

# Follow-up of Stage I-III NSCLC: Who, When and How?

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## BACKGROUND

- International Guidelines vary in their recommendations for follow-up (FU) after treatment for Non-Small Cell Lung Cancer (NSCLC)
- Australian<sup>5</sup>, ACCP<sup>6</sup>, ESMO<sup>7</sup> and NCCN<sup>8</sup>: 6m for 2/3 y and yearly thereafter.
- ASCO<sup>2</sup>, Canada<sup>3</sup>, and Chinese<sup>4</sup> guidelines: 3m for 2y, 6m 2-5y, and yearly >5y.
- FU is important to manage treatment toxicities, diagnose events (recurrence or new primaries) and provide supportive management

## PURPOSE

1. To compare patterns of post-radiotherapy FU care at 3 metropolitan Sydney Hospitals
2. To evaluate the role of routine imaging in FU
3. To estimate the proportion of patients suitable for curative interventions after diagnosis of recurrence or new primary lung cancer during FU

## METHODS AND MATERIALS

- Retrospective data collection of Oncology and Hospital records at 3 Cancer Therapy Centers:
  - St George
  - Illawarra
  - Liverpool/Macarthur

### Inclusion criteria

- Stage I-III NSCLC patients
  - Completed curative dose of radiotherapy (min: 50Gy) +/- chemotherapy between 2007-2011
  - Not treated with surgery
- Sample size = 283 patients

### Data collection:

- Demographics: Age, Gender, ECOG, Alive/Dead status, Date of death, Cause of death
- Cancer Factors: Date of diagnosis, Stage, Histopathology, Treatment
- Follow-up: Date, Specialist, Symptoms, Imaging
- Recurrence/New Primary: Date of diagnosis, Method of diagnosis, Treatment, Intent

## RESULTS

Table 1 – Characteristics of study patients

	N	%	ECOG		
<b>Gender</b>			0	80	28.3
Male	183	64.7	1	152	53.7
Female	100	36.3	2	39	13.8
<b>Age at diagnosis</b>			3	6	2.1
<60 years	36	12.7	Unknown	6	2.1
60-69 years	83	29.3	<b>Stage</b>		
70-79 years	89	31.4	Stage I	79	29.7
80+ years	75	26.5	Stage II	47	16.6
<b>Histopathology</b>			Stage III	105	53.7
Large Cell Carcinoma	90	31.8	<b>Initial Treatment</b>		
Squamous Cell Carcinoma	100	35.3	Radiotherapy	160	56.5
Adenocarcinoma	69	24.4	Sequential Chemoradiotherapy	18	6.4
NSCLC NOS	25	8.8	Concurrent Chemoradiotherapy	105	37.1

