NCCN 2025
Lung Cancer Congress

Lab Monitoring Made Simple:
A Practical Guide for the Oncology Care Team

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Learning Objectives

- Identify key laboratory tests required for monitoring patients receiving oral therapies.
- Differentiate lab monitoring requirements based on treatment class, mechanisms of action, and toxicity profile to ensure safe and effective patient management.
- Apply practical, team-based strategies to streamline lab monitoring in settings with limited access to dedicated oncology pharmacy support, including tools and workflows for the interprofessional team.

Core Laboratory Monitoring Concepts

Shift from intravenous to oral therapies

- Patients are not being seen by a provider prior to each dose
- Not receiving labs prior to each dose

Purpose

- Safety
- Efficacy
- Adherence
- Toxicity management

Types

- Baseline
- Follow-up
- As clinically indicated

Frequency

- Initiation
- Steady state
- Routine

Huff C, et al. *Clin J Oncol Nurs*. 2022;26(5):487-494; Signorelli J, et al. *J Oncol Pharm Pract*. 2022. doi:10.1177/10781552221112603

CBC, complete blood count; LFT, liver function tests; Scr, serum creatinine; eGFR, estimated glomerular filtration rate; CK, creatinine phosphokinase; TSH, thyroid stimulating hormone; ECG, electrocardiogram; ECHO, echocardiogram

Core Laboratory Monitoring Concepts

Common laboratory orders

- Hematologic – CBC with differential
- Hepatic and renal function – LFTs, SCr/eGFR
- Electrolytes & glucose
- Specialty labs
  - Lipid panel
  - CPK
  - TSH
  - Amylase/lipase
- Other important information
  - ECG/ECHO
  - Vitals

Role of a pharmacist

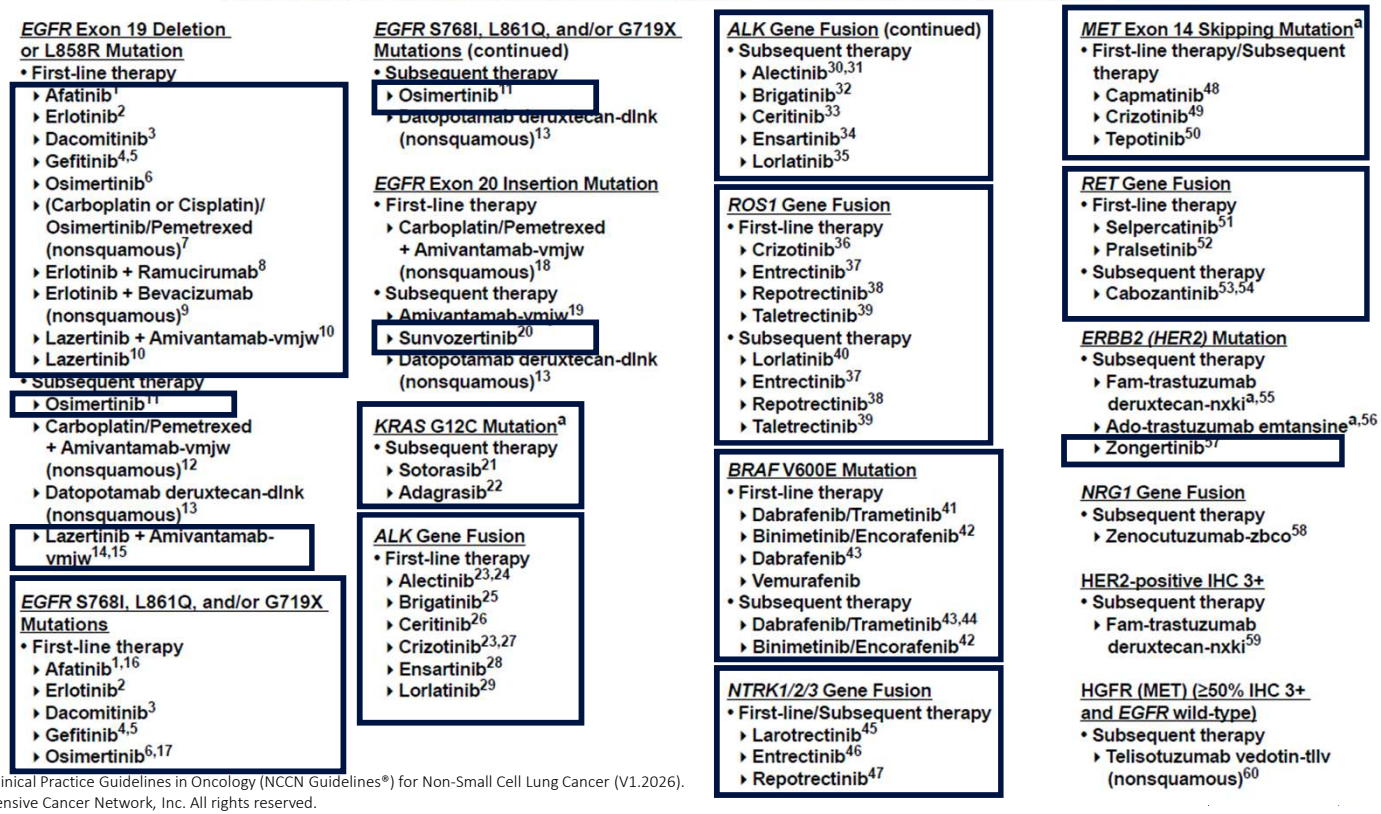
- Ensuring guideline adherence
- Baseline or follow-up dose adjustments
- Interpreting trends
- Management of laboratory related adverse events

