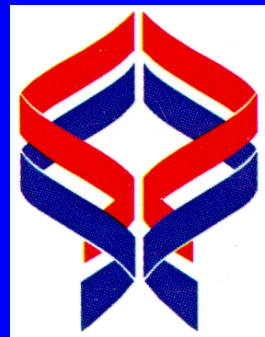


6th ELCC, Geneva, April, 2016

**The IASLC Proposals for the 8th
Edition of TNM in Lung Cancer:
Stages and Therapeutic
Implications?**

**Peter Goldstraw,
Honorary Consultant in Thoracic Surgery,
Royal Brompton Hospital, London, UK.
Emeritus Professor of Thoracic Surgery,
Imperial College, London, UK.
Past-President, IASLC.**



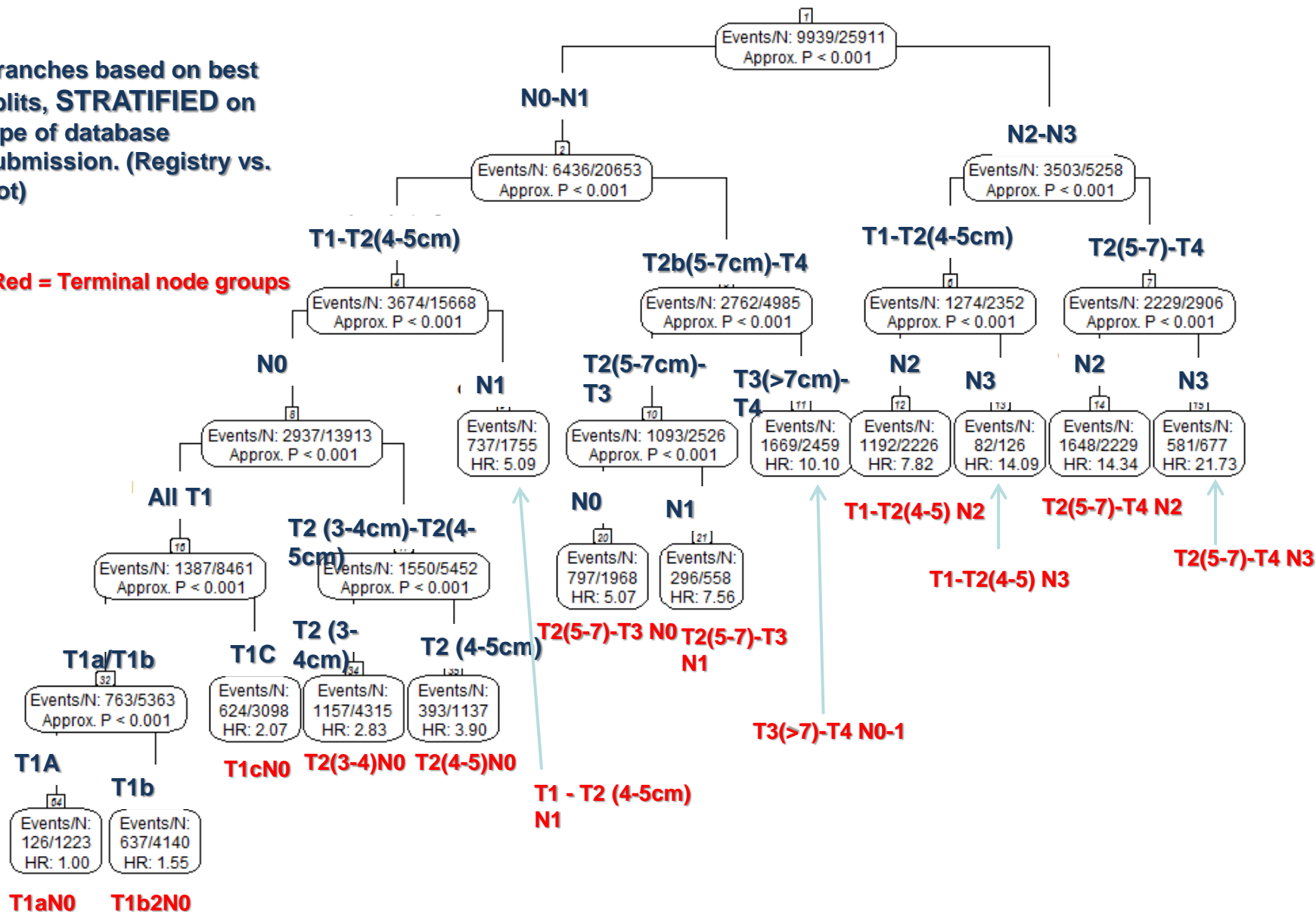
DISCLOSURE SLIDE

The speaker has no disclosures to make in connection with this presentation.