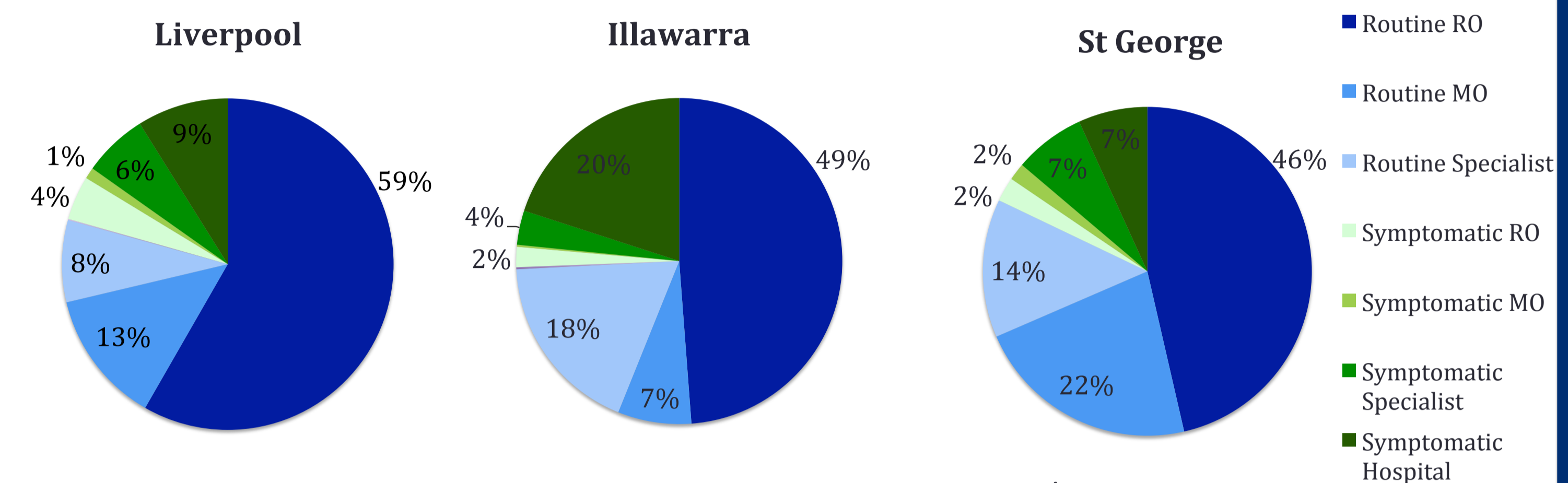
## REFERENCES

- <sup>1</sup>AIIHW. Cancer in Australia 2017 Canberra: Australian Government. 2017.
- <sup>2</sup>Pfister DG, et al. J Clin Oncol. 2004;22(2):330-53.
- <sup>3</sup>Ung YC, et al. Follow-up and surveillance of curatively treated lung cancer patients. Ontario: Cancer Care Ontario. 2014.
- <sup>4</sup>Zhi XY, Yu JM, Shi YK. Chinese guidelines on the diagnosis and treatment of primary lung cancer. Cancer. 2015;121(17):3165-81.
- <sup>5</sup>Party TW. Clinical Practice Guidelines for the Prevention, Diagnosis and Management of Lung Cancer. NHMRC. 2004.
- <sup>6</sup>Colt HG, et al. Follow-up and surveillance of the patient with lung cancer after curative-intent therapy: Diagnosis and management of lung cancer, 3rd ed: ACCP. Chest. 2013;143(5):437-54.
- <sup>7</sup>Vansteenkiste J, et al. 2nd ESMO Consensus Conference on Lung Cancer: early-stage non-small-cell lung cancer consensus on diagnosis, treatment and follow-up. Ann Oncol. 2014;25(8):1462-74.
- <sup>8</sup>Sheard DA, et al. NCCN guidelines for patients. NCCN. 2016:59-84.

- Median no. of FU visits = 6 (0-46) & Median period of FU = 10.8 months (0-104.2)

- 73.7% were routine, 26.3% were symptomatic visits

Figure 1 - Proportions of routine and symptomatic FU by hospital



- 1641 imaging tests were performed = an average of 5.8 scans/patient
- 98 imaging studies resulted in the asymptomatic diagnosis of an event