Shook C, et al. *J Oncol Pharm Pract*. 2025;31(5):700-708; Signorelli J, et al. *J Oncol Pharm Pract*. 2022. doi:10.1177/10781552221112603

Oral Oncolytics

NON-SMALL CELL LUNG CANCER

PRINCIPLES OF BIOMARKER-DIRECTED THERAPY FOR ADVANCED OR METASTATIC DISEASE



NSCL-J, 2 of 6. The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Non-Small Cell Lung Cancer (V1.2026).

MAPK, mitogen-activated protein kinase; HER, human epidermal growth factor receptor; Qtc, corrected QT interval; hERG, human ether-a-go-go-related gene; PTEN, phosphatase and tensin homolog; Fox03a, Forkhead Box O3A; ROS, reactive oxygen species

Class Adverse Effects

EGFR - EPIDERMAL GROWTH FACTOR RECEPTOR

- Member of the ErbB/HER family of receptors that when bound to a ligand activates the MAPK pathway → cell proliferation
- Found on pneumocytes, vascular endothelial cells, epidermis, conjunctiva cells, vascular and uterine smooth muscle cells, keratinocytes, amniotic cells, placental membranes

Gastrointestinal – diarrhea

- Inhibition of epithelial growth → reduced healing of gastrointestinal mucosa
- Direct cytotoxicity of mucosal cells
- Gastrointestinal inflammation

Dermatological – acneiform rash, paronychia, abnormal hair growth, itching, dryness

- Disruption of keratinocyte function
- Folliculitis

Cardiovascular – Qtc prolongation, cardiomyopathy, heart failure

- Off-target blockade of the hERG encoded potassium channel proteins
- Disruption of PTEN/Akt/Fox03a survival pathway in cardiac cells
- ROS production

Chen J, et al. *Physiol Rev*. 2016;96(3):1025-1069; Holcmann M & Sibilia M. Mol Cell Oncol. 2015;2(4):e1004969; Shyam Sunder S, et al. *Signal Transduct Target Ther*. 2023;8(1):262.

MUGA, multigated acquisition

EGFR

Medication	Baseline Labs	Routine Labs
Osimertinib	CBC with differential ECG/electrolytes ECHO/MUGA	CBC with differential – periodically + as clinically indicated ECG/electrolytes – as clinically indicated ECHO/MUGA – every 3 months + at completion
Lazertinib	Liver function Renal function Electrolytes	Liver function - as clinically indicated Renal function - as clinically indicated Electrolytes - as clinically indicated
Afatinib	Liver function Renal function	Liver function - as clinically indicated Renal function - as clinically indicated
Dacomitinib	Electrolytes	Electrolytes - as clinically indicated
Erlotinib	Liver function Renal function	Liver function - periodically Renal function - periodically
Gefitinib	Liver function	Liver function - periodically

Osimertinib. Prescribing information. http://bit.ly/4ngbXPE. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC66. 2025; Lazertinib. Prescribing Information. https://bit.ly/4hnQXFt. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC144. 2025; Afatinib. Prescribing Information. http://bit.ly/3KXGIeS. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC60. 2025; Dacomitinib. Prescribing information. http://bit.ly/4qlfWgK. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC89. 2025; Erlotinib. Prescribing Information. http://bit.ly/47i4ERy. 2018; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC27. 2025; Gefitinib. Prescribing Information. http://bit.ly/3WhbbHf. 2023; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC65; 2025.