Tree based on 25,911 M0 Training Cases, best stage

Branches based on best splits, **STRATIFIED** on type of database submission. (Registry vs. Not)

Red = Terminal node groups



Terminal Node Groups

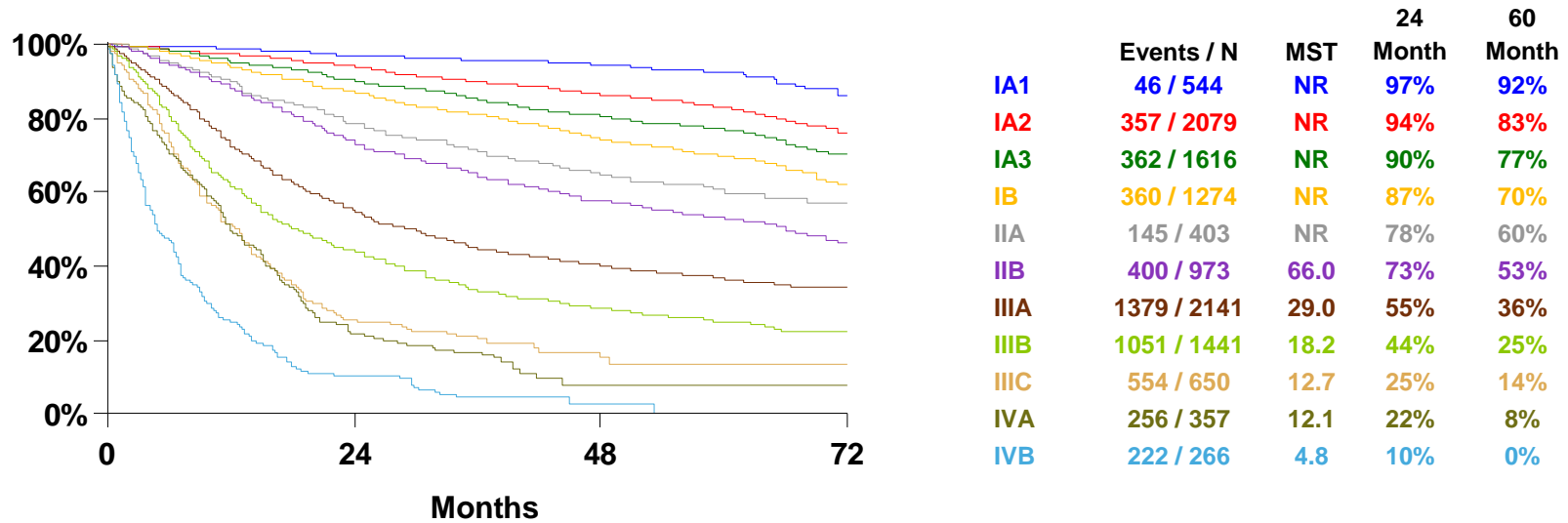
HR relative to left-most node

Terminal Node Group	Events/N	<u>STRATIFIED</u> HR*	7 th Ed.	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
T1aN0	126/1223	1.00	IA	IA	IA	IA1	IA1	IA1	IA 1
T1bN0	637/4140	1.55	IA	IA	IA	IA2	IA2	IA2	IA 2
T1cN0	624/3098	2.07	IA	IA	IA	IA3	IB1	IB1	IA3
T2(3-4)N0	1157/4315	2.83	IB	IB	IB	IB1	IB1	IB1	IB
T2(4-5)N0	393/1137	3.90	IB	IB	IIA	IB2	IB2	IB2	IIA
T2(5-7)-T3 N0	797/1968	5.07	IIA/IIIB	IIA	IIIB	IIA	IIA	IIA	IIIB
