دائـــــرة الـــصـــحـــة
DEPARTMENT OF HEALTH

DOH LUNG CANCER SCREENING SERVICE SPECIFICATIONS

December 2018

PUBLIC عـــام

Document Title:	DOH Lung Cancer Screening Service Specifications		
Document Ref. Number:	PH/NCD/LCSC/SR/0.9	Version:	0.9
Approval Date:	20/12/2018	Effective Date:	20/12/2018
Document Owner:	Cancer Prevention and Control Section, NCD, Public Health Division		
Applies to:	Licensed Healthcare Providers in the Emirate of Abu Dhabi participating in the DOH's Lung Cancer Screening Program		
Classification:	◉ Public		

1. Purpose
   1.1 This document sets the service specifications for DOH's Lung Cancer Screening Program in the Emirate of Abu Dhabi;
   1.2 It specifies the minimum service specifications to ensure that high-risk candidates screened for lung cancer receive quality and safe care and timely referral for diagnosis and/or treatment.

2. Scope
   These specifications apply to healthcare providers (facilities, professionals and laboratories) licensed by DOH in the Emirate of Abu Dhabi who are participating in DOH's Lung Cancer Screening Program and specify:
   2.1. Terms used in DOH Lung Cancer Screening Program;
   2.2. Recommended roles, responsibilities of and services offered by healthcare providers (facilities and professionals) participating in DOH's Lung Cancer Screening Program across the Emirate of Abu Dhabi;
   2.3. Lung Cancer Screening Case mix.

3. Definitions

	Category	Definition
3.1	Lung Cancer Screening	The process for the early detection of lung cancer. It includes recruitment of individuals at a high risk of developing lung cancer, counseling of these individuals and low-dose computer topography aided screening by a multidisciplinary team.
3.2	LDCT Scan	A procedure that uses low-dose computer topography (LDCT) radiation to make a series of very detailed pictures of areas inside the body in a spiral path. The procedure is also called a low-dose helical CT scan.
3.3	Case mix	High-risk candidates for lung cancer, except where exclusion criteria for LDCT apply.
3.4	Lung Cancer Screening Risk Assessment	An estimate of the likelihood of developing lung cancer in asymptomatic candidate based on age, total cumulative exposure to tobacco smoke, years since quitting tobacco and additional risk factor for lung cancer other than second hand smoking.
3.5	Additional risk factor lung cancer other than second hand smoking	Include cancer history, lung disease history as chronic obstructive pulmonary disease or pulmonary fibrosis, family history of lung cancer, radon exposure and occupational exposure of silica, cadmium, asbestos, arsenic, beryllium, chromium, diesel fumes, and nickel.
3.6	Pack-Year	A way to measure the amount a candidate has smoked over a specific period.
3.7	Informed and Shared Decision Making	A documented process of mutual decision-making involving eligible candidate and lung screening healthcare provider an before any decision is made to initiate lung cancer screening including the following elements: • Willingness to undergo follow-up diagnostic testing and treatment. • The importance of adherence to lung cancer screening schedule. • Lung cancer screening potential benefits (reduce the risk of dying from lung cancer). • Lung cancer screening potential limitations and harms (false-positive and false-negative results, over diagnosis, incidental findings and radiation exposure).

		• Adherence to tobacco cessation counseling and treatment
3.8	False-Positive Result	Positive screening with a completed negative work-up or follow-up of at least 12 months with no diagnosis of lung cancer.
3.9	False-Negative Result	Negative screening associated with diagnosis of lung cancer within 12 months of baseline examination.
3.10	Over Diagnosis	The detection of indolent lung cancer that would not have become clinically apparent.
3.11	Incidental Findings	Results that arise outside the original purpose of lung cancer early detection.
3.12	Multi-Disciplinary Team	A team responsible for individualized and evidence-based management of candidates with positive lung cancer screening results. It consists of radiologists, pulmonologists, thoracic surgeons, oncologists, pathologists, family physicians and nurses.
3.13	Tobacco Cessation Intervention	Tobacco cessation counseling and treatment for more than 10 minutes at PRIMARY CARE CLINCS visit including brief advice, set up quitting date, offer pharmacological agents treatment, offer tobacco cessation specialist appointment and enforce maintaining tobacco abstinence if former tobacco user.

