**RAISING A VOICE FOR THOSE AFFECTED BY CANCER**

# Radiotherapy benchmarks for cancer treatments, from the consumers perspective.

Radiotherapy is estimated to be a necessary component of care in approximately 52% of all cancers, based on detailed modelling by Delaney & CCORE[1]. The intent of the radiotherapy treatments may be for cancer cure, prevention of relapse or relief from cancer symptoms, and radiotherapy may be the only treatment or used in conjunction with surgery and/or chemotherapy. A brief, consumer-friendly overview of radiotherapy services can be found at "A Guide to Radiotherapy"[2].

Benchmarks and performance indicators can provide useful measures of workload and service performance to compare sites against 'best practice' guidelines; they are also used to monitor continuously for 'quality improvements' (hopefully) and help identify bottlenecks or other problems.

Impact on patients from delays, poor access and equity of access to radiotherapy services, aging machines, out of date methodologies ….. are all areas of concern to consumers and should also be benchmarked and monitored. Specific concerns include

- Treatment compliance with best practice clinical guidelines
- Delays/ Waiting times –
    - for radiation oncologist specialist appointment
    - from referral to start of treatment
    - on treatment day – the wait from appointment time to actual treatment!
- Access and equity barriers for
    - Type of cancer
    - Rural patients
    - Indigenous patients
    - Culturally and linguistically diverse patients
    - Age groups – young and old
    - Gender
- Information and communication

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[1] **Radiotherapy: developing a world class service for England** -**May 2007**
1 Delaney GP, Jacob S, Featherstone C, Barton NB. Radiotherapy in cancer care; Estimating optimal utilisation from a review of evidence-based clinical guidelines. Collaboration for Cancer Outcomes Research and Evaluation (CCORE). Liverpool Hospital, Sydney Australia, 2003
2 Delaney GP, Jacob S, Featherstone C, Barton NB. The role of radiotherapy in cancer treatment: estimating optimal utilisation from a review of evidence-based clinical guidelines. Cancer 2005; 104: 1129-37. doi.wiley.com/10.1002/cncr.21324
[2] A guide to radiotherapy (Nov 2006, PDF, 10 pages)
www.**cancer**improvement.nhs.uk/%5Cdocuments%5C**radiotherapy**%5CA_Guide_to_**Radiotherapy**_Nov06.pdf

In view of these consumers concerns, a review of available published material on radiotherapy benchmarks and performance indicators was undertaken. Factors considered included the need for:
- o Achievable and realistic measures ie. not too onerous to collect and make available for routine monitoring. Where possible, make full use of routinely collected data.
- o Data quality:
- o



Completeness     Timeliness     Accuracy

In summary, proposed cancer radiotherapy performance measures for each centre are:
- A benchmark rate of 52% of all diagnosed cancer patients receiving radiotherapy.
- The number of new patients who commenced radio therapy
- % patients treated within best practice clinical guidelines for RT
- waiting times for patients
- % patients commencing treatment within an accepted standard timeframe
- The number or % of patients who commence and complete RT treatment in categories where access and equity may be a concern.
- % patients commencing treatment with satisfactory provision of information and opportunity to ask questions

Draft details of the benchmark or indicators, the data needed to be collected or used, suggested reporting frequency and other factors for consideration are outlined in Table 1. More detail of radiotherapy performance benchmarks and indicators in Australia and overseas that were found in the available open access published resources are presented in Appendix 1. Note that the majority of references address aspects of waiting times.


*"Trying harder will not work anymore.*
*Only redesign of our health care systems can make a lasting difference…."*

