West Midlands Radiotherapy Clinical Protocol

Lung Cancer - Small Cell

Revision history

Version	Date	Summary of changes
1.0	08.12 23	EAG Approval
2.0	19.9.25	Ratified by EAG: see separate change log
2.1	9.7.26	Peer review section added
Review Date:	September 2027	

Contents

West Midlands Radiotherapy Clinical Protocol 1

Revision history 1

1. Purpose 3
2. Information & Consent 3
3. Responsibility 3
4. Peer review 3
5. Thoracic radiotherapy in Limited Stage (I-III) Disease 3
   - 5.1 Radical radiotherapy: Concurrent/Sequential 3
     - **5.1.1 Indication** 3
     - **5.1.2 Patient selection** 4
     - **5.1.3 Radiotherapy** 5
     - **5.1.4 Table 1 OAR dose constraints** 8
6. Thoracic irradiation in extensive stage SCLC and those not suitable for radical radiotherapy 9
   - **6.1 Indications** 9
   - **6.2 Radiotherapy** 9
7. Palliative radiotherapy for symptom control 10
   - 7.1 Indications and selection criteria: 10
   - 7.2 Radiotherapy 10
8. Prophylactic cranial irradiation (PCI) 12
   - 8.1 Indications 12
     - **8.1.1 Limited SCLC (stage I-III):** 12
     - **8.1.2 Extensive SCLC** 12
   - 8.2 Radiotherapy 12
9. Patient care for all lung patients 13
   - 9.1 Patient Care 13
   - 9.2 Follow up 13
10. References 14

1. Purpose

To provide a standardised protocol for planning and delivery of external beam radiotherapy for patients with Small Cell Lung Cancer (SCLC) within the West Midlands. This protocol is aligned with the Royal College of Radiologists (RCR) Dose Fractionation Guidance Version 4, March 2024.

2. Information & Consent

- Each patient should be consented with individualised information of planned treatment, risks/benefits and toxicities
- Booking form and consent completed by IR(ME)R practitioner
- Patients should also receive a local patient information sheet or MacMillan information booklets

3. Responsibility

- To comply with the Ionising Radiation (Medical Exposure) Regulations 2017 the following roles are defined:
- Referrer & Practitioner: The consultant clinical oncologist is responsible for the care of the patient including correct referral for treatment consent, justification, prescription and treatment authorisation as defined in their departmental protocol but in accordance with this regional protocol.
- Operators: radiographers, physicists, technologists, Consultant clinical Oncologists and other medical staff are responsible for individual tasks associated with the plan production, verification and treatment delivery as per departmental protocols but in accordance with this regional protocol. These are undertaken under the auspices of the practitioner.
- It is the responsibility of department management teams to ensure departmental protocols are consistent with this regional protocol and that any disagreement with the content of this protocol is raised through the West Midlands EAG.

4. Peer review

Peer review should be undertaken in line with the West Midlands regional guidance agreed in December 2025 which identifies which cases should be subject (as a minimum) to peer review. Please refer to the West Midlands Peer Review guidance (December 2025).

5. Thoracic radiotherapy in Limited Stage (I-III) Disease

5.1 Radical radiotherapy: Concurrent/Sequential

5.1.1 Indication

Limited stage SCLC is defined as disease that can be encompassed within a curative radiotherapy volume. Patients with a performance status of 0-1, who meet the selection criteria below, and have

disease that can be encompassed in a radical radiotherapy field should receive concomitant chemo-radiotherapy. Combining chemotherapy and radiotherapy has been shown to improve both local control and overall survival [1, 2]. The best results have been reported with early concurrent thoracic radiotherapy [3-6] and twice daily radiotherapy as opposed to once daily [7].

Ideally radiotherapy should commence with chemotherapy on day 1 of cycle 1. However, due to practical reasons, it is acceptable to start radiotherapy with day 1 of cycle 2 (i.e. within 21days). It is not acceptable to delay radiotherapy start beyond cycle 2. A delay with the administration of chemotherapy should not delay the start of radiotherapy.