4. General Duties of the Health care Providers

All licensed and eligible healthcare providers participating in DOH's Lung Cancer Screening Program must:

4.1. Submit data to DOH via e-Claims in accordance with the DOH Reporting of Health Statistics Policy and as set out in the DOH Data Standards and Procedures (found online at www.haad.ae/datadictionary);

4.2. Comply with relevant DOH Policies and Standards;

4.3. Comply with DOH's requests to inspect and audit records and cooperate with DOH authorized auditors as required by DOH; and

4.4. Comply with requirements for information technology (IT) and data management including sharing of screening/diagnosis and where applicable, pathology results, electronic patient records and disease management systems.

5. Lung Cancer Screening Program- Facilities Specifications

In order to be designated as DOH lung cancer screening center, the facility should obtain DOH approval prior to offering the services by completing the service provision form. (Refer to Appendix 3)

5.1. All DOH licensed healthcare providers (Facilities and Professionals) engaged in DOH lung cancer screening program must comply with general regulations governing health care facilities and specific regulations related to these standards (Refer to Appendix 1 & 2);
5.2. DOH designated Lung Cancer Screening Center should adhere to DoH Lung Cancer Screening Program performance indicators (Refer to Appendix 4);
5.3. A Lung Cancer Screening Center should assign a Program Coordinator/Director who will be accountable to:
5.3.1. Report screening and screening outcome data to DOH;
5.3.2. Notify screened candidates of their screening results within the expected timeframe;
5.3.3. Ensure the candidate's enrollment in tobacco cession program;
5.3.4. Assure clear and communicated process for the management of positive cases either within the same facility or in another facility approved by DOH to participate in the Lung Cancer Screening Program;
5.3.5. Maintain records for screening tests and outcomes;
5.3.6. Ensure that the candidate is provided with the right information regarding the screening, assessment, follow up care, and ensure that the candidate' informed consent form is obtained and documented;
5.3.7. Ensure program key performance indicators are met and records are kept for audits purposes;
5.3.8. Coordinate and organize CME training for the healthcare providers involved in screening program for quality assurance.

6. Case Mix-Eligibility Criteria and Recruitment

6.1. Inclusion/Eligibility Criteria:
6.1.1. High-risk candidates of lung cancer aged 55-75 years with:
6.1.1.1. 30 Pack-year history of smoking, and/or tobacco cessation <15 years. (Refer to Appendix 5 for calculation of pack-year tobacco use);
6.1.1.2. 20 Pack-year history of tobacco use, and/or tobacco cessation <15 years and one additional risk factor;
6.1.1.3. 20 Year history of water pipe (shisha) and/or dokha, medwakh and/or all other forms of smoked tobacco use.[1]
6.2. Recruitment-Eligible candidates for lung cancer screening might be recruited through one of the following:
6.2.1. Opportunistic recruitment;
6.2.2. Online subscription: booking a screening appointment is available at www.haad.ae/simplycheck.ae;

1. This category was not addressed in the international guidelines; it was add to be assessed in the pilot phase of the program, due to the popularity of this form of tobacco use among smokers in Emirate of Abu Dhabi.
2.4.8 The only approved and recommended screening tool for lung cancer is low dose computed topography CT scan (LDCT).