                     *'Crossing the Quality Chasm', Institute Of Medicine, USA 2001*


April 2008

Table 1. Draft Radiotherapy (RT) Performance Indicators

| Radiotherapy (RT) Performance Indicators | | | | |
|---|---|---|---|---|
| **Purpose/ Performance objective** | **Benchmark or indicator** | **Details to collect** | **Frequency of reporting** | **Comments** |
| Ensure all eligible patients are offered radiotherapy | 52% of all diagnosed cancer patients receive RT | o Total number of cancer patients diagnosed.<br>o Number of patients commencing RT<br>o Number offered RT<br>o Reason patients refuse or not eligible | Quarterly? | Discrepancy between optimal (52%) and actual rates may be due to limits of service capacity as well as patient factors such as physical limitations from cancer with comorbidities, patient choice/refusal etc. |
| Workload of RT service | Number of new cancer patients commencing RT | o Number of 'new' cancer patients **commencing** RT<br>o Total number of cancer patients receiving RT | Monthly? | |
| Compliance with best practice clinical guidelines for RT | % patients treated within best practice clinical guidelines for RT | o Number of patients receiving **full course** of treatment as per guidelines<br>o Number and reason(s) for deviation from protocol | Quarterly? | Need to have written guidelines for radiotherapy treatments and duration. |
| Delays/ Waiting times | Waiting times<br>o for radiation oncologist specialist appointment<br>o from referral to start of treatment<br>o on treatment day – the wait from appointment time to actual treatment!<br>Proportion of patients seen | o Date of referral to radiation oncologist<br>o Date seen by radiation oncologist<br>o Date of first RT treatment<br>o Appointment time<br>o Commence appointment time | | 'Acceptable timeframe' – adopt UK recommendations as shown in Appendix 1? Ie. Treatment within 31days.<br>Treatment-Urgent: 2 days, Palliative: 2 weeks, Radical: 4 weeks? |

| Radiotherapy (RT) Performance Indicators | | | | |
|---|---|---|---|---|
| **Purpose/ Performance objective** | **Benchmark or indicator** | **Details to collect** | **Frequency of reporting** | **Comments** |
| | within acceptable timeframe | | | |
| Overcome access and equity barriers to compliance with best practice RT treatment | Number and % of new cancer patients in each category who commence and complete RT:<br>o Type of cancer<br>o Rural patients<br>o Indigenous patients<br>o Culturally and linguistically diverse patients<br>o Age groups – young and old<br>o Gender | o Use routinely collected data ie cancer type diagnosed, postcode, indigenous status, country of birth / speak language other than english, age, gender | Quarterly | (%=proportion of total diagnosed in this category).<br>If necessary, collect additional info eg.<br>% patients who are required to travel long distance or stay overnight for RT; |
| Information and communication | All patients are provided with written information prior to commencing treatment. | o Treatment Consent form provides a record that information has been given and understood to patient's satisfaction. | | Breastscreen Australia Accreditation Standards (2004) Performance Indicators[3] may be useful as guides eg. 3.3 (p90) Patients are offered the opportunity to ask questions in private before giving consent to any procedure and health care providers are available to answer any clinical questions. |

See Appendix 1 (overleaf) for examples of performance measures used in Australia and overseas.

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[3] BreastScreen Australia Accreditation Standards   www.**breastscreen**.info.au/internet/screening/publishing.nsf/Content/br-**accreditation**/$File/**standards**.pdf

**Appendix 1**

**Examples of radiotherapy performance measures used in Australia and overseas.** (NB Literature from open access sources only**).**

| Country/state | Benchmark/ indicator | Measures | Definitions/ Notes |
|---|---|---|---|
| UK National Health Service | **Cancer Waiting times** [4]<br>**31 days** from decision to treat to first definitive treatment<br>62 days from urgent GP referral to first definitive treatment<br>**Cancer Standards**<br>(JCCO 1993)[5] recommendations<br>**Urgent** patients treated within 24 hours (good practice) to maxm wait of 48 hours (acceptable)<br>**Palliative** patients treated within 48 hours (good practice) to maxm wait of 2 weeks (acceptable)<br>**Radical** patients treated within 2 weeks (good practice) to maxm wait of 4 weeks (acceptable)<br>o | % seen within target recommended wait times | In April 2006, 37 radiotherapy centres in England reported (via the National Cancer Waits Database) treating 98% or more of patients within 31 days. A further 8 radiotherapy centres reported performance between 88% and 98%. However, overall only 15% of patients receive radiotherapy as their first treatment (more often it is given after other treatment such as surgery). When all patients receiving radiotherapy are taken together (ie. those where it is first or subsequent treatment) it is estimated by NRAG that around 50% of patients are not currently receiving treatment within one month of being ready to treat – the good practice standard set by the JCCO.<br>• **Radical RT** – radiotherapy administered as the main treatment with the aim of curing the cancer.<br>• Planning population radiotherapy capacity algorithms are available in the document The Provision and Replacement of Radiotherapy Equipment and Survey of Radiotherapy Services in England 1999 and Europe 2000[6]. |

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[4] Cancer Services Collaborative Improvement Partnerships, Radiotherapy Toolkit http://www.ebc-indevelopment.co.uk/nhs/radiotherapy/tools.html