In large volume stage III SCLC where organ at risk (OAR) dose constraints cannot be met consider radiotherapy planning scan after 2 cycles of chemotherapy for maximum tumor shrinkage.. In these cases thoracic radiotherapy can be started with the third cycle of chemotherapy. [11].

In patients not sufficiently fit for concomitant chemo-radiotherapy or if the disease cannot be encompassed within a radical radiotherapy field, radiotherapy can be given in sequence, starting 3–4 weeks after completion of chemotherapy.

Prophylactic cranial irradiation (PCI) should be discussed with all patients who have localised disease and may also be considered in patients who have metastatic disease but have achieved a good response with chemotherapy.

Consider patients for appropriate clinical trials: see Clinical trials - West Midlands Radiotherapy Network.

5.1.2 Patient selection

1. ≥ 18 years
2. ECOG performance status 0 - good 2
3. Histologically or cytologically confirmed SCLC
4. Limited stage disease i.e. patients whose disease can be encompassed within a radical radiation portal
5. All patients being considered for radical treatment should have further imaging +/- biopsy to confirm the presence or absence of isolated distant metastases/ synchronous tumours e.g. MRI brain, PET-CT
6. Pulmonary function tests:
    a. FEV1 >1 litre (0.8 litre is acceptable but only if other criteria are favorable or equal to 40% of predicted value)
    b. KCO > 40% predicted
7. For patients being considered for concurrent chemotherapy, reference must be made to the local chemotherapy protocols for base line renal and bone marrow function

5.1.3 Radiotherapy

	Radical Radiotherapy Concurrent / Sequential
Energy / modality	6MV photons
Patient immobilisation, set up	Supine with both arms up with locally agreed immobilisation technique For apical tumours, consider immobilisation and the use of H&N BDS to encompass shoulders, with arms by the side.
Localisation	4DCT Scan with IV contrast if no contraindications, especially if mediastinal disease Slice thickness ≤3 mm To include whole of the lung volume (typically cricoid to L2) using additional 3DCT where necessary. Refer to local guidelines for superior and inferior scan levels
Planning technique	4D CT with VMAT IMRT For a limited number of patients conformal 3D planning may give better dose constraints
Target definition	**Gross tumour Volume (GTV)** GTV is defined using planning CT and diagnostic imaging including PET to identify tumour and involved nodes. Lung and mediastinal windows are used to volume the primary and mediastinal windows are used to volume the nodes. <u>Concurrent chemoradiotherapy</u>: GTV = primary tumour + involved nodes <u>Sequential radiotherapy post chemotherapy</u>: If partial response: GTV = post chemo primary tumour volume + pre chemo involved nodes If complete response: GTV/CTV microscopic (CTVm) = pre chemo involved nodes +/- pre chemo primary in some cases Peripheral tumours should not be included. **Clinical target volume (CTV)** CTV includes areas at risk of microscopic spread. This is usually at least 5mm beyond the radiologically visible tumour taking into account anatomical direction of spread. The whole of the involved nodal station may need to be included. The CTV should be created throughout motion. **Planning Target Volume (PTV)** The appropriate CTV/ITV-PTV margin is dependent on the respiratory motion

