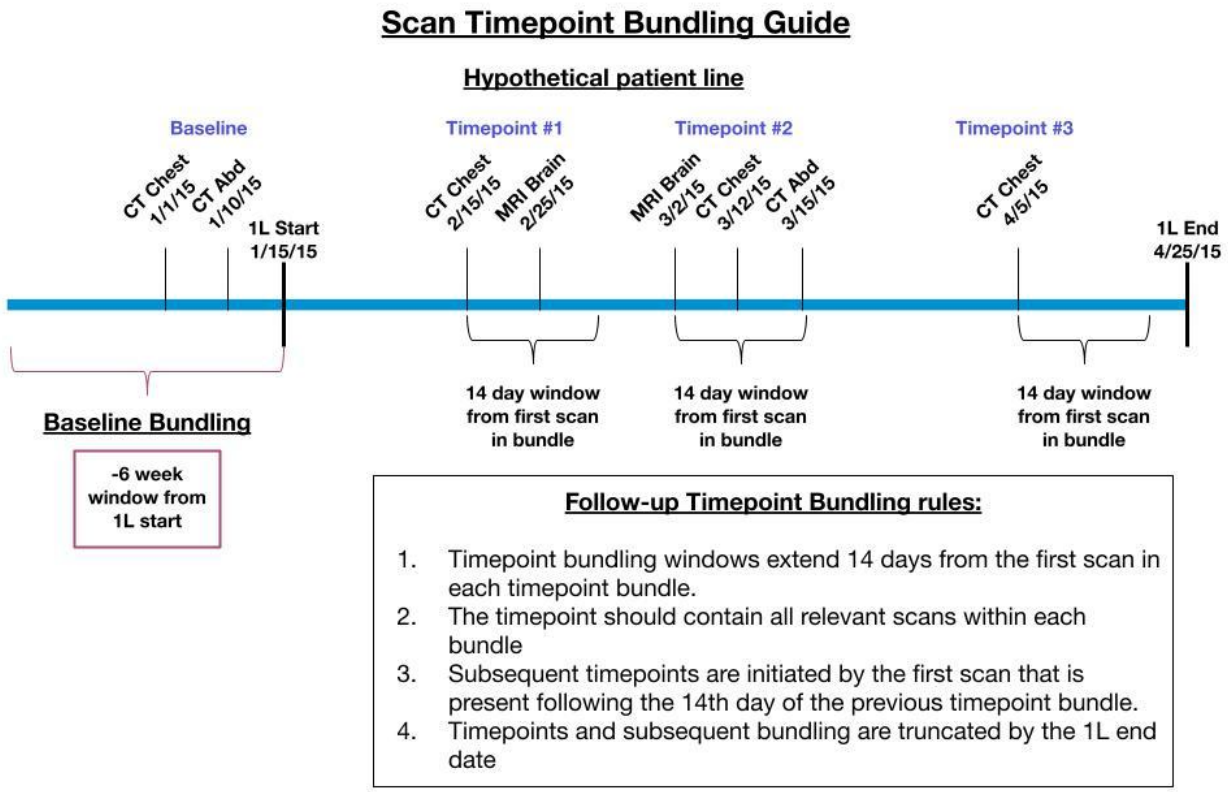
Supplemental Online Content

Ma X, Bellomo L, Hooley I, et al. Concordance of clinician-documented and imaging response in patients with stage IV non–small cell lung cancer treated with first-line therapy. *JAMA Network Open*. 2022;5(5):e229655. doi:10.1001/jamanetworkopen.2022.9655

This supplemental material has been provided by the authors to give readers additional information about their work.

Supplemental Figure 1. Scan Timepoint Bundling Guide



Supplemental Table 1. Cohort characteristics for the feasibility evaluation and the concordance analysis. Comparison with the parent database where the cohorts were sourced

		Feasibility Cohort (N=1210)	Concordance Cohort (N=100)	In feasibility cohort, not in concordance cohort (N=1110)	Stage IV, with 1L for aNSCLC in parent database (N=23,821)
Median age at metastatic diagnosis, y [IQR]		69.0 [62.0;76.0]	67.5 [60.8;76.0]	70.0 [62.0;76.0]	68.0 [61.0;75.0]
Sex, n (%)	Female	591 (48.8)	51 (51.0)	540 (48.6)	11055 (46.4)
	Male	619 (51.2)	49 (49.0)	570 (51.4)	12766 (53.6)
Race, n (%)	Asian	31 (2.6)	3 (3.0)	28 (2.5)	676 (2.8)
	Black/Afr.Am	42 (3.5)	1 (1.0)	41 (3.7)	2012 (8.4)
	Other	96 (7.9)	6 (6.0)	90 (8.1)	2213 (9.3)
	Unknown	155 (12.8)	6 (6.0)	149 (13.4)	2528 (10.6)
	White	886 (73.2)	84 (84.0)	802 (72.3)	16392 (68.8)
Histology, n (%)	Non-squamous cell	919 (76.0)	83 (83.0)	836 (75.3)	17891 (75.1)
	NOS	49 (4.0)	0 (0.0)	49 (4.4)	1250 (5.2)
	Squamous cell	242 (20.0)	17 (17.0)	225 (20.3)	4680 (19.6)
Smoking history, n (%)	Yes	992 (82.0)	82 (82.0)	910 (82.0)	20083 (84.3)
	No	215 (17.8)	18 (18.0)	197 (17.7)	3512 (14.7)
	Unknown	3 (0.2)	0 (0.0)	3 (0.3)	226 (0.9)
Metastatic	2011-14	497 (41.1)	36 (36.0)	461 (41.5)	9384 (39.4)