RTK, receptor tyrosine kinase ; AV, atrioventricular

Class Adverse Effects

ALK - ANAPLASTIC LYMPHOMA KINASE

- ALK gene encodes for RTK in the insulin receptor superfamily → cellular proliferation, survival, and differentiation

Gastrointestinal – nausea, vomiting, diarrhea, constipation	Muscle toxicity – CPK elevation, myalgia	Hepatotoxicity – LFT abnormalities	Cardiac – bradycardia, hypertension, AV block, edema	Neurological – mood changes, cognitive dysfunction, psychotic effects, seizure
• Mechanism is unclear	• Mechanism is unclear	• Mechanism is unclear → mitochondria dysfunction, increased ROS → apoptosis and necrosis	• Suppression of L-type calcium current in sinus node • Inhibition of cardiac pacemaker cells in the sinus atrial node	• Internalization and regulation of dopamine D2 receptor that control motor function, cognition, and motivation → dysregulation → psychiatric disorders

Arriola E, et al. *Clin Drug Investig*. 2024;44(8):553-576; Chen Y, et al. *Drug Des Devel Ther*. 2025;19:6219-6233;
Poei D, et al. *Cancer Drug Resist.* 2024;7:20; Shyam Sunder S, et al. *Signal Transduct Target Ther*. 2023;8(1):262

ALK

Medication	Baseline Labs	Routine Labs
Lorlatinib (also ROS1)	Blood glucose Liver function Renal function Lipid panel ECG/electrolytes Blood pressure	Blood glucose – periodically Liver function - as clinically indicated Renal function - as clinically indicated Lipid panel – months 1 & 2 + as clinically indicated ECG – periodically + as clinically indicated Blood pressure – 2 weeks → monthly
Alectinib	Liver function Creatine phosphokinase Electrolytes Heart rate	Liver function – every 2 weeks x 3 months → monthly + as clinically indicated Creatine phosphokinase – every 2 weeks x 1 month → as clinically indicated Electrolytes - as clinically indicated Heart rate - regularly

Lorlatinib. Prescribing information. http://bit.ly/4o0VeBl. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC92. 2025.
Alectinib. Prescribing Information. http://bit.ly/42NQne2. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC67. 2025.

ALK

Medication	Baseline Labs	Routine Labs
Brigatinib	Liver function Renal function Creatine phosphokinase Amylase/lipase Blood glucose Blood pressure & heart rate	Liver function – as clinically indicated Renal function – as clinically indicated Creatine phosphokinase – as clinically indicated Amylase/lipase – as clinically indicated Blood glucose – periodically Blood pressure – 2 weeks → monthly Heart rate – regularly
Ensartinib	Liver function Creatine phosphokinase Blood glucose Heart rate Uric acid	Liver function – every 2 weeks x 1 month → monthly + as clinically indicated Creatine phosphokinase – as clinically indicated Blood glucose – periodically Heart rate – regularly Uric acid – periodically

Brigatinib. Prescribing information. http://bit.ly/48DUld5. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC75. 2025.
Ensacove. Prescribing Information. http://bit.ly/4o4MABG. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC147. 2025.

Class Adverse Effects

KRAS - KIRSTEN RAT SARCOMA

- Belongs in the RAS superfamily – regulates cell proliferation, differentiation, and survival by controlling the cycling between inactive GDP-bound and active GTP-bound state

Gastrointestinal – nausea, vomiting, diarrhea

- Mechanism is unclear

Hepatotoxicity

- Drug-induced liver injury
- Immune-mediated following immune checkpoint inhibitor use

Jancík S, et al. *J Biomed Biotechnol*. 2010;2010:150960; Ernst SM, et al. *EBioMedicine*. 2024;102:105074.

KRAS

Medication	Baseline Labs	Routine Labs
Sotorasib	Liver function Electrolytes	Liver function – every 3 weeks x 3 months → monthly Electrolytes – as clinically indicated
Adagrasib	Liver function ECG/electrolytes	Liver function – monthly x 3 months → as clinically indicated ECG/electrolytes – as clinically indicated

Sotorasib. Prescribing information. http://bit.ly/47aFm9r. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC111. 2025.
Adagrasib. Prescribing Information. http://bit.ly/43t1eu2. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC130. 2025.

