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3. Huang J, Barbera L, Brouwers M, Browman G, Mackillop WJ. Does delay in starting treatment affect the outcomes of radiotherapy? A systematic review. J Clin Oncol. 2004; **21**:555-63.
4. Mackillop WJ, Bates JH, O’Sullivan B, Withers HR. The effect of delay in treatment on local control by radiotherapy. Int J Radiat Oncol Biol Phys. 1996; **34**: 243–50.
5. Department of Health. Cancer reform strategy. December 2007

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