		Feasibility Cohort (N=1210)	Concordance Cohort (N=100)	In feasibility cohort, not in concordance cohort (N=1110)	Stage IV, with 1L for aNSCLC in parent database (N=23,821)
diagnosis year, n (%)	2015-17	501 (41.4)	49 (49.0)	452 (40.7)	10115 (42.5)
	≥2018	212 (17.5)	15 (15.0)	197 (17.7)	4322 (18.1)
EGFR mut, n (%)	Tested	585 (48.3)	54 (54.0)	531 (47.8)	12647 (53.1)
	Mutation negative	433 (74.0)	37 (68.5)	396 (74.6)	9684 (76.6)
	Mutation positive	114 (19.5)	13 (24.1)	101 (19.0)	2181 (17.2)
	Other	38 (6.5)	4 (7.4)	34 (6.4)	782 (6.2)
ALK alteration, n (%)	Tested	580 (47.9)	52 (52.0)	528 (47.6)	11692 (49.1)
	Rearrangement not present	496 (85.5)	48 (92.3)	448 (84.8)	10174 (87.0)
	Rearrangement present	25 (4.3)	3 (5.8)	22 (4.2)	385 (3.3)
	Other	59 (10.2)	1 (1.9)	58 (11.0)	1133 (9.7)
KRAS mut, n (%)	Tested	195 (16.1)	17 (17.0)	178 (16.0)	4833 (20.3)
	Mutation negative	121 (62.1)	7 (41.2)	114 (64.0)	3252 (67.3)
	Mutation positive	62 (31.8)	9 (52.9)	53 (29.8)	1363 (28.2)
	Other	12 (6.2)	1 (5.9)	11 (6.2)	218 (4.5)
1L therapy, n (%)	ALK inhibitor	22 (1.8)	3 (3.0)	19 (1.7)	487 (2.0)
	Anti-VEGF-based	192 (15.9)	27 (27.0)	165 (14.9)	4129 (17.3)
	Clinical study	6 (0.5)	0 (0.0)	6 (0.5)	707 (3.0)

		Feasibility Cohort (N=1210)	Concordance Cohort (N=100)	In feasibility cohort, not in concordance cohort (N=1110)	Stage IV, with 1L for aNSCLC in parent database (N=23,821)
	EGFR TKI	128 (10.6)	19 (19.0)	109 (9.9)	2530 (10.6)
	Anti-EGFR antibody -based	3 (0.2)	1 (1.0)	2 (0.2)	82 (0.3)
	Non-platinum-based chemo. comb.	3 (0.2)	0 (0.0)	3 (0.3)	44 (0.2)
	Other	1 (0.1)	0 (0.0)	1 (0.1)	46 (0.2)
	PD-(L)1-based	182 (15.1)	15 (15.0)	167 (15.1)	4206 (17.7)
	Platinum-based chemo. comb.	631 (52.4)	35 (35.0)	596 (53.9)	10701 (44.9)
	Single-agent chemotherapy	37 (3.1)	0 (0.0)	37 (3.3)	889 (3.7)

ALK=anaplastic lymphoma kinase; EGFR=epidermal growth factor receptor; IQR=interquartile range; NOS=not otherwise specified; PD-(L)1=programmed cell death-(ligand) 1; TKI=tyrosine kinase inhibitor; VEGF=vascular endothelial growth factor

Supplemental Table 2. Detailed concordance results according to scan availability and modality of available scans

Description	N	Best unconfirmed response	Best confirmed response	Dichotomized unconfirmed response	Dichotomized confirmed response
Baseline scan modality and coverage, agreement % (95% CI)					
Had CT C/A/P and CT/MRI brain	36	63.9 (46.2, 79.2)	58.3 (40.8, 74.5)	72.2 (54.8, 85.8)	69.4 (51.9, 83.7)
Had CT C/A/P	36	63.9 (46.2, 79.2)	47.2 (30.4, 64.5)	88.9 (73.9, 96.9)	75.0 (57.8, 87.9)
Had CT with partial C/A/P coverage (with or without PET CT or MRI)	28	42.9 (24.5, 62.8)	50 (30.6, 69.4)	57.1 (37.2, 75.5)	67.9 (47.6, 84.1)
Consistent anatomic coverage from baseline to end of follow-up, agreement % (95% CI)					
No	84	59.5 (48.3, 70.1)	52.4 (41.2, 63.4)	73.8 (63.1, 82.8)	69 (58.0, 78.7)
Yes	16	50 (24.7, 75.3)	50 (24.7, 75.3)	75 (47.6, 92.7)	81.2 (54.4, 96)

CT=computed tomography; C/A/P=chest, abdomen, or pelvis; MRI=magnetic resonance imaging; PET=positron emission tomography

Supplemental Table 3. Reasons for discordant cases between CAR and IRb-RECIST in binary confirmed response

Reason	Example	Number of Cases	% of total discordant cases
Threshold for response	rwPR not meeting the 30% threshold for IRb-RECIST PR	9	31%
Availability of scans	Digital images unavailable in a given follow-up timepoint	6	21%
	Baseline digital images of a certain anatomic region were unavailable, which resulted in false new lesion RECIST PD	4	13%
Other	Abstractor error	3	10%
	Lack of documentation in EHR	3	10%
	Clinician documentation (CAR) and IRb-RECIST output misalign	3	10%
	Unknown	1	3%

CAR=clinician-assessed response; PD=progressive disease; NE=non-evaluable; PR=partial response; IRb-RECIST=imaging response based on RECIST.