TRK, tropomyosin receptor kinase; PI3K, phosphatidylinositol 3-kinase; PLCγ, phospholipase C-gamma; STAT3, signal transducer and activator of transcription 3

Class Adverse Effects

ROS1 - PROTO-ONCOGENE TYROSINE-PROTEIN KINASE ROS

- Gene that codes for the ROS1 kinase domain fused to EGFR or TRKA → activation of various combinations of PLCγ, PI3K/AKT, STAT3, and MAPK/ERK signaling → cell proliferation and survival
- Tropomyosin receptor tyrosine kinases TRKA, TRKB, and TRK are also impacted by ROS1 inhibitors
  - Binding of TRKA → activation of the RAS/MAPK pathway → leading to increased cellular proliferation and growth
  - Responsible for development and normal functioning of nervous system

Gastrointestinal – nausea, vomiting, diarrhea, constipation	Neurological – dizziness, ataxia, peripheral neuropathy, and cognitive disorders	Edema
• Neurotrophic tyrosine receptor kinases → proper functioning of the enteric nervous system = GI motility and sensation	• Neurotrophic binding to TRKB → activation of the RAS-ERK, PI3K and PLCγ pathway → neuronal differentiation and survival	• Mechanism unclear

Amatu A, et al. *Ann Oncol*. 2019;30(Suppl_8):viii5-viii15; Davies KD & Doebele RC. *Clin Cancer Res*. 2013;19(15):4040-4045; Liu D, et al. *Ann Oncol*. 2020;31(9):1207-1215; Liu S. *Neurogastroenterol Motil*. 2018;30(10):e13446.

ROS1

Medication	Baseline Labs	Routine Labs
Taletrectinib	Liver function EGC/electrolytes Uric acid Creatine phosphokinase	Liver function – every 2 weeks x 2 months → monthly + as clinically indicated EGC/electrolytes – as clinically indicated Uric acid – periodically Creatine phosphokinase – every 2 weeks x 1 month → as clinically indicated
Repotrectinib (also NTRK)	Liver function Creatine phosphokinase Uric acid	Liver function – every 2 weeks x 1 month → monthly + as clinically indicated Creatine phosphokinase - every 2 weeks x 1 month → as clinically indicated Uric acid – periodically
Entrectinib (also NTRK)	ECHO/MUGA Liver function Uric acid ECG/electrolytes	Liver function – every 2 weeks x 1 month → monthly + as clinically indicated Uric acid – periodically ECG/electrolytes – periodically

Taletrectinib. Prescribing information. http://bit.ly/47j0f0S. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC150. 2025.
Repotrectinib. Prescribing Information. http://bit.ly/4o0XMiQ. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC134. 2025.
Entrectinib. Prescribing information. http://bit.ly/4nYZm4v. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC94. 2025.

RAF, rapidly accelerated fibrosarcoma; RAS, rat sarcoma; ERK, extracellular signal-regulated kinase

Class Adverse Effects

BRAF - PROTO-ONCOGENE B-RAF & MEK - MITOGEN-ACTIVATED EXTRACELLULAR KINASE

- BRAF is a member of the RAF family of kinases, along with MEK, within the RTK-RAS–RAF–MEK–ERK growth factor signaling pathway (also known as the MAPK/ERK pathway) → cell proliferation and survival

Gastrointestinal – nausea, vomiting, diarrhea

- MAPK/ERK pathway - proliferation, differentiation, and survival of gastrointestinal epithelium
- Inflammation of the gastrointestinal tract

Fever

- Inflammasome activation + interleukin 1 beta production in dendritic cells by BRAF inhibition →pro-inflammatory state

Rash

- MAPK/ERK pathway - proliferation, differentiation, and survival of keratinocytes

Garutti M, et al. *Cancers (Basel)*. 2022;15(1):141; Kuang AG, et al. *Ann Gastroenterol*. 2023;36(1):45-53; Poulikakos PI, et al. *Clin Cancer Res*. 2022;28(21):4618-4628; Thawer A, et al. *Curr Oncol*. 2021;28(5):3537-3553

BRAF

Medication	Baseline Labs	Routine Labs
Dabrafenib* Trametinib**	Blood glucose* Renal function* Electrolytes Liver function** ECHO**	Blood glucose – as clinically indicated Renal function – as clinically indicated Electrolytes – periodically Liver function – as clinically indicated ECHO – one month → every 2 -3 months *ECG* – NCCN recommends as clinically indicated for dabrafenib* *G6PD* – as clinically indicated*
Encorafenib* Binimetinib**	Liver function ECG/electrolytes* ECHO Creatine phosphokinase**	Liver function – monthly + as clinically indicated ECG – as clinically indicated ECHO – after one month → every 2 -3 months Creatine phosphokinase – periodically + as clinically indicated
Vemurafenib	ECG/electrolytes Liver function Renal function	ECG – after 15 days, monthly x 3 months → every 3 months + as clinically indicated Liver function – monthly + as clinically indicated Renal function – periodically