T1-T2 (4-5cm) N1	737/1755	5.09	IIA	IIA	IIIB	IIA	IIA	IIA	IIIB
T2(5-7)-T3 N1	296/558	7.56	IIIB/IIIA	IIIB	IIIA	IIIB	IIIB	IIIB	IIIA
T1-T2(4-5) N2	1192/2226	7.82	IIIA	IIIB	IIIA	IIIB	IIIB	IIIA	IIIA
T3(>7)-T4 N0-1	1669/2459	10.10	IIIA/IIIB	IIIB	IIIA	IIC	IIIA	IIIA	IIIA
T1-T2(4-5) N3	82/126	14.09	IIIB	IIIA	IIIB	IIIA	IIIB	IIIB	IIIB
T2(5-7)-T4 N2	1648/2229	14.34	IIIA/IIIB	IIIA	IIIB	IIIA	IIIB	IIIB	IIIB
T2(5-7)-T4 N3	581/677	21.73	IIIB	IIIB	IIIB	IIIB	IIIC	IIIC	IIIC

*Splitting algorithm uses stratified tests, and the HRs are calculated based on stratified model. Stratification factor is type of database submission (registry vs. other).

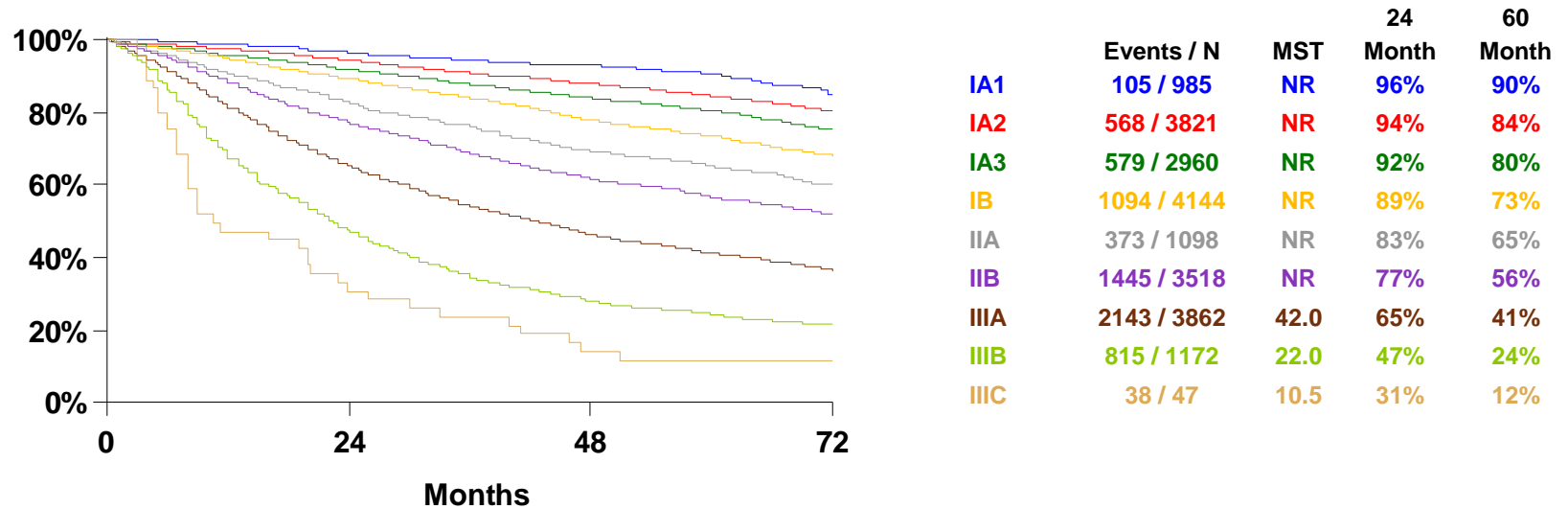
Proposal 6

Clinical Stage (training set)



