PUBLIC-DATA RESEARCH EXAMPLE / 02

MSK-CHORD · NSCLC

Genomic pathway review • Treatment eligibility audit • Feasibility decision before causal modeling

NSCLC cohort reviewed	Restricted research cohort	Feasibility conclusion
7,809 patient records	625 patients: A 298 / B 327	Limited GO for exploration; NO-GO for individual treatment-benefit claims

1 Research question

Are the available patient-level genomic, clinical, treatment and outcome records sufficient to investigate whether RTK/RAS/MAPK pathway state modifies the contrast between two systemic regimens in NSCLC?

2 Inputs and patient-level screening

Reviewed public mutation/SV panels, treatment records, diagnosis/stage, timing of sequencing and follow-up variables. A restricted feasibility cohort required eligible regimen definitions, tumor-specific criteria, pretreatment molecular sampling and landmark eligibility. Counts are algorithmic research filters, not adjudicated clinical treatment-line assignments.

Treatment A	Treatment B
Platinum-based chemotherapy doublet + immune checkpoint inhibitor	Platinum-based chemotherapy doublet without immune checkpoint inhibitor
298 patients in the main screening cohort	327 patients in the main screening cohort
171 with core genomic pathway-driving evidence	190 with core genomic pathway-driving evidence

3 Biology-guided representation

Defined evidence-supported RTK and downstream RAS/RAF/MEK mechanisms while separating uncertain variants from core evidence. The constructed state represents genomic evidence of drivers, not direct measurements of signaling activity or proven immunotherapy sensitivity.

4 Decision and unresolved biases

Limited GO: a pre-specified, low-dimensional hypothesis and overlap diagnostics are reasonable next research steps. NO-GO: no causal A/B treatment-benefit estimation has yet been performed, and the review cannot support personal treatment choice. Treatment era, line of therapy, PD-L1 quantitative TPS, chemotherapy backbone, prior therapies and confounding require further scrutiny.

5 Reusable service outputs

A data-readiness summary; auditable cohort-selection rules; clinical and genomic data linkage; eligibility and event-count tables; pathway-state definitions; study limitations; and a stage-gated recommendation for next analyses.

Important limitations

The A/B groups are observational and not exchangeable by default. Unadjusted survival fractions must not be interpreted as treatment effects. Public-data access does not automatically authorize commercial reuse. This report is a feasibility demonstration, not a validated treatment recommendation or a claim of superior outcomes.

Source: public MSK-CHORD research dataset (github.com/cBioPortal/datahub/tree/master/public/msk_chord_2024); related publication doi:10.1038/s41586-024-08167-5. Results based on an October 6, 2026 feasibility analysis. Not endorsed by MSK or the data providers.