



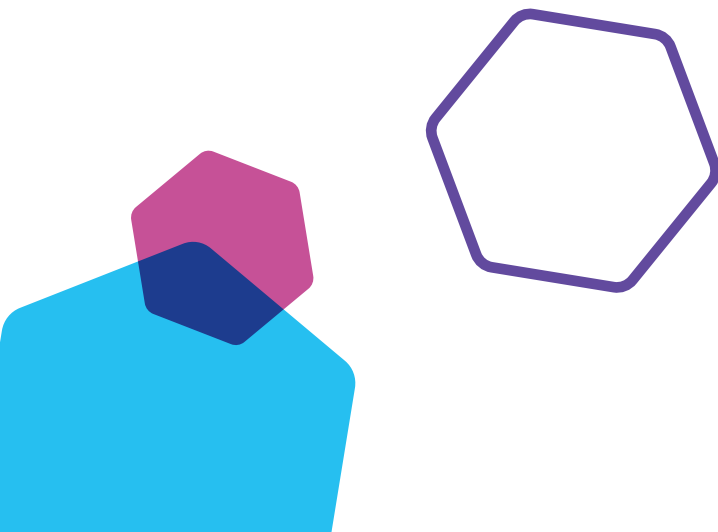
Greater Manchester Risk Stratified Follow-up after Lung Cancer Surgery Pathway

A study undertaken at Wythenshawe Hospital analysed the pathological reports of 1034 patients that underwent surgical resection of non-small cell lung cancer from 2011 to 2014. This data was linked to survival data and used to develop the 'LNC-PATH' (Lymphovascular invasion, N-stage, adjuvant Chemotherapy, Performance status, Age, T-stage, Histology) risk stratification score. This score stratifies patients according to the risk of death in the first two years following surgical resection using low-risk, moderate-risk and high-risk groups: 83.8% of patients in the low-risk group survived two years after surgery compared to 55.6% in the moderate-risk group and 26.2% in the high-risk group. The LN-PATH risk stratification score was validated in a multicentre external dataset from Leeds, Bristol and Glasgow surgical centres (402 patients). The score was shown to perform moderately well with an Area Under the Receiver Operating Characteristic curve (AUROC) value of 0.76 (95% CI: 0.73–0.79) and 0.70 (95% CI: 0.64–0.76) in the derivation and validation cohorts respectively. In this