	management, local image guidance strategy, guidelines and audits. PTV expansion should be as per locally established margins. 4DCT – ITV/CTV is expanded typically by 5-10mm axially and 5-10mm cranio-caudally to form the PTV. If 4DCT is not possible, the CTV is expanded by 10mm margin in the axial plane, and by 15mm in the cranio-caudal plane to form the PTV.
Dose / fractionation & treatment duration	**Concurrent radiotherapy:** 45Gy in 30 twice daily fractions over 3 weeks **stage 1-3** radiotherapy to start on a Monday, 5 consecutive days a week, inter-fraction interval of 6-8 hours If, for any reason twice daily treatment is not possible then once daily regimes include: • 66Gy in 33# over 6½ weeks **stage 1-3** • where this is not possible for clinical and dose constraints reasons, 60Gy in 30# daily over 6 weeks pending peer review (SaTH, RWT, UHNM and UHCW) • 55Gy/20F after peer review and local policy agrees (UHCW) • 40Gy in 15~ as per local and peer review – for PS2 and elderly who cannot tolerate longer fractions of 20/30/33 fractions
	Sequential radiotherapy: 40Gy in 15 daily fractions over 19 days -radiotherapy to start on a Monday, 5 consecutive days a week [8] 50-Gy 20-# over 4 weeks (stage 1-3) - as per RCR guidance Other local options include: • 55Gy in 20# (UHB and UHCW) • 50Gy in 25# (RWT)
OAR Contouring	**Spinal cord:** Contoured based on the bony limits of the spinal canal, or some centres may contour the spinal cord itself. It should be contoured starting at least 10cm above the superior extent of the PTV and continuing on every CT slice to at least 10cm below the inferior extent of the PTV **Oesophagus** This is contoured using mediastinal windowing on the CT scan to correspond to the mucosal, sub mucosal and all muscular layers out to the fatty adventitia. The oesophagus should be fully contoured from the level of the cricoid cartilage to the gastro-oesophageal junction. <10-12cm of Oesophagus length should be within maximum isodose.

	For patients being treated with radiotherapy alone keep oesophageal length <18cm **Heart:** This is contoured along with the pericardial sac. Superiorly this starts at the superior aspect of the pulmonary artery and ends at the apex of the heart inferiorly. **Brachial Plexus** To be contoured if it lies within 2cm of PTV
Dose Specification	For IMRT/ VMAT the dose is prescribed according to ICRU 83. For 3D conformal treatment the dose will be specified at the ICRU reference point. The dose distribution within the PTV should ideally be within +/- 5% of the prescribed dose, and no more than +7% of the prescribed dose Refer to table 1 for OAR dose constraints.
Image verification	Plan is verified at the first fraction using cone beam CT (CBCT). Ideally daily on line CBCT imaging should be performed to confirm CTV /PTV coverage, and monitor intra thoracic anatomy, dependent on tumour site and OAR CBCT imaging verification on 1-3# then weekly is adequate but not recommended