**Appendix 1**

**Examples of radiotherapy performance measures used in Australia and overseas.** (NB Literature from open access sources only**).**

| Country/state | Benchmark/ indicator | Measures | Definitions/ Notes |
|---|---|---|---|
| Canada | o **Ready to treat to start of treatment**[7]: patient will receive the first treatment within **four weeks (28 days)** of being ready to treat<br><br>o **Treatment Targets**<br>  o *1 day*<br>  o *7 days*<br>  o *14 days* | o *Median and 90th percentile number of days waited from referral to a radiation oncologist to start of radiation treatment for new cancer patients.*<br>o *% within target*<br>*See Figure 1 Quarterly reports of median wait time in weeks for all RT patients from Referral to start of treatment. Additional chart options*<br>  o *Referral to consult*<br>  ▪ *Ready-to-treat to start of treatment)*<br>*Figure 2 & Table 3 % within target by type-of-cancer, for*<br>  o *Referral to consult*<br>  o *Ready-to-treat to start of treatment)* | • **Ready to treat to start of treatment:** *The time from when the specialist is confident the patient is ready to begin treatment to the time the patient receives treatment.*<br>• **Referral to consult:** *The time between a referral to a specialist to the time that specialist consults with the patient.*<br>• *The median wait time is the time at which 50% of all patients have started treatment and 50% have not.*<br>• *The 90th percentile is the time by which 90% of all patients have started their treatment.*<br>*Wait times data now includes patients who received prior chemotherapy and other treatment, and had planned waits due to personal or work-related reasons.* |

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[5] In 1993 the Joint Council for Clinical Oncology (a joint group bringing together both the Royal College of Radiologists and the Royal College of Physicians) set good practice standards for radiotherapy waiting times.
[6] Equipment, Workload and Staffing for Radiotherapy in the UK 1997–2002. Royal College of Radiologists publication.
http://www.rcr.ac.uk/index.asp?PageID=149&PublicationID=185#Anchor-35882
[7] Radiation treatment wait times http://www.cancercare.on.ca/english/ocs/wait-times/radiationwt/

**Appendix 1**

**Examples of radiotherapy performance measures used in Australia and overseas.** (NB Literature from open access sources only**).**

| Country/state | Benchmark/ indicator | Measures | Definitions/ Notes |
|---|---|---|---|
| NSW, Australia | **Benchmark: 3weeks waiting time** | Median waiting times (days) (see example in Figure 3 chart )[8] | NSW Health receive a weekly report directly from each public hospital equipped with linac machines. **Where to From Here**[ppt] Presented by Matthew Mikus-Wellings, Cancer Institute NSW. ▪ understand the patient pathway through the full course of treatment; ▪ understand what the patient experiences and identify the points in the process causing problems & bottlenecks; ▪ understand complexity of treatments and casemix. ▪ is demand constant throughout year? Are there regular peaks and troughs in demand? |
| Australia | 52% of all diagnosed cancer patients[9] receive RT | | The data required for this process are * data on distribution of the various pathological subtypes * data on the stage distribution of the different cancer sites * data on surgical clearance * patient fitness and co-morbid diseases * presence or absence of focal symptoms |

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[8] Median waiting times in **QI in Radiation Therapy: You don't have to climb Everest!!**[ppt] Guest Presentation by Ms Marianne Rinks, Chief Radiation Therapist, Sydney Radiotherapy & Oncology Centre

[9] Optimal radiotherapy utilisation modelling - methodology http://www.scotland.gov.uk/Publications/2006/01/24131719/20

**Appendix 1**

**Examples of radiotherapy performance measures used in Australia and overseas.**  (NB Literature from open access sources only**).**

Figure 1 & 2  Canadian examples of Wait-Time monitoring.
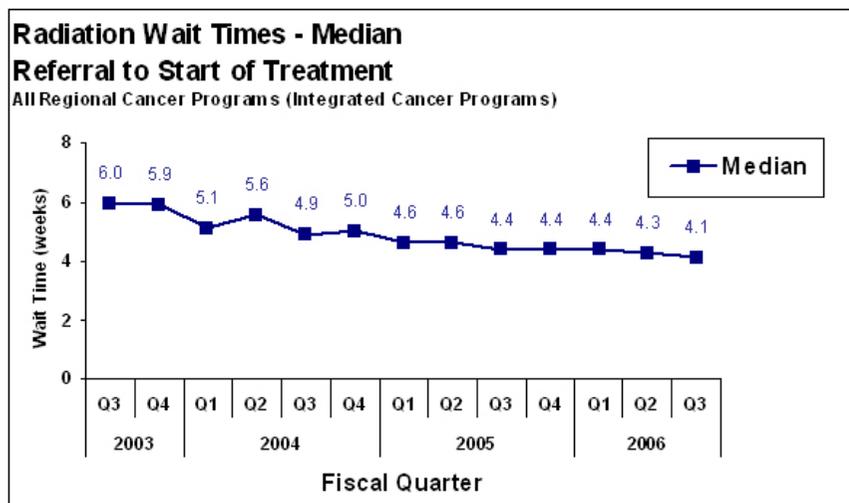