Dabrafenib. Prescribing information. http://bit.ly/3IXw7QC. 2025; Trametinib. Prescribing Information. http://bit.ly/3Wf946U. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC78. 2025. Encorafenib. Prescribing Information. http://bit.ly/3JmLJgz. 2025; Binimetinib. Prescribing information. http://bit.ly/3LjiMmc. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC138. 2025; Vemurafenib. Prescribing Information. http://bit.ly/43rAMRy. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC79. 2025.

TRK, tropomyosin receptor kinase; PI3K, phosphatidylinositol 3-kinase; PLCγ, phospholipase C-gamma

Class Adverse Effects

NTRK - NEUROTROPHIC TYROSINE RECEPTOR KINASE

- NTRK gene encodes TRK family of receptor tyrosine kinases – responsible for development and normal functioning of nervous system
  - Binding of TRKA → activation of the RAS/MAPK pathway → leading to increased cellular proliferation and growth

Neurological - dizziness, ataxia, and cognitive disorders	Pain	Gastrointestinal – nausea, vomiting, diarrhea, constipation
• Neurotrophic binding to TRKB → activation of the RAS-ERK, PI3K and PLCγ pathway → neuronal differentiation and survival	• TRK modulates pain via nerve growth factor • Can also have rebound pain when withdrawal of NTRK inhibitor	• Neurotrophic tyrosine receptor kinases → proper functioning of the enteric nervous system = GI motility and sensation

Amatu A, et al. *Ann Oncol*. 2019;30(Suppl_8):viii5-viii15; Liu D, et al. *Ann Oncol*. 2020;31(9):1207-1215; Liu S. *Neurogastroenterol Motil*. 2018;30(10):e13446.

NTRK

Medication	Baseline Labs	Routine Labs
Larotrectinib	Liver function	Liver function – every 2 weeks x 2 months → monthly + as clinically indicated

Larotrectinib. Prescribing Information. http://bit.ly/471dynN. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC93. 2025.

HGF, hepatocyte growth factor; VEGF, vascular endothelial growth factor

Class Adverse Effects

MET - MESENCHYMAL-EPITHELIAL TRANSITION

- RTK predominantly expressed by epithelial cells
- Binding of HGF → activation ERK, PI3K/AKT, STAT3, and Rac1 → proliferation, survival

Edema

- HGF/MET signaling pathway →increased endothelial cell permeability
- Inhibition of the MATE proteins → increase in creatinine
- HGF pathway blocked → impaired albumin production in hepatocyte

Hepatotoxicity

- HGF/MET pathway blocked → impaired liver regeneration

Pancreatitis

- HGF/MET pathway blocked → impaired regeneration of epithelial and acinar cells

Gaziova I, et al. *PLoS One*. 2016;11(10):e0165485; Lin JX, et al. *Transl Lung Cancer Res*. 2025;14(4):1482-1495;
Parikh RA, et al. *Onco Targets Ther*. 2014;7:969-983; Wood GE, et al. *Oncogene*. 2021;40(11):1927-1941

MET

Medication	Baseline Labs	Routine Labs
Capmatinib	Liver function Amylase/lipase	Liver function – every 2 weeks x 3 months → monthly + as clinically indicated Amylase/lipase – regularly
Tepotinib	Liver function Amylase/lipase	Liver function – every 2 weeks x 3 months → monthly + as clinically indicated Amylase/lipase – regularly

Capmatinib. Prescribing Information. http://bit.ly/477dRMo. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC102. 2025.
Tepotinib. Prescribing Information. http://bit.ly/4ovdnqK. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC108. 2025.