5.1.4 Table 1 OAR dose constraints

			As per local policy	As per local policy	As per local policy			
	Radical concurrent	**Radical concurrent**	**Radical concurrent**	**Radical seq**	**Radical - sequential**	**Radical - sequential**	**Radical - sequential**	**Consolidation palliative**
Organ at Risk	**45Gy in 30 # Twice-daily schedule (taken from CONVERT Trial and The Christie Clinical protocol)**	**66 Gy in 33 #**	**60 Gy in 30 #**	**50 Gy/25 - 2 Gy/#**	**50 Gy in 20 # 2.5 Gy/# (taken from ADSCaN SCLC**)**	**55 Gy in 20 # 2.5-2.75 Gy/# (taken from ADSCaN SCLC**)**	**40 Gy in 15 #**	**30 Gy in 10 #**
Spinal Cord α/β = 2 Gy	0.1 cc < 42 Gy (EQD2 35.7 Gy in 30#)	0.1 cc < 48 Gy (EQD2 41.5 Gy)	0.1 cc < 48 Gy (EQD2 43.2 Gy)	0.1 cc < 45 Gy (EQD2 42.75 Gy)	0.1 cc ≤ 47 Gy (EQD2 51.1 Gy)		0.1 cc < 40 Gy (EQD2 46.7 Gy)	0.1 cc < 34 Gy (EQD2 45.9 Gy)
An EQD2 of 50 Gy to 5 cm of cord is associated with a 5 % risk of myelitis at 5 years. An EQD2 of 47 Gy to 20 cm of cord is associated with a 5 % risk of myelitis at 5 years. B. Emami et al. **If ADSCaN is taken as the reference, when comparing EQD2 values, it may be possible to increase the Spinal Cord dose tolerance as below in grey . But this should be at Clinician's discretion.*								
***Spinal Cord tolerance** using ADSCaN EQD2 (51 Gy)	**53.8 Gy / 30 #**	**55.4 Gy / 33 #**	**53.8 Gy / 30 #**	**50.7 Gy / 25 #**	as above		**42.3 Gy / 15 #**	**36.3 Gy /10 #**
Combined Lung - CTV α/β = 4 Gy (EDQ2 15.4-17.8 Gy)	Christie Protocol: lung - PTV: *V* 5 Gy < 65 % *V* 10 Gy < 50 % *V* 20 Gy < 30-35 % (EQD2 15.6 Gy) CONVERT trial: lungs - ITV mean dose < 20 Gy	*V5 Gy < 65 %* *V10 Gy < 50 %* *V* 20 Gy < 30-35 % (EQD2 15.4 Gy)	*V5 Gy < 65 %* *V10 Gy < 50 %* *V* 20 Gy < 30-35 % (EQD2 15.6 Gy)	V5 Gy < 65 % V10 Gy < 50 % Lung-GTV *V* 20 Gy < 30-35 % (EQD2 16.0 Gy)	V5 Gy < 65 % V10 Gy < 50 % ADSCaN: Lung-GTV *V* 20 Gy < 35 % if this is not achievable report Lung-CTV V20 Gy < 30-35 % (EQD2 16.7 Gy)		*V5 Gy < 65 %* *V10 Gy < 50 %* *V* 20 Gy < 30-35 % (EQD2 17.8 Gy)	*V5 Gy < 65 %* *V10 Gy < 50 %* *V* 18 Gy < 30-35 % (EQD2 17.4 Gy)
Heart α/β = 2.5 Gy Equivalent to ADSCaN EQD2 doses	*V* 45 Gy < 30 % *V* 22.5 Gy < 50 %	*D* 100 % < 41.3 Gy *D* 67 % < 51.1 Gy *D* 33 % < 67.2 Gy	*D* 100 % < 40.3 Gy *D* 67 % < 49.7 Gy *D* 33 % < 65.2 Gy	*D* 100 % < 38.6 Gy *D* 67 % < 47.4 Gy *D* 33 % < 61.8 Gy	*D* 100 % < 36.0 Gy (EQD2 34.4 Gy) *D* 67 % < 44.0 Gy (EQD2 46 Gy) *D* 33 % < 57.0 Gy (EQD2 67.8Gy)		*D* 100 % < 33.0 Gy *D* 67 % < 40.0 Gy *D* 33 % < 51.4 Gy	*D* 100 % < 28.8 Gy *D* 67 % < 34.7 Gy *D* 33 % < 44.1 Gy
Oesophagus α/β = 3 Gy EQD2 max=68Gy Assuming PEG/RIG fitted (Max 10-12 cm in 95-100% isodose)	0.1 cc < 60 - 65.6 Gy	0.1 cc < 60 - 67.5 Gy	0.1 cc < 60 - 65.6 Gy	0.1 cc = 62.0 Gy	0.1 cc ≤ 105 % (57.75 Gy) (EQD2 68.1 Gy)		0.1 cc = 52.4 Gy	0.1 cc = 45.2
Brachial Plexus α/β = 2 Gy	0.1 cc < 60.0 Gy (EQD2 60 Gy for 30#)	0.1 cc < 65.5 Gy EQD2 max 65.3 Gy*	0.1 cc < 60.0 Gy (EQD2 60 Gy)	0.1 cc < 56.4 Gy (EQD2 60 Gy)	0.1 cc < 52.1 Gy (EQD2 60 Gy)	0.1 cc < 55.0 Gy EQD2 max 65.3 Gy*	0.1 cc < 46.8 Gy (EQD2 60 Gy)	0.1 cc < 40 Gy (EQD2 60 Gy)
Brachial plexus - Joiner, M. & Kogel, A. van der (Eds) (2009) Basic Clinical Radiobiology 4th Ed. Hodder Arnold (London): risk of injury rises steeply above EQD2 60Gy. **If ADSCaN is taken as the reference, when comparing EQD2 values, it may be possible to increase the brachial plexus dose tolerance for fractionations as below in Red. But this should be at Clinician's discretion.*								
***Brachial Plexus tolerance** using ADSCaN EQD2 (65.3 Gy)	**63.5 Gy / 30#**	as above	**63.5 Gy / 30 #**	**59.6 Gy /25 #**	**55 Gy / 20 #**	as above	**49.4 Gy / 15 #**	**42.1 Gy / 10 #**
If you re-treat, please liaise with physics for radiobiology calculations								
Blue cells reresent doses from trial protocols								
Pink cells represent local clincal protocol doses not in the RCR Dose and Fractionation 4th edition								