Proposal 6

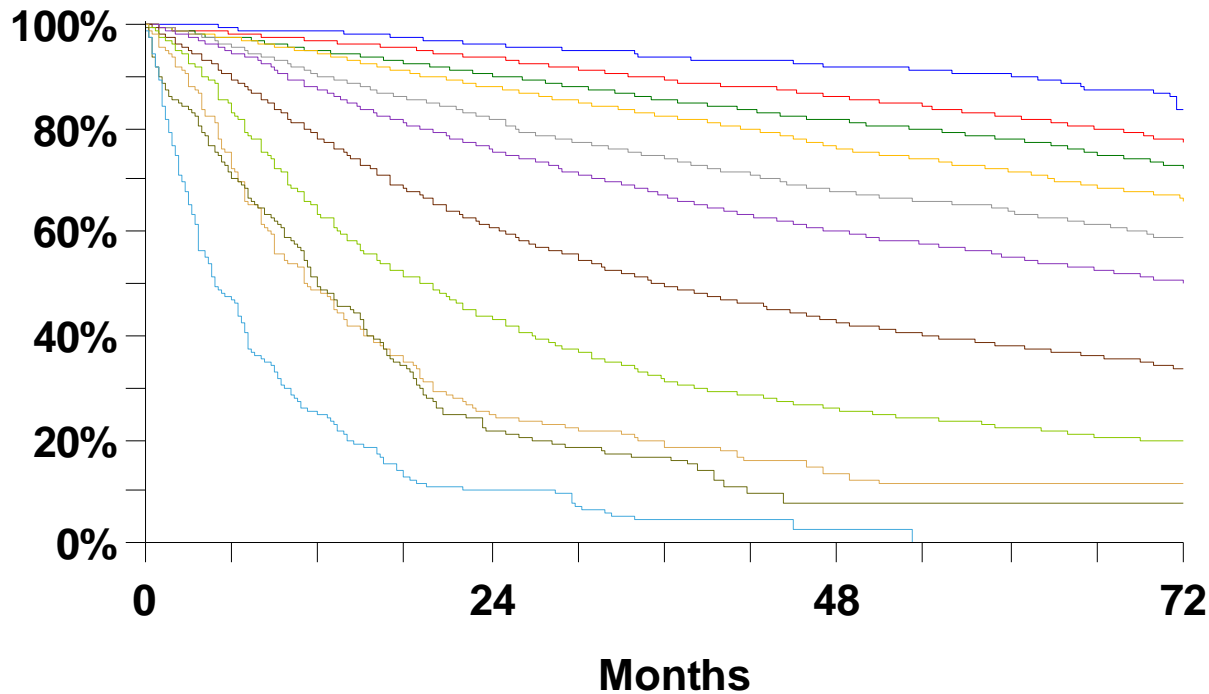
Pathologic Stage (training set)



Validation

Set

Proposal 6; Best
Stage



			24	60
	Events / N	MST	Month	Month
IA1	126 / 1223	NR	96%	90%
IA2	636 / 4135	NR	93%	82%
IA3	623 / 3097	NR	90%	78%
IB	1157 / 4308	NR	88%	72%
IIA	392 / 1133	NR	82%	64%
IIB	1532 / 3715	NR	76%	55%
IIIA	3126 / 5184	36.0	61%	38%
IIIB	1719 / 2339	19.7	43%	22%
IIIC	581 / 677	11.2	25%	11%
IVA	256 / 357	12.1	22%	8%
IVB	222 / 266	4.8	10%	0%

Proposed Stage Groups (1).

- Stage IA (1-3) T1a-c, N0 M0
- Stage IB T2a, N0 M0
- Stage IIA T2b, N0 M0
- Stage IIB T3, N0 M0
- Stage IIIA T1-2, N1 M0
- Stage IIIB T3, N1 M0
- Stage IIIC T4, N0-1 M0
- Stage IIID T1-2, N2 M0

Proposed Stage Groups (2).