GFRα, GDNF family receptor alpha-1; GFL, GDNF family ligands; JAK, Janus kinases; PAK, protein kinase A; PKC, protein kinase C; FGFR, fibroblast growth factor receptor

Class Adverse Effects

RET- REARRANGED DURING TRANSFECTION

- RET gene was not bound directly to the ligands. Instead, the RET ligands first bind to the GFRα receptor. The GFL–GFRα complex then mediated RET homodimerization, which lead to autophosphorylation and then activated the proliferation pathways such as MAPK, PI3K, JAK-STAT, PKA, and PKC
- VEGF and FGFR are also impacted by RET inhibitors

Gastrointestinal – nausea, vomiting, diarrhea, constipation	Hypertension	Hepatotoxicity
• FGFR inhibition → upregulates conversion of cholesterol to bile acid in the liver → modified bile acid metabolism → increase intestinal water secretion, increase mucosal permeability, and stimulate peristalsis → diarrhea	• VEGF → increased vasoconstrictor levels, decreased vasodilator levels, vascular rarefaction, and renal damage	• Mechanism unclear

Gomez JA. *Am Heart J Plus*. 2022;17:100144; Subbiah V & Verstovsek S. *Cell Rep Med*. 2023;4(10):101204; Viganò M, et al. *Cancers (Basel)*. 2023;15(6):1766; Zhao L, et al. *Front Oncol*. 2023;13:1090757

RET

Medication	Baseline Labs	Routine Labs
Selpercatinib	Liver function Blood pressure ECG/electrolytes Thyroid function	Liver function – every 2 weeks x 3 months → monthly + as clinically indicated Blood pressure – 1 week → monthly + as clinically indicated ECG/electrolytes – periodically Thyroid function – periodically
Pralsetinib	Blood pressure Liver function	Blood pressure – 1 week → monthly + as clinically indicated Liver function – every 2 weeks x 3 months → monthly + as clinically indicated
Cabozantinib (tablet)	Blood pressure Liver function Urinalysis Thyroid function Calcium	Blood pressure – regularly Liver function – periodically Urinalysis – regularly Thyroid function – as clinically indicated Calcium – as clinically indicated

Selpercatinib. Prescribing information. http://bit.ly/4o3iQoT. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC99. 2025.
Pralsetinib. Prescribing Information. http://bit.ly/4hgClaG. 2024; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC107. 2025.
Cabozantinib. Prescribing Information. http://bit.ly/4nhxLup. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC101. 2025.

Class Adverse Effects

HER2 - HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2

- ERBB family of RTKs - four members → EGFR (ERBB1/HER1), ERBB2 (HER2), ERBB3 (HER3), and ERBB4 (HER4)
- Activation of HER2-mediated signaling pathways = heterodimerization with ligand-activated EGFR or ERBB3

Gastrointestinal – diarrhea

- Inhibition of HER2 & EGFR on intestinal cells → disrupt chloride balance → osmotic gradient pulling water into the intestines → secretory diarrhea
- Blocking EGFR/HER2 pathway → direct damage, reduced growth, and increased permeability of the gut lining → inflammation and diarrhea

Rash

- EGFR → Disruption of keratinocyte function

Hepatotoxicity

- Mechanism unclear

Cardiotoxicity – left ventricular dysfunction, cardiomyopathy

- Disruption of the protective functions of HER2 in the cardiomyocyte

Copeland-Halperin RS, et al. *Curr Opin Cardiol*. 2019;34(4):451-458; Holcmann M & Sibilia M. *Mol Cell Oncol.* 2015;2(4):e1004969; Hsu JL & Hung MC. *Cancer Metastasis Rev*. 2016;35(4):575-588; Sun K, et al. *Cancer Control*. 2024;31:10732748241278039

HER2

Medication	Baseline Labs	Routine Labs
Zongertinib	Liver function ECHO/MUGA	Liver function – every 2 weeks x 12 weeks → monthly + as clinically indicated ECHO/MUGA – at regular intervals + as clinically indicated

Zongertinib. Prescribing Information. http://bit.ly/4n7P9Bz. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC153. 2025.

Other

Medication	Baseline Labs	Routine Labs
Ceritinib (ALK, ROS1, MET exon 14 skipping)	Liver function ECG/electrolytes Blood glucose Heart rate & blood pressure Amylase/lipase	Liver function – monthly + as clinically indicated ECG/electrolytes – periodic Blood glucose – periodic Heart rate & blood pressure – regularly Amylase/lipase – periodically
Crizotinib (ALK, ROS1, MET exon 14 skipping)	Liver function Renal function CBC with differential ECG/electrolytes Heart rate & blood pressure	Liver function – every 2 weeks x 2 months → monthly + as clinically indicated CBC with differential – monthly ECG/electrolytes – as clinically indicated Heart rate & blood pressure – regularly

Medication	Baseline Labs	Routine Labs
Erdafitinib	Phosphate	Phosphate – between day 14 – 21 → monthly + as clinically necessary

Ceritinib. Prescribing information. http://bit.ly/3JdIVlU. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC61. 2025.
Crizotinib. Prescribing Information. http://bit.ly/4qfACXv. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: NSC51. 2025.
Erdafitinib. Prescribing Information. http://bit.ly/4hqd2U0. 2024.