6. Thoracic irradiation in extensive stage SCLC and those not suitable for radical radiotherapy

6.1 Indications

Extensive stage SCLC (ES-SCLC) is defined as disease that cannot be encompassed in a curative radiotherapy volume. Often this includes patients with metastatic disease.

Thoracic radiotherapy in addition to PCI, should be considered for patients who are deemed to be fit for radiotherapy (not PS3) who have a limited volume of extra-thoracic disease and have had a response to chemotherapy. Consolidation radiotherapy results in a 10% increased survival benefit in 2-year overall survival [8,10], predominantly beneficial in patients who had a significant level of mediastinal lymphadenopathy at diagnosis that responded to chemotherapy as delaying disease progression in this area was felt to be the mechanism behind the survival benefit.

6.2 Radiotherapy

	Extensive/ Metastatic Disease
Energy / modality	6MV photons
Patient immobilisation, setup	Supine with both arms up with locally agreed immobilisation technique For apical tumours, consider immobilisation and the use of H&N BDS to encompass shoulders, with arms by the side.
Localisation	CT Scan and virtual simulation
Planning technique	Technique as appropriate
Target definition	**GTV** GTV is defined using planning CT and diagnostic imaging. Lung and mediastinal windows are used to volume the primary and mediastinal windows are used to volume the nodes. GTV: any disease identifiable post- chemotherapy. Hilar and mediastinal nodal stations that were considered involved pre-chemotherapy are included, even in case of response. **CTV -** CTV = GTV + 5mm. **PTV -** PTV = CTV + 1cm in axial plane and 1.5 cm cranio-caudal plane For virtual simulation a1-2cm margin is added to GTV. For 4DCT refer to local protocol for margins.
Dose Specification	For IMRT/ VMAT the dose is prescribed according to ICRU 83.

	For 3D conformal treatment the dose will be specified at the ICRU reference point. The dose distribution within the PTV should ideally be within +/- 5% of the prescribed dose, and no more than +7% of the prescribed dose Refer to OAR constraints table
Dose / fractionation & treatment duration	30Gy in 10 fractions over 2 weeks
On set verification	Verification method dependent on planning method IMRT/3DCRT Plan is verified at the first fraction using cone beam CT (CBCT). Ideally daily on line CBCT imaging should be performed to confirm CTV /PTV coverage, and monitor intra thoracic anatomy, dependent on tumour site and OAR. CBCT imaging verification on 1-3# or 1-5# then weekly is adequate but not recommended. Vsim Image using 2D image verification (EPID or KV) on 1-3# or 1-5# then weekly

7. Palliative radiotherapy for symptom control

There are no trials of palliative radiotherapy in SCLC, but the relative radio-sensitivity suggests benefits should be at least equivalent to those in non-SCLC.

7.1 Indications and selection criteria:

- Patients not sufficiently fit for or declining chemotherapy
- Patients with thoracic symptoms secondary to local disease
- Superior vena cava obstruction (SVCO) where stent or urgent chemotherapy is not possible. Benefits in treating shortness of breath or cough are uncertain though radiotherapy might be considered if there is a chance of aerating an obstructed airway.