- **Stage IIIB** **T1-2, N3 M0**
 T3-4, N2 M0
- **Stage IIIC** **T3-4, N3 M0**
- **Stage IVA** **T any, N any M1a-b**
- **Stage IVB** **T any, N any M1c**

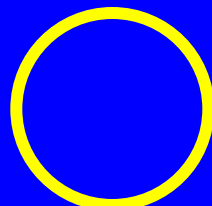
Proposed Stage Groupings for 8e

	N0		N1		N2		N3	
	v7	New	v7	New	v7	New	v7	New
T1a	IA	IA1	IIA	IIB	IIIA	IIIA	IIIB	IIIB
T1b	IA	IA2	IIA	IIB	IIIA	IIIA	IIIB	IIIB
T1c	IA	IA3	IIA	IIB	IIIA	IIIA	IIIB	IIIB
T2a	1B	IB	IIA	IIB	IIIA	IIIA	IIIB	IIIB
T2b	IIA	IIA	IIB	IIB	IIIA	IIIA	IIIB	IIIB
T3	IIB	IIB	IIIA	IIIA	IIIA	IIIB	IIIB	IIIC
T4	IIIA	IIIA	IIIA	IIIA	IIIB	IIIB	IIIB	IIIC
M1a	IV	IVA	IV	IVA	IV	IVA	IV	IVA
M1b	IV	IVA	IV	IVA	IV	IVA	IV	IVA
M1c	IV	IVB	IV	IVB	IV	IVB	IV	IVB

Surgical Implication of the Proposals for 8e.

Tumour Size

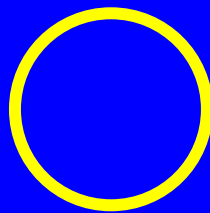
<u>Descriptor</u>	T 7e	T 8e	N0	N1	N2	N3
Size >4 - 5cms	T2a		IB	IIA	IIIA	IIIB
		T2b	IIA	IIB	IIIA	IIIB
		T2b	IIA	IIB	IIIA	IIIB

 = change of stage due to change of T descriptor

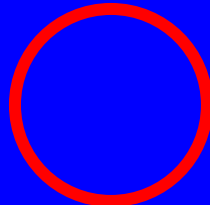
Surgical Implication of the Proposals for 8e.

Tumour Size

<u>Descriptor</u>	T 7e	T 8e	N0	N1	N2	N3
Size >5 - 7cms	T2b		IIA	IIB	IIIA	IIIB
		T3	IIB	IIIA	IIIA	IIIB
		T3	IIB	IIIA	IIIB	IIIC



= change of stage due to change of T descriptor

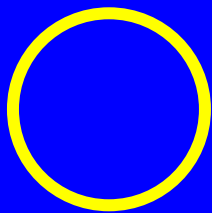


= change of stage grouping in 8e

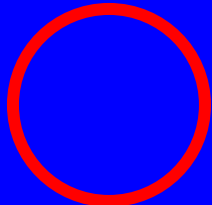
Surgical Implication of the Proposals for 8e.

Tumour Size (and diaphragm invasion)

<u>Descriptor</u>	T 7e	T 8e	N0	N1	N2	N3
Size >7cms	T3		IIIB	IIIA	IIIA	IIIB
		T4	IIIA	IIIA	IIIB	IIIB
		T4	IIIA	IIIA	IIIB	IIIC



= change of stage due to change of T descriptor

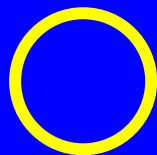


= change of stage grouping in 8e

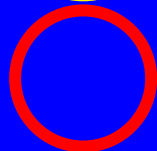
Surgical Implication of the Proposals for 8e.

Bronchial Extent

<u>Descriptor</u>	T 7e	T 8e	N0	N1	N2	N3
Tumour < 2cms from carina, total atelectasis	T3		IIB	IIIA	IIIA	IIIB
		T2a	IB	IIA	IIIA	IIIB
		T2a	IB	IIB	IIIA	IIIB



= change of stage due to change of T descriptor



= change of stage grouping in 8e

The Health Warnings!

- These are at present only *proposals*!
- Stage does not dictate treatment.
 - The proposals reflect prognosis according to *present treatment* algorithms used in *our data base*.
 - Any changes in treatment algorithms should be based on *clinical judgement*, supported by *appropriate trials*.

Implications (1)

- **Proliferation of size cut-point:**
 - Encourage debate on measurement of size, especially GGO/Mixed lesions.
- **T1a-c split in N0 cases:**
 - Implications for structured surveillance in screening programmes, (8-9% fall in 5-yr survival for each 1 cm).
 - Refine sub-groups in studies of sub-lobar resection/SABR/RFA in small node negative cancers.