**Quarterly Trends by Target by Regional Cancer Centre**
View Referral to Consult Wait Times Chart
View Ready To Treat to Treatment Chart
**Quarterly Trends by Target by Type of Cancer**
- Breast Cancers
- GU (Genitourinary cancers e.g. Prostate, Bladder cancers)
- Lung cancers
- GI (Gastrointestinal cancers e.g. Esophageal, Colon and Stomach cancers)
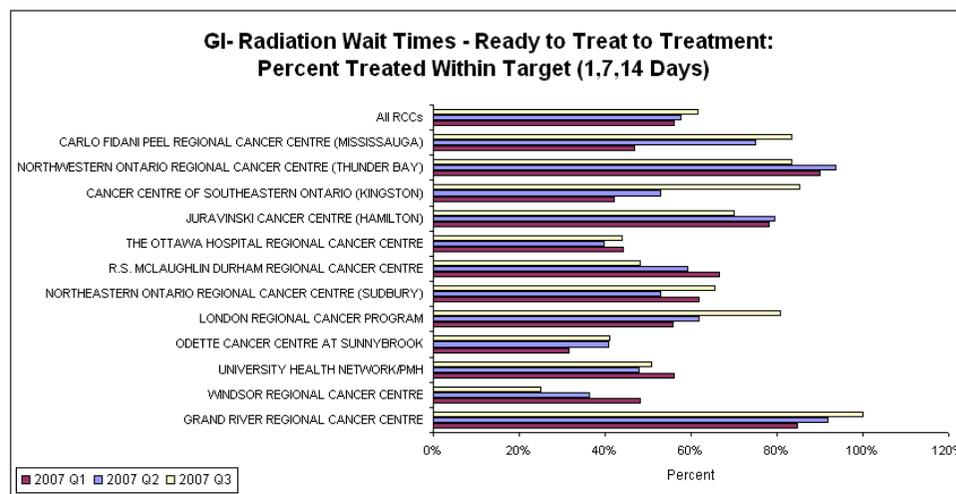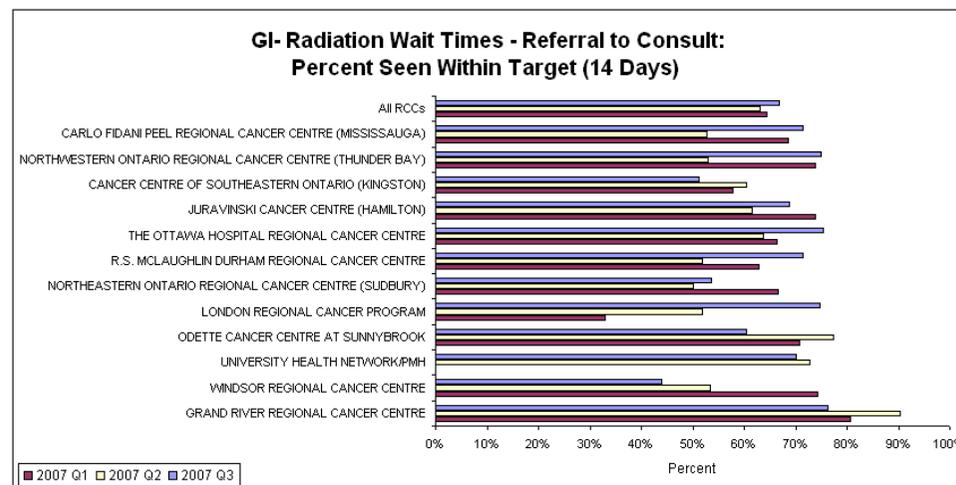