7.2 Radiotherapy

	Palliative thoracic radiotherapy
Energy / modality	6 or 10MV photons

Patient , immobilisation, setup	Patient position and immobilisation to be determined by planning technique and patient ability. Arms by side are often sufficient. Refer to local immobilisation techniques
Localisation	CT Scan
Planning technique	Virtual simulation, 3D conformal planning or IMRT as appropriate
Target definition	GTV=Tumour should be visualised on planning CT, diagnostic CT and correlated with symptoms. PTV= GTV +1-2 cm
Dose Specification	Prescribed to mid plane dose (MPD) For IMRT/ VMAT the dose is prescribed according to ICRU 83. For 3D conformal treatment the dose will be specified at the ICRU reference point. The dose distribution within the PTV should ideally be within +/- 5% of the prescribed dose, and no more than +7% of the prescribed dose Refer OAR dose constraint table
Dose/ fractionation & treatment duration	30Gy in 10 fractions over 2 weeks 8-10 Gy in single fraction 16-17Gy in 2 fractions, 1 week apart 20Gy in 5 fractions over 1 week Refer to table 1.
On set verification	Verification method dependent on planning method IMRT/3DCRT Plan is verified at the first fraction using cone beam CT (CBCT). Ideally daily on line CBCT imaging should be performed to confirm CTV /PTV coverage, and monitor intra thoracic anatomy, dependent on tumour site and OAR. CBCT imaging verification on 1-3# or 1-5# then weekly is adequate but not recommended. Vsim Image using 2D image verification (EPID or KV) on 1-3# or 1-5# then weekly

8. Prophylactic cranial irradiation (PCI)

8.1 Indications

8.1.1 Limited SCLC (stage I-III):

PCI reduces the incidence of brain metastases and has a small impact on overall survival (12). The additional acute toxicity of PCI and possible effects on long-term cognitive function need to be balanced against this small benefit for individual patients. Elderly patients are more susceptible to the effects on cognition.

Patients with limited stage SCLC (stage I-III) in complete or near complete thoracic remission following primary chemo-radiotherapy have an increased overall survival and decreased incidence of intracerebral relapse when PCI is delivered.(13)

PCI should not be offered with systemic treatment. It should to be offered after completion of chemo-radiotherapy. If thoracic radiotherapy follows chemotherapy i.e. sequential radiotherapy, PCI can be offered simultaneously.

When PCI is not utilised, close follow up with cranial CT or MRI could be considered if further treatment is an option.

8.1.2 Extensive SCLC

PCI may be considered for patients with extensive stage SCLC who are under 75years of age and have had a good response to primary chemotherapy as PCI has also been shown to improve 1 year survival in this patients group.(14)

8.2 Radiotherapy

	Prophylactic cranial radiotherapy (PCI)
Energy / modality	6MV photons
Patient , immobilisation, setup.	To be treated in a thermoplastic beam directional shell (BDS) in neutral position. For further immobilisation refer to the local guidelines.
Localisation	CT Scan
Planning technique	Conformal or virtual simulation Conformal volumes: This provides improved conformity, reduced hotspots and provides accurate reporting of lens doses CTV = brain, outlined to C2/C3

	PTV = CTV + 5mm
Target Definition	Whole brain
Dose Fractionation (RCR)	RCR recommends: • 20Gy in 5# over 1 week(preferred ES - SCLC) (stage 4) • 25Gy in 10# over 2 weeks (preferred LS - SCLC) – stages 1-3 and stage 4
Organs at Risk	Lens < 6Gy
On treatment verification	Refer to local protocols

9. Patient care for all lung patients

9.1 Patient Care

All radical patients should be reviewed weekly for symptoms of oesophagitis and pneumonitis. For patients receiving prophylactic cranial irradiation, side effects need to be monitored carefully. Consider PCP prophylaxis for patients undergoing concomitant chemo-radiotherapy or on long term steroids.