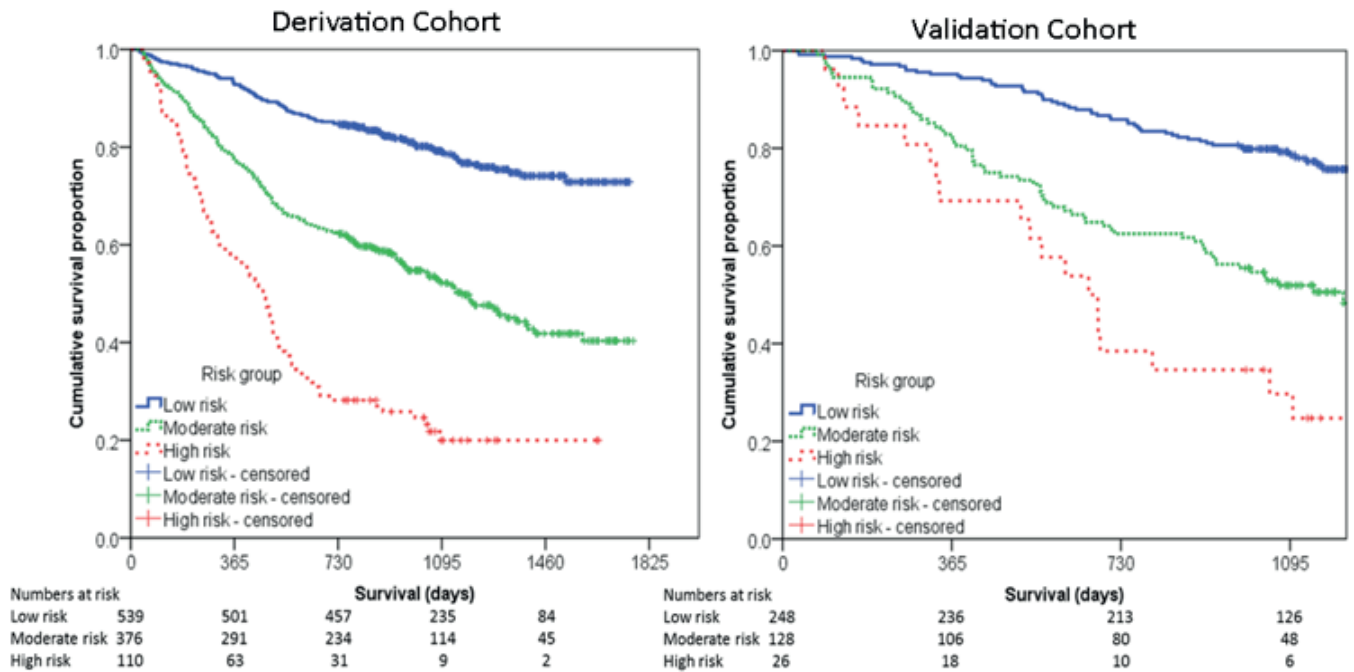
The LNC-PATH Risk Stratification Score

Variable	Score
Lymphovascular invasion (LN-PATH) No Yes	0 0.5
N stage (LN-PATH) pNx pN0 pN1 pN2	0 0 1 1
Adjuvant chemotherapy (LNC-PATH) No Yes	0 1
Performance Status (LN-PATH) 0 1 2/3	0 0 1
Age (years) (LN-PATH) <75 >75	0 1
T stage (LN-PATH) pT1 pT2 pT3 pT4	0 1 2 2
Histology sub-type (LN-PATH) Adeno – lepidic Adeno – papillary/micropapillary Adenocarcinoma – Acinar Adeno - unknown Squamous Cell Carcinoma NSCLC – other Adenocarcinoma - Solid Large cell NSCLC	0 0.5 0.5 0.5 1 1.5 1.5 2.5

Low Risk = ≤3 Medium Risk = 3.5-4.5 High Risk = ≥5



Kaplan-Meier Survival groups for the high, moderate and low risk groups in the derivation and validation



Based on the results of this study a Greater Manchester Risk Stratified Follow-up following Lung Cancer Surgery Pathway has been designed aimed at intensifying follow-up in those at highest risk of death and de-intensifying follow-up for those at lowest risk. The programme suggests a combination of clinic and telephone consultations and differing imaging protocols according to risk groups. These consultations could be undertaken by respiratory physicians or specialist nurses according to local services.

4-6 week post surgery review
 Holistic Needs assessment
 Risk stratification (LNC-PATH)
 Followed by Clinical / Radiological follow up as per LNC-PATH risk score

Low Risk (first 24 months following surgical resection)

	3	6	9	12	15	18	21	24
Telephone FU	Patient initiated symptom-based follow-up: encouraged to contact if concerns							
Clinic FU								
Chest CT & Abdomen		Contrast				LDCT Chest only		

Medium Risk (first 24 months following surgical resection)

	3	6	9	12	15	18	21	24
Telephone FU								
Clinic FU								
Chest CT & Abdomen		Contrast		Contrast		Contrast		

High Risk (first 24 months following surgical resection)

	3	4.5	6	7.5	9	10.5	12	13.5	15	16.5	18	19.5	21	22.5	24
Telephone FU															
Clinic FU															
Chest CT & Abdomen			Contrast				Contrast				Contrast				Contrast
Brain MRI															

All patients (months 24-60)

Following completion of 24 months of risk stratified follow-up all patients revert to a programme of annual LDCT & clinic assessment with a 6 month telephone assessment (plus annual autofluorescence for those patients with resected squamous cell carcinoma)

	30	36	42	48	54	60
Telephone FU						
Clinic FU						
Chest CT & Abdomen	LDCT		LDCT		LDCT	

Notes

- It is important all patients are provided with contact information for the survivorship service to facilitate self-reporting of symptoms and timely review when required. Rapid access into the telephone or clinic service is required.
- The suggested surveillance programmes begin from the date of surgery. For those patients undergoing adjuvant therapy the initial appointments may be undertaken within the oncology service until formally handed back to the survivorship services
- Survivorship is a holistic process and community based exercise programmes,