ASCO, American Society of Clinical Oncology; HBV, hepatitis B virus; HBsAg, hepatitis B surface antigen; anti-HBc, hepatitis B core antibody; anti-Hbs, hepatitis B surface antigen; Ig, immunoglobulin

Hepatitis B

- ASCO recommendations hepatitis B screening
  - HBV with HBsAg, anti-HBc, total Ig or IgG, and anti-HBs
  - Prior to beginning systemic anticancer therapy – do not delay treatment for screening/results
  - Detection of chronic or past HBV infection → potential antiviral prophylaxis

Hwang JP, et al. *J Clin Oncol*. 2020;38(31):3698-3715

Oral Options in Small Cell Lung Cancer

Medication	Baseline Labs	Routine Labs
Etoposide	CBC with differential Liver function Renal function	CBC with differential – with every cycle Liver function – with every cycle Renal function – with every cycle
Temozolomide	CBC with differential Liver function	CBC with differential – as clinically indicated Liver function – midway through cycle 1, prior to each cycle, 2 – 4 weeks after the last dose + as clinically indicated
Topotecan	CBC with differential Renal function	CBC with differential – frequently Renal function – prior to each cycle

Etoposide. Prescribing information. http://bit.ly/3WblnB7. 2016; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: SCL17. 2025; Temozolomide. Prescribing Information. http://bit.ly/4oneYP8. 2025; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: SCL22. 2025. Topotecan. Prescribing Information. http://bit.ly/42MqUSq. 2022; National Comprehensive Cancer Network. NCCN Chemotherapy Order Templates: SCL125. 2025.

Practical Application: Streamlining Lab Monitoring in the Real World

Barriers

- Patient adherence
- Fragmented care
  - Community vs academic setting
- Limited access to oncology dedicated pharmacists

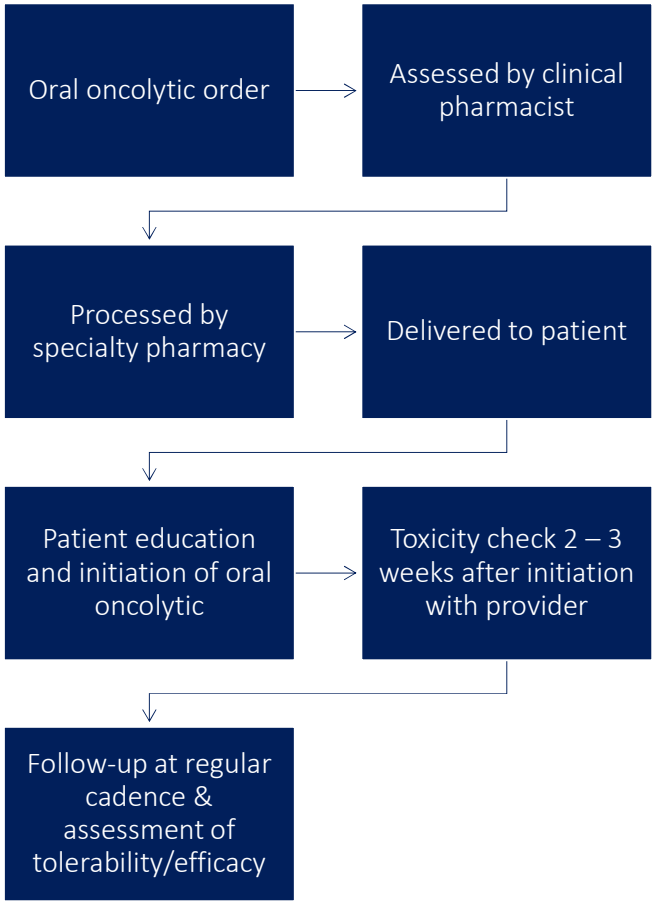
Tools within the electronic medical record

- Electronic medical record
  - Protocols with medication-specific embedded laboratory orders
  - Order sets
  - Reminder lists
  - Health Information Exchange platform
- Telehealth and centralized monitoring
- Satellite locations