Figure 2 – Types of imaging done at FU by hospital

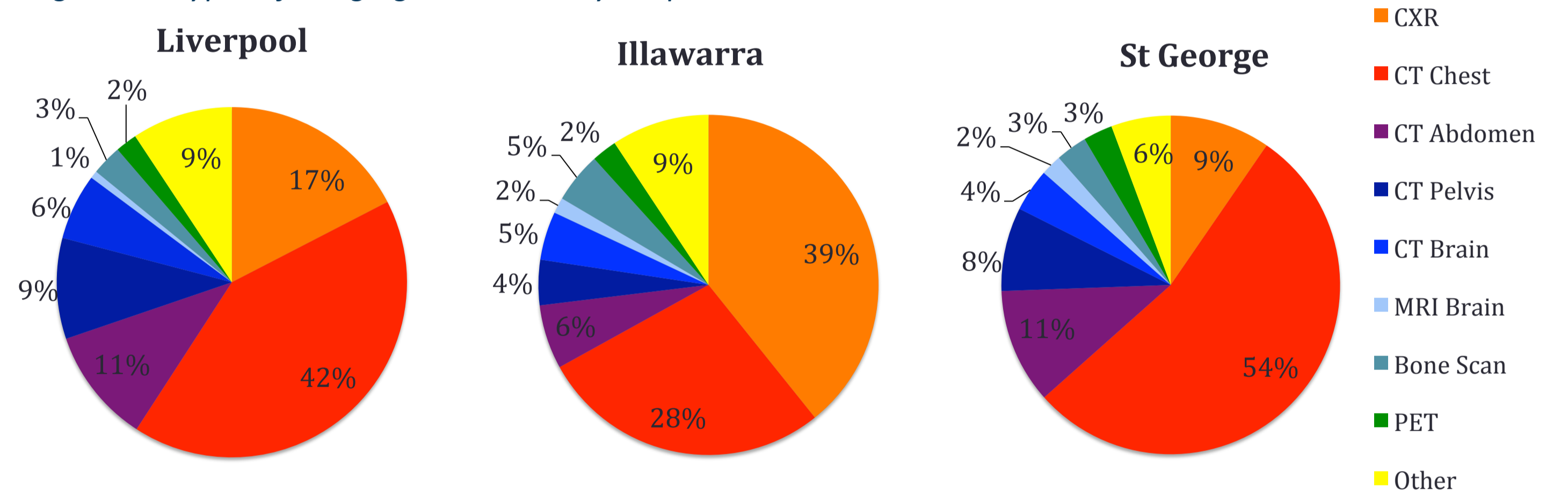


Figure 3 – No. of events (recurrence/new primary) by time for Stage I+II patients