9.2 Follow up

GP information letter to be sent on completion of treatment including treatment intent, treatment completion date, anticipated toxicities and instruction on reducing steroid regimen if appropriate.

Patients on radical treatment should be seen 1-2 weekly until ongoing toxicities resolve. For patients treated with radical intent, close follow up with imaging as per local protocol needs to be followed.

10. References

1. Pignon JP, Arrigada R, Idhec DC et al. A meta- analysis of thoracic RT for small cell lung cancer. N Eng J Med 1992; 327: 1618-24.
2. Warde P, Payne D. Does thoracic irradiation improve survival and local control in limited stage small cell carcinoma of the lung? A meta-analyses. J Clin Oncol 1992;10:890-5
3. De Ruysscher D, Pijls-Johannesma M, Vansteenkiste J, et al. Systematic review and meta-analysis of randomised, controlled trials of the timing of chest RT in patients with limited-stage, small-cell lung cancer. Ann Oncol 2006;17:543–52.
4. Fried DB, Morris DE, Poole C, et al Systematic review evaluating the timing of thoracic radiation therapy in combined modality therapy for limited-stage small-cell lung cancer. J Clin Oncol 2004;22:4837–45.
5. Huncharek M, McGarry R A meta-analysis of the timing of chest irradiation in the combined modality treatment of limited-stage small cell lung cancer. Oncologist2004;9:665–72.
6. Pijls-Johannesma MC, De Ruysscher D, Lambin P et al. Early versus late chest RT for limited stage small cell lung cancer. Cochrane Database Syst Rev 2005;(1):CD004700.
7. Turrisi AT, Kim K, Blum R, et al. Twice daily compared with once daily thoracic RT in limited small cell lung cancer treated concurrently with cisplatin and etoposide. N Engl Med 1999; 340:265-71.
8. Yee D, Butts C, Reiman A et al. Clinial trial of post- chemotherapy consolidation thoracic radiotherapy for extensive stage small cell lung cancer. Radiother Oncol 2012; 102: 234-38
9. Faivre- Finn C, Falk S, Ashcroft L et al. Protocol for the CONVERT trial- Concurrent once daily versus twice daily radiotherapy: an international 2 arm randomised controlled trial of concurrent chemoradiotherapy comparing twice daily and once daily radiotherapy schedules in patients with limited stage small lung cancer (LSSCLC) and good performance status. BMJ Open 2016; 6: e009849. Doi:10.1136/bmjopen-2015-009849
10. Slotman BJ, van Tinteren H, Praag J et al. Use of thoracic radiotherapy for extensive stage small cell lung cancer: a phase 3 randomised controlled trial. Lancet 2015; 385: 36-42
11. Radiotherapy for lung cancer. RCR consensus statements. June 2020
12. Rosen ST, Makuch RW, Lichter AS, et al. Role of prophylactic cranial irradiation in prevention of central nervous system metastases in small cell lung cancer. Potential benefit restricted to patients with complete response. Am J Med 1983;74:615-24.
13. Aupérin A, Arriagada R, Pignon JP, et al. Prophylactic cranial irradiation for patients with small-cell lung cancer in complete remission. Prophylactic Cranial Irradiation Overview Collaborative Group. N Engl J Med 1999;341:476-84.
14. Slotman B, Faivre-Finn C, Kramer G, et al. Prophylactic cranial irradiation in extensive small-cell lung cancer. N Engl J Med 2007;357:664-72.

Review of lung SCLC protocol

This protocol was revised by the WMCA lung EAG member in March 2025
Lead reviewers: Dr Apurna Jegannathen, UHNM and Dr Rajanee Bhana, RT Network clinical lead
MPE lead: Nicola Snelson, UHNM
Consultation carried out: July - August 2025 and comments reviewed by Dr Dev Srinivasan, RT Network deputy clinical lead