6.3. Exclusion Criteria-Potential reasons to exclude eligible candidates from screening may include the following:

6.3.1. Metallic implants or devices in the chest or back, such as pacemakers or Harrington fixation rods;

6.3.2. Personal history of lung cancer;

6.3.3. Requirement for home oxygen supplementation;

6.3.4. Unexplained weight loss of more than 7 kilograms in the 12 months prior to eligibility assessment;

6.3.5. Pneumonia or acute respiratory infection treated with antibiotics in the last 12 weeks;

6.3.6. Chest CT examination in the 12 months prior to eligibility assessment;

6.3.7. Patient is not a good candidate for surgical treatment.

7. DOH Lung Cancer Screening Pathway (Refer to Appendix 2)

Lung cancer screening center should follow the DOH Lung Cancer Screening Pathway:

7.1. Physician in lung cancer screening facility should obtain and document Informed consent from eligible candidate to participate in lung cancer screening program;

7.2. All eligible candidates enrolled in a screening program should receive smoking cessation interventions;

7.3. Tobacco cessation program physicians liaising with lung cancer screening centers should:

7.3.1. Collect data and complete the DOH E- Cancer Screening Form jointly. (Refer to Appendix 6);

7.3.2. Ensure the candidate was provided proper education and information regarding the screening benefits and limitation, assessment, follow up care, ensure that candidate' informed consent is obtained and documented;

7.4. Healthcare providers at the Lung Cancer Screening Center should:

7.4.1. Inform the candidate about the date and method of receiving screening results;

7.4.2. Report screening outcomes to DOH through the e-notification system;

7.5. In case of negative results, the candidate should:

7.5.1. Have the next lung cancer screening appointment scheduled as per the screening criteria;

7.5.2. Be encouraged to continue following up with the tobacco cessation clinic/center;

7.6. In case of positive results:

7.6.1. The screening results should be assessed and discussed by a multi-disciplinary team prior to referral of the candidate to a treatment facility. (Refer to Appendix 7 for the roles and responsibilities of the multidisciplinary team);

7.6.2. The candidate must be referred to a treatment facility;

7.6.3. The program coordinator must report confirmed cancer cases to DOH using the Cancer Case Notification Form of the Cancer Surveillance e-notification.

8. DOH Lung Cancer screening protocol

8.1. Screening centers should develop a documented protocol used for lung cancer screening to include image production, image reading, screening frequency, follow-up of scan results, and management of positive cases and communication of results;

8.2. The protocols may be reviewed and updated based on evidence-based best practices recommended by the National Comprehensive Cancer Network (NCCN), the American College of Radiology (ACR), or equivalent;

8.3. Double reading of screening LDCT is required:

8.3.1. LDCT should be interpreted by two independent radiologists;

8.3.2. In case of discordant opinions between two radiologists, either consensus or preferably arbitration using a third expert screening radiologist can be carried out.

8.4. Lung cancer imaging report must be- completed by radiologist, containing at least the following information:

8.4.1. Interpreting physicians' names;

8.4.2. Date of examination;

8.4.3. Patient identification;

8.4.4. Description of significant imaging lesions;

8.4.5. Final Assessment (Lung RADS);

8.4.6. Recommended next steps;

8.5. Final assessment report should be prepared/completed using Lung-RAD Assessment Categories or equivalent. (Refer to Appendix 8).

9. Screening & Tobacco Cessation

Screening should not be viewed as an alternative to tobacco cessation:

9.1. Candidates currently using tobacco should be informed of their continuing risk of developing lung cancer;

9.2. Candidates currently using tobacco that are willing to participate in lung cancer screening program should receive tobacco cessation intervention parallel to lung cancer screening;

9.3. Healthcare provides should increase attention to all forms of tobacco use including shisha, medwakh and others;

9.4. Healthcare providers are encouraged to use their best clinical judgment in assessing the risk of lung cancer for shisha and medwakh. (Refer to appendix 5, for pack-years approximation regarding other forms of tobacco use);

10. Cessation of Screening for Lung Cancer

Yearly lung cancer screening should cease when the candidate being screened:

10.1. Turns 76 years old; or

10.2. Has not smoked in 15 years; or

10.3. Develops a health problem that makes him or her unwilling or unable to have surