

Table 1 Evaluation Questions and Indicators

Screening Pathway Component	Evaluation Question	Indicators
Recruitment	<ul style="list-style-type: none"> Did individuals accept referral to screening program? Did recruitment strategies engage individuals representative of the target population? Did recruitment processes occur as intended? 	1.1: Number of self-presenting individuals, stratified by recruitment stream, demographics 1.2: Proportion of self-presenting individuals who met triage criteria, stratified by recruitment stream, demographics 1.3: Number of provider-referred individuals, stratified by recruitment stream, demographics, referring provider type 1.4: Proportion of individuals who had a risk assessment booked of those who met triage criteria, stratified by demographics; for those who did not have a risk assessment booked, stratify by reason
Risk Assessment	<ul style="list-style-type: none"> Did recruitment strategies identify individuals who were found to be eligible for screening after risk assessment? Did eligible individuals choose to participate in screening following a discussion of the harms and benefits? Did risk assessment processes occur as intended? 	2.1: Wait time from triage completed or physician referral received to risk assessment completed 2.2: Proportion of individuals eligible for screening, stratified by demographics, primary care provider (PCP) status, smoking status 2.3: Proportion of individuals who had a risk assessment booked but did not complete risk assessment, stratified by reason 2.4: Proportion of eligible individuals who did not have an LDCT scan booked, stratified by demographics and reason 2.5: Wait time from risk assessment completed to date of LDCT appointment, stratified by PCP status
Smoking Cessation	<ul style="list-style-type: none"> Did participants who smoke participate in smoking cessation programs? Did participants who smoke quit or reduce smoking? Did smoking cessation processes occur as intended? 	3.1: Number of quit attempts reported per participant (at baseline and recall appointments) 3.2: Proportion of participants who quit smoking during the HRLCS pilot 3.3: Heaviness of smoking index (at baseline and recall appointments) 3.4: Proportion of current smokers who accepted referral to smoking cessation services, stratified by demographics, service type (in-hospital smoking cessation program, Smokers' Helpline, or both); for those who did not accept referral, stratify by reason 3.5: Proportion of current smokers who accepted referral to in-hospital smoking cessation who attended first in-person smoking cessation counselling session, stratified by demographics; for those who did not attend, stratify by reason
Low Dose CT Scan	<ul style="list-style-type: none"> Were eligible participants screened? What were the LDCT scan results? Did screening impact access to CT services? Did the LDCT scan process occur as intended? 	4.1: Proportion of eligible participants who had a baseline LDCT scan, stratified by demographics; for those who did not have a baseline LDCT, stratify by reason 4.2: Wait time from risk assessment completed to baseline LDCT scan completed 4.3: Duration of participant hospital visit (from check-in to discharge) 4.3.1: Report turnaround time (wait time from LDCT scan completed to radiology report verification) 4.3.2: Wait time from radiology report verification to navigator relaying result to participant 4.4: Proportion of LDCT scans with each Lung-RADS™ score (0, 1, 2, 3, 4a, 4b, or 4x), stratified by screening round 4.5: Proportion of LDCT scans with incidental findings detected, stratified by type of incidental finding, indication of levels of severity, and screening round 4.6: CT scan wait time from imaging order received date to the date the procedure is performed (for screening participants and non-screening individuals before and during HRLCS pilot) 4.7: Report turnaround time (thoracic CTs only, for non-screening individuals before and during HRLCS pilot)
Recall and Follow-up	<ul style="list-style-type: none"> Did participants return for recall or follow-up LDCT scans? Did participants with abnormal findings receive appropriate follow-up? Did the recall and follow-up processes occur as intended? 	5.1: Proportion of participants with a Lung-RADS™ 1-2 result who had a recall LDCT in recommended interval (12 months), stratified by demographics; for those not screened within recommended interval, stratify by reason 5.2: Proportion of participants with a Lung-RADS™ 3 result who had a follow-up LDCT in recommended interval (6 months), stratified by demographics; for those not screened within recommended interval, stratify by reason 5.3: Proportion of participants with a Lung-RADS™ 4 result who were referred to Lung Diagnostic Assessment Program (DAP), stratified by demographics; for those not referred to DAP, stratify by reason
Diagnosis	<ul style="list-style-type: none"> Did screening identify early stage lung cancers? Did participants who underwent invasive diagnostic procedures receive a diagnosis of lung cancer? Did participants experience adverse events (complications, unplanned hospital visits or death) due to diagnostic evaluation of screen-detected abnormalities? Did participants who had normal scans present with interval cancers? Did participants with abnormal scans suspicious for lung cancer undergo appropriate diagnostic procedures? Did screening impact access to lung DAP services? 	6.1: Proportion of participants attending lung DAP who received a definitive diagnosis, stratified by diagnostic result and screening round 6.2: Positive predictive value: Proportion of participants with abnormal screening LDCT scan results who were diagnosed with lung cancer after completing diagnostic evaluation, by screening round 6.3: Proportion of screen-detected lung cancers by stage, stratified by histological type, staging method and screening round 6.4: Proportion of participants who were diagnosed with lung cancer in the one year following a normal screening LDCT scan (interval cancers) 6.5: Proportion of surgical lung biopsies / resections with a non-malignant result 6.6: Proportion of participants experiencing complications within 90 days following diagnostic tests, stratified by complication type, diagnostic test type and lung cancer diagnosis 6.7: Proportion of participants who had unplanned hospital visits (emergency department visits or hospital admissions) within 90 days following diagnostic tests, stratified by lung cancer diagnosis 6.8: Proportion of participants who died within 90 days following an invasive diagnostic test, stratified by lung cancer diagnosis 6.9: Wait time from DAP referral received to first consult with thoracic surgeon (for screening participants and non-screening individuals before and during HRLCS pilot) 6.10: Wait time from DAP referral received to definitive diagnosis made (for screening participants and non-screening individuals before and during HRLCS pilot) 6.11: Proportion of participants with Lung-RADS™ 4a who received a 3 month follow-up LDCT scan

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Treatment	<ul style="list-style-type: none"> Did participants with screen-detected lung cancers receive treatment? Did participants experience adverse events (complications, unplanned hospital visits or death) due to treatment of screen-detected lung cancers? 	<p>7.1: Proportion of participants with screen-detected lung cancer who received lung cancer treatment, stratified by treatment type</p> <p>7.2: Proportion of participants experiencing complications within 90 days following lung cancer treatment, stratified by complication type and treatment type</p> <p>7.3: Proportion of participants who had an unplanned hospital visit within 90 days following lung cancer treatment, stratified by treatment type</p> <p>7.4: Proportion of participants who died within 90 days following lung cancer surgery</p>
Radiology Quality Assurance	-	<p>8.1: Number of chest CT scans read by radiologist within a calendar year, stratified by radiologist</p> <p>8.2: Lung Cancer Screening Radiology Report completion score, stratified by radiologist</p> <p>8.3: Proportion of Lung Cancer Screening Radiology Reports that were peer-reviewed during training, stratified by radiologist and peer review score</p> <p>8.4: Proportion of Lung Cancer Screening Radiology Reports that were peer-reviewed after training, stratified by radiologist and peer review score</p> <p>8.5: Proportion of Lung Cancer Screening Radiology Reports that were expert-reviewed during training, stratified by expert review score</p> <p>8.6: Proportion of LDCT scans performed outside of acceptable technical parameters</p>
Pilot Costs	<ul style="list-style-type: none"> What were the costs of preparing sites to implement screening? What were the direct operational costs of screening for the hospital? What were the costs of follow-up, diagnosis and treatment resulting from screening for the hospital? What were the estimated cost savings associated with screening? 	-
Ad-Hoc	-	<p>1.5: Call metrics (incoming/outgoing call volume, voicemails, purpose of call, call duration, calls lost, etc.)</p> <p>1.6: Wait time from triage completed to next available risk assessment appointment</p> <p>1.7: Wait time from receipt of physician referral to clerk calling individual to book risk assessment</p> <p>1.8: Proportion of individuals who have a baseline risk assessment booked on the same day as triage completed or physician referral received</p> <p>1.9: Number (and proportion) of incomplete / indeterminate primary care referral forms</p> <p>2.6: Duration of risk assessment</p> <p>2.7: Wait time from risk assessment completed to physician referral received (for self-presented individuals eligible for LDCT screening)</p> <p>3.6: Number of in-hospital smoking cessation sessions occurring per month (before and during HRLCS pilot)</p> <p>3.7: Wait-time for in-hospital smoking cessation sessions (before and during HRLCS pilot)</p> <p>3.8: Number of referrals to in-hospital smoking cessation programs (before and during HRLCS pilot)</p> <p>4.8: Duration of pre-scan meeting</p> <p>4.9: Proportion of participants with non-critical incidental findings whose referring provider was notified of the incidental finding</p> <p>8.7: Radiology Report Consistency (correlation between Lung-RADS™ and score on radiology report), stratified by radiologist</p>