

Table 1. Biomarkers of targeted therapeutics associated with lung cancer, and listings by NCCN guidelines, NCCN Drugs and Compendia, and FDA approval

Biomarker	Therapeutic implications	Brand name	NCCN	Drugs and Compendia	FDA-approved	
					Lung	with biomarker
EGFR mutation	Erlotinib	Tarceva	x	x	x	x
	Gefitinib	Iressa			x	
	Afatinib	Gilotrif	x		x	x
ALK translocation	Cetuximab	Erbitux	x	x	x	
	Crizotinib	Xalkori	x	x	x	x
RAS	Trametinib	Mekinist				
	Gemcitabine	Gemzar		x	x	
RRM1	Pemetrexed	Alimta		x	x	
	Gemcitabine	Gemzar	x	x	x	
ERCC1	Platinum-based therapy					
ROS1 translocation	Crizotinib	[see above]				
HER2 mutation	Trastuzumab	Herceptin				
BRAF	Dabrafenib	Tafinlar				
MET expression	Tivantinib					
	Onartuzumab					
	Crizotinib	[see above]				
RET translocation	Vandetanib	Caprelsa				
	Sorafenib	Nexavar				
	Sunitinib	Sutent				
DDR2 mutation	Dasatinib	Sprycel				
Potential biomarker, no available						
FDA-approved drug						
MEK1 mutation						
PIK3ca, AKT1, PTEN alterations						
FGFR1 amplifications						
Beta-catenin mutation						
Unknown or not stated to be related to a biomarker	Bevacizumab	Avastin	x	x	x	
	Carboplatin	Generic	x	x	x	
	Cetuximab	Erbitux	x	x	x	
	Cisplatin	Generic	x	x	x	
	Docetaxel	Taxotere	x	x	x	
	Erlotinib	[see above]	x	x		
	Etoposide	Generic	x	x	x	
	Gemcitabine	[see above]	x			
	Ifosfamide	Ifex	x	x		
	Irinotecan	Camptosar	x	x	x	
	Mesna	Generic		x		
	Mitomycin	Generic	x	x		
	Paclitaxel	Generic	x	x	x	
	Pemetrexed	[see above]	x			
	Vinblastine	Generic	x	x	x	
Vinorelbine	Navelbine	x		x		

Figure 1. Accrual, consent, analysis, and results reporting

Abbreviations: AdenoCA – adenocarcinoma, POCOP – Point-of-Care Precision Oncology Program , SCCA – squamous cell cancer, VTB – virtual tumor board