Levit LA, et al. *JCO Oncol Pract*. 2020;16(7):422-430; Shook C, et al. *J Oncol Pharm Pract*. 2025;31(5):700-708;
Raez LE, et al. *JCO Oncol Pract*. doi:10.1200/OP-25-00279

Workflow at Penn

- Providers – oncologists, specialists, advanced practice providers
- Pharmacy – clinical pharmacists, specialty pharmacists, pharmacy technicians
- Nursing – triage and clinic nurses
- Phlebotomy



Summary and Key Takeaways

- Laboratory monitoring is critical to ensure safe and effective oral oncolytic use
- Molecular and biomarker-driven therapy has transformed NSCLC management, expanding treatment to targeted oral options tailored to specific genomic alterations
  - —Each agent having a distinct side effect profile that require individualized monitoring
- Electronic medical record integration and team-based collaboration are key drivers of safe, efficient monitoring, and improved outcomes in oral targeted therapy

National Comprehensive Cancer Network®

NCCN 30th ANNIVERSARY

Who We Are

An alliance of leading cancer centers devoted to patient care, research, and education

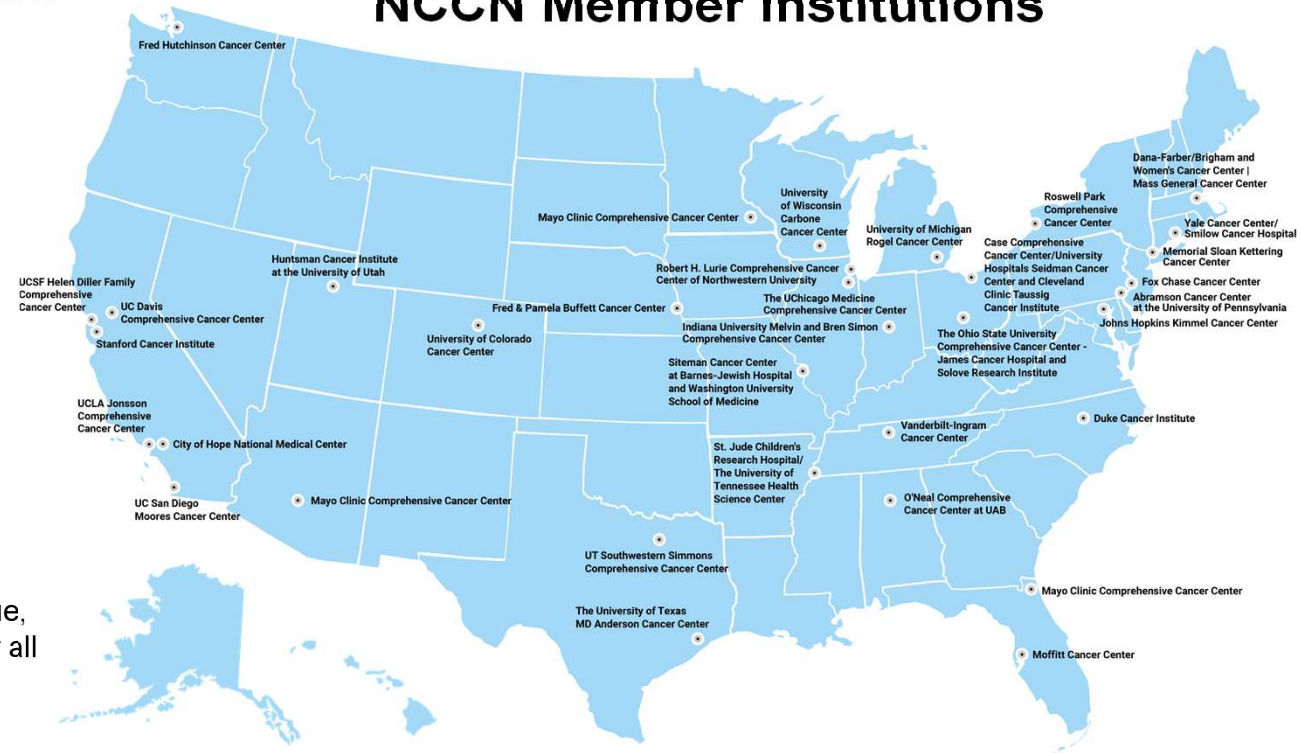
Our Mission

To define and advance quality, effective, equitable, and accessible cancer care and prevention so all people can live better lives

Our Vision

Access to high-quality, high-value, patient-centered cancer care for all people globally

NCCN Member Institutions



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