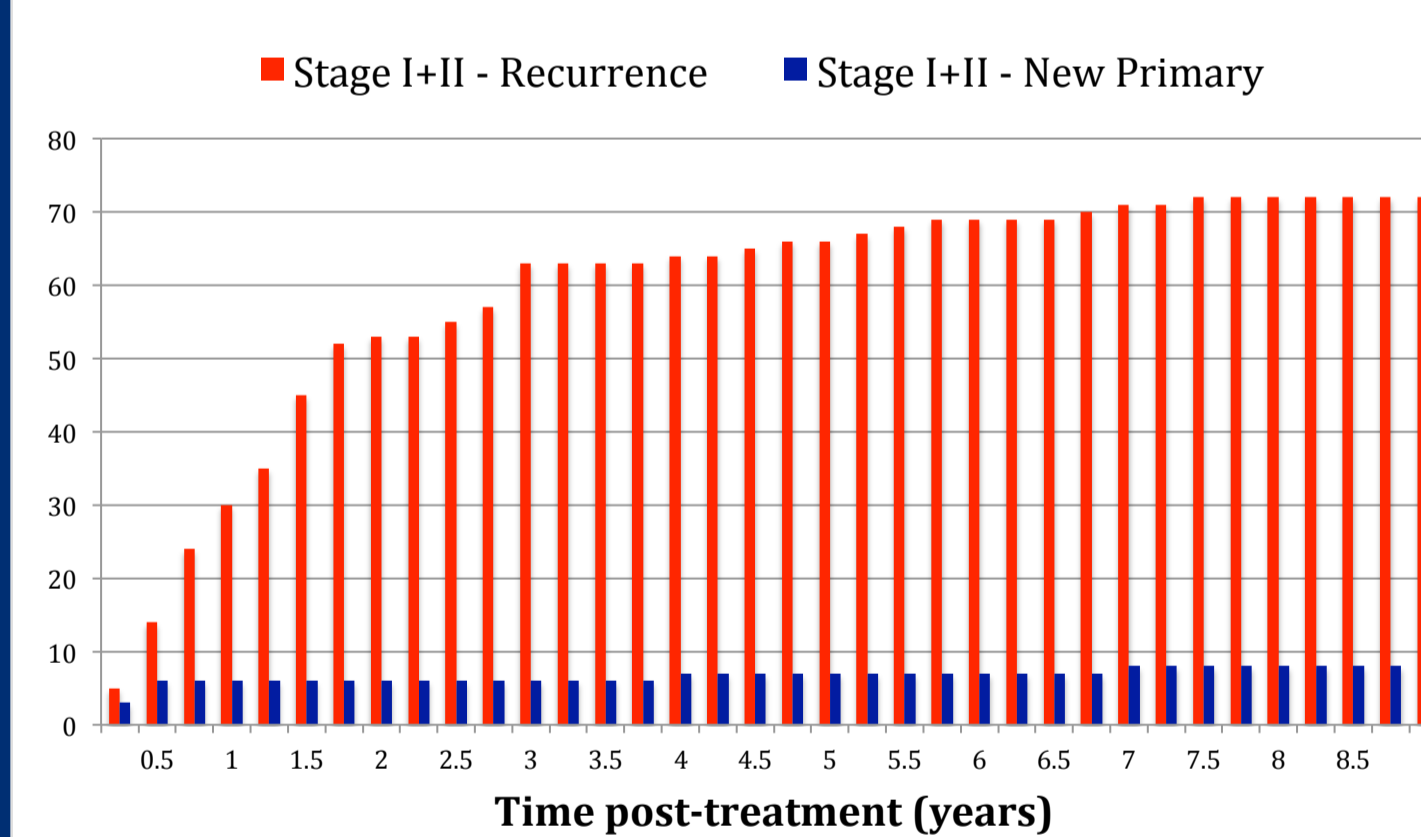


Figure 4 – No. of events (recurrence/new primary) by time for Stage III patients

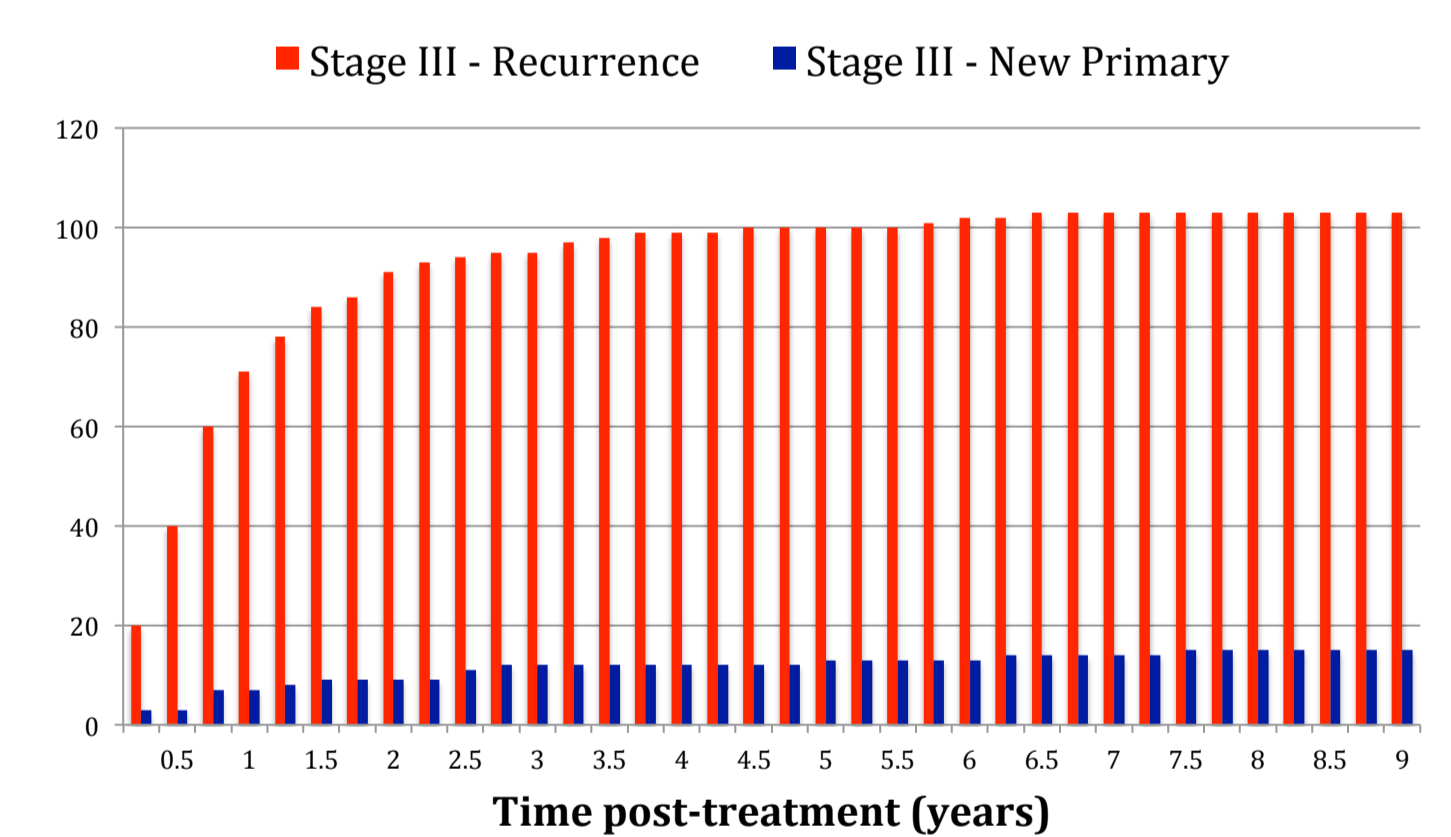
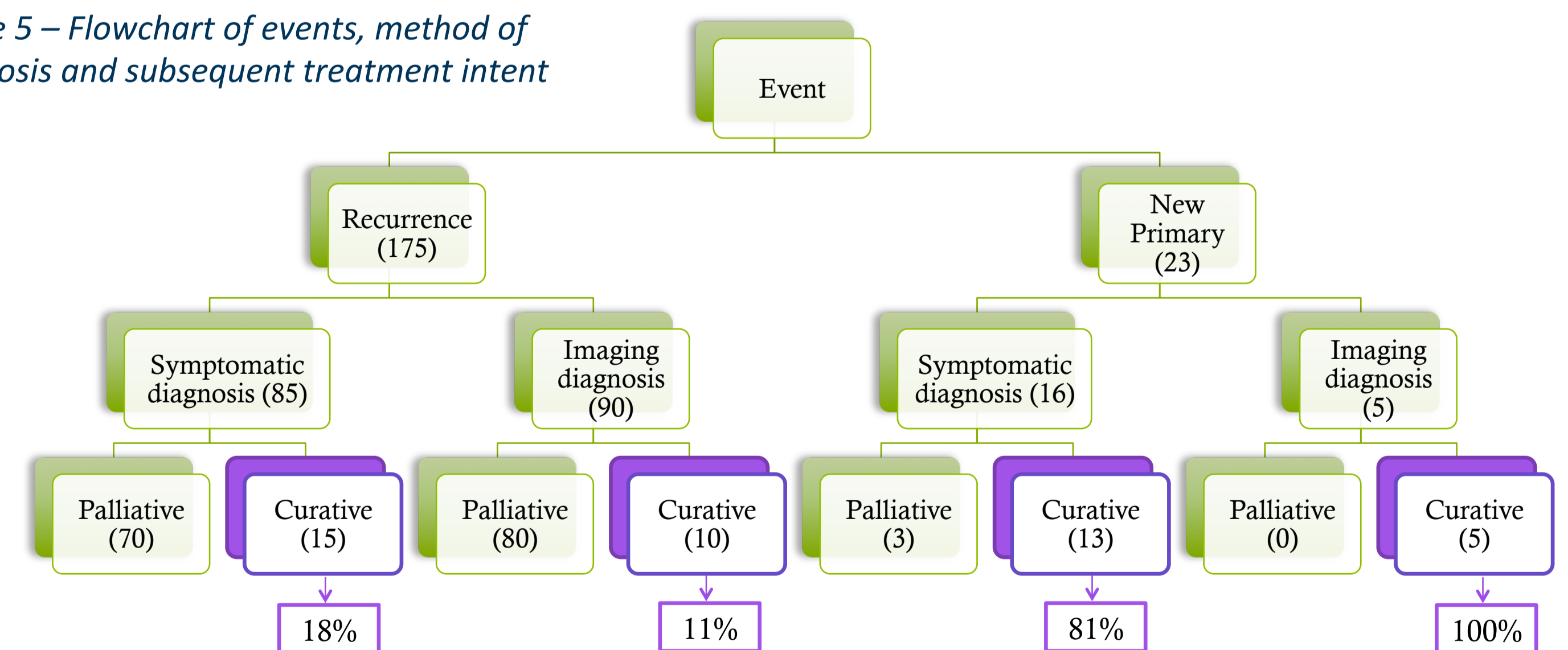


Figure 5 – Flowchart of events, method of diagnosis and subsequent treatment intent



- Symptomatic diagnosis of an event was associated with delivery of subsequent curative treatment (p=0.049) but was not significantly associated with overall survival (p=0.862)
- No other patient, tumor or initial treatment factors were significantly associated with subsequent curative treatment (p>0.05)

## CONCLUSION

- FOLLOW-UP PRACTICE WAS VARIABLE ACROSS THE THREE INSTITUTIONS.
- THE MAJORITY OF EVENTS OCCURRED WITHIN 3 YEARS POST-RADIOTHERAPY
- THERE WAS A STEADY INCREASED RISK OF NEW PRIMARY CANCERS UP TO 9 YEARS AFTER TREATMENT
- ROUTINE IMAGING WAS NOT ASSOCIATED WITH IMPROVED SURVIVAL
- STANDARDISED ROUTINE FOLLOW-UP PROTOCOL MAY PREVENT SYMPTOMATIC HOSPITAL PRESENTATIONS