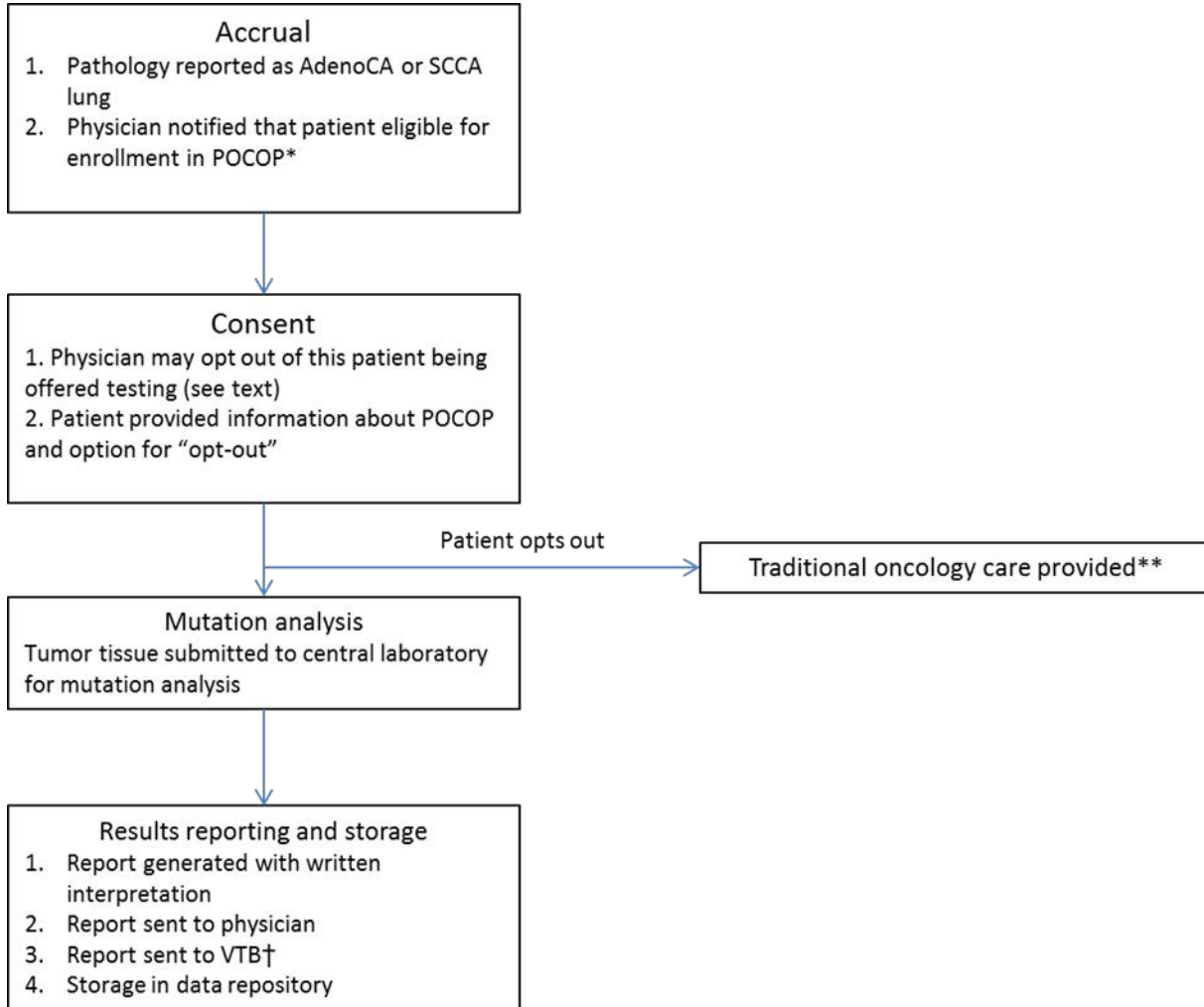
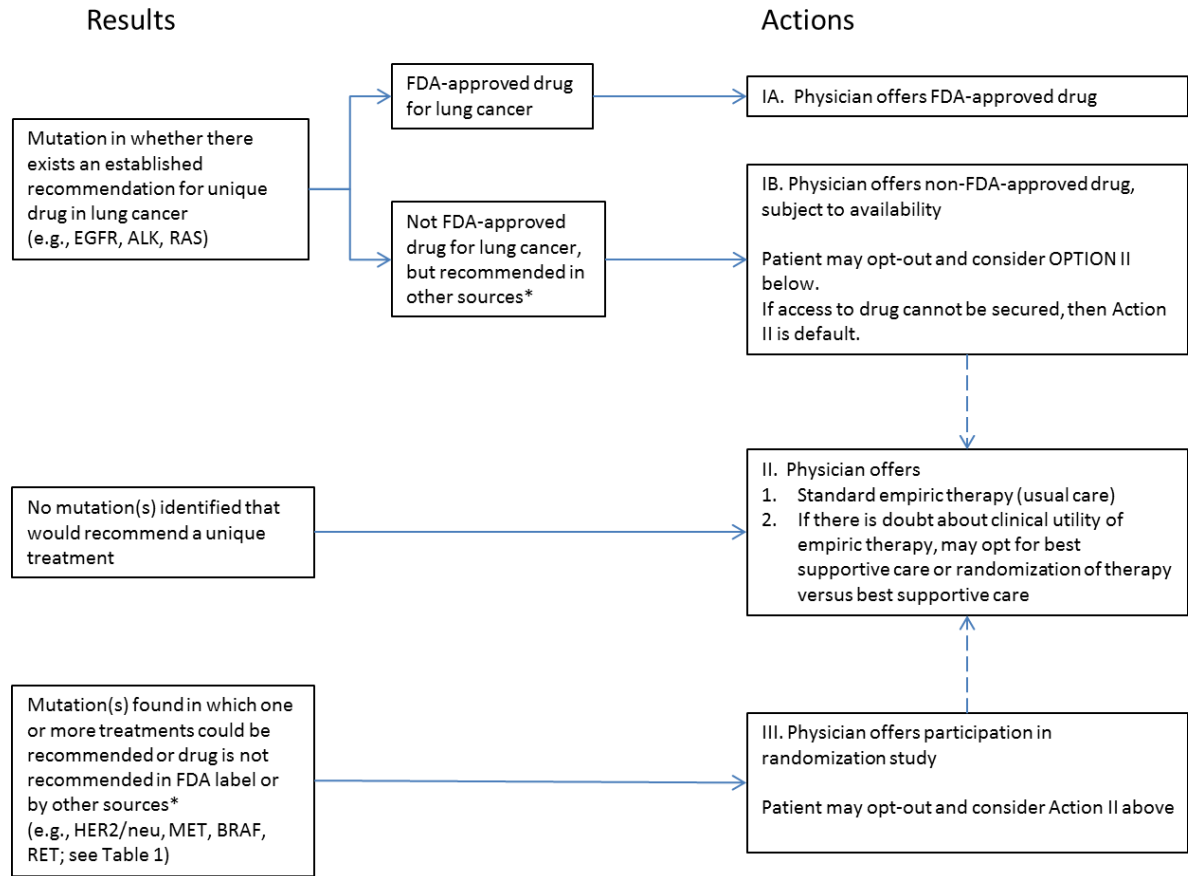


Figure 2. Possible results of mutation of analysis, and related actions



* e.g., NCCN or ASCO guidelines