Implications (2)

- **Additional groups for adjuvant chemotherapy?**
 - Tumours >4 - 5cms, N0, (IB to IIA).
 - Tumours >5 – 7cms, N0, (IIA to IIB).
 - Tumours > 7cms, N0 (IIB to IIIA).
 - Diaphragm invasion, N0, (IIB to IIIA).
- **Greater emphasis on adjuvant chemotherapy in R0 cases, possibly to induction chemotherapy:**
 - Tumours 0 – 4 cms, N1, (IIA to IIB).
 - Tumours 5 – 7 cms, N1, (IIB to IIIA).

Implications (3)

- **Strengthen argument against surgery:**
 - **Tumours >5cms or with diaphragm invasion,**
 - T3/T4 associated with N2, (IIIA to IIIB).
 - T3/T4 associated with N3, (IIIB to IIIC).
- **Less emphasis on adjuvant chemotherapy following R0 resection:**
 - **Tumours < 2 cms from carina/total atelectasis, N0, (IIB to IB).**

Implications (4)

- **Stronger argument for surgery + adjuvant chemotherapy:**
 - Tumours < 2 cms from carina/total atelectasis, associated with N1 disease, (IIIA to IIB).
- **New divisions of M1 disease, Stage IVA/B:**
 - Encourage greater use of local therapies, including surgery in conjunction with systemic treatment in M1b, oligometastatic disease.

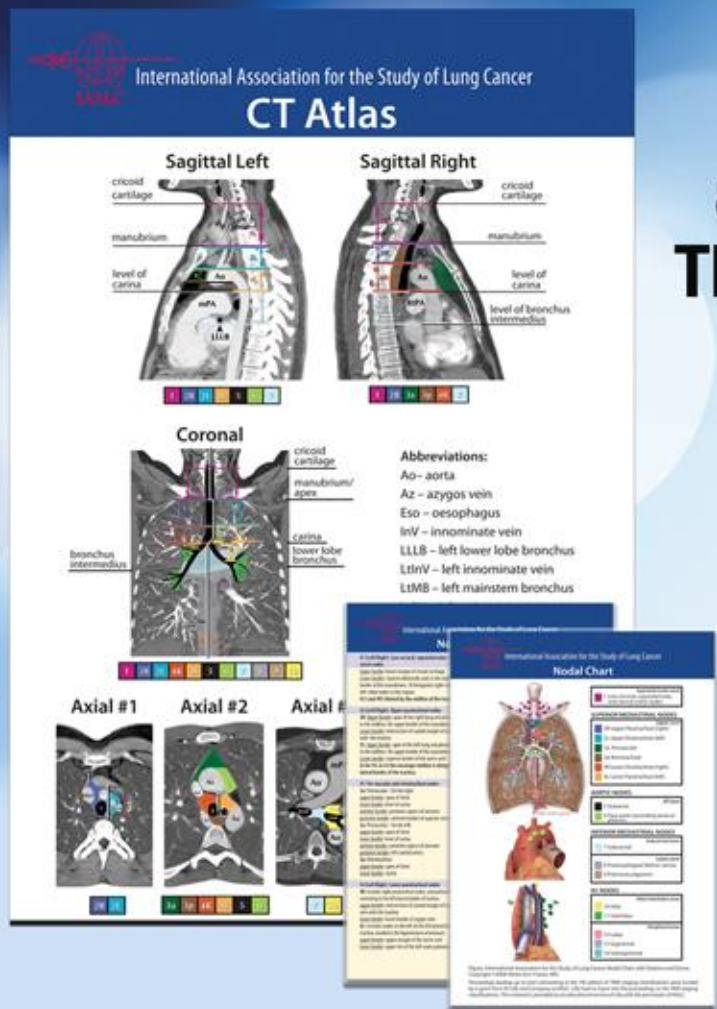
8th Edition of TNM

- **All proposals have been published in JTO**
 - **Free to non-members of IASLC.**
- **IASLC has submitted proposals to UICC/AJCC on Lung Cancer, Thymic malignancies and Mesothelioma July/August 2015.**
- **Publication presently scheduled for late 2016 (WCLC 2016 in Vienna).**
- **IASLC educational products available at WCLC Vienna, free/discounted for members.**
- **To be enacted January 2017.**



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