Data Source: ALR/Databook
Prepared by: Informatics
Date: March 3, 2008

**Appendix 1**

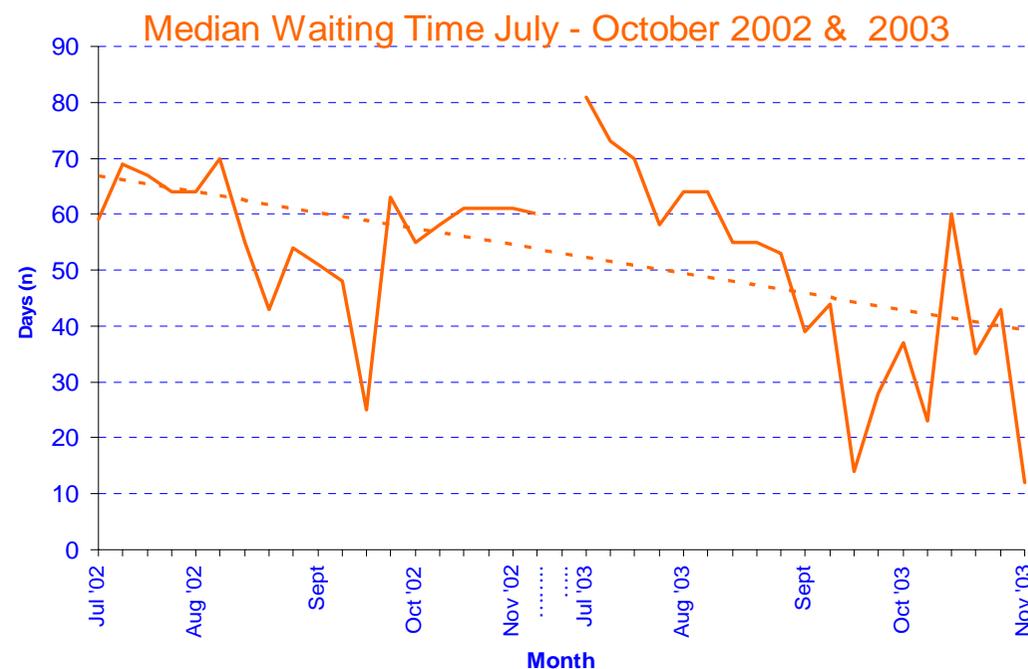**Examples of radiotherapy performance measures used in Australia and overseas.**  (NB Literature from open access sources only**).**

Table 2

Figure 3 NSW Routine RT patients waiting time [10]

**Radiation Treatment Wait Times**
**January 2008**

| TYPE OF CANCER | Referral to Consult Percent of Patients Seen Within Target (14 days) | Ready to Treat to Treatment Percent of Patients Treated Within Target (1,7,14 days) |
|---|---|---|
| **All Sites** | **47.7%** | **53.4%** |
| Breast | 30.2% | 54.8% |
| Central Nervous System | 72.9% | 50.0% |
| Gastrointestinal | 52.0% | 58.1% |
| Genitourinary | 54.2% | 42.2% |
| Gynaecological | 39.3% | 46.4% |
| Head and Neck | 61.3% | 35.6% |
| Haematology | 48.6% | 69.4% |
| Lung | 65.1% | 68.9% |
| Melanoma | 60.9% | 59.1% |
| Other | 39.4% | 56.7% |
| Primary Unknown | 72.3% | 61.1% |
| Prostate | 54.2% | 38.3% |
| Sarcoma | 44.4% | 54.8% |
| Skin | 38.5% | 51.9% |



NSW Routine Patients Waiting Time

Median Waiting Time July - October 2002 & 2003

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[10] Median waiting times in **QI in Radiation Therapy: You don't have to climb Everest!!**[ppt] Guest Presentation by Ms Marianne Rinks, Chief Radiation Therapist, Sydney Radiotherapy & Oncology Centre

**Appendix 1**

**Examples of radiotherapy performance measures used in Australia and overseas.** (NB Literature from open access sources only**).**

Additional 'Australian overview' references

A.  Radiotherapy in Australia one year after the Baume (2002) report. ...www.mja.com.au/public/issues/180_02_190104/bar10717_fm.html

        Radiotherapy in cancer care: estimating optimal utilisation from a review of evidence-based clinical guidelines. Sydney: Collaboration for Cancer Outcomes -

B  Review of Radiotherapy Services Victoria – overview and recommendation  http://www.dhs.vic.gov.au/ahs/archive/radiotherapy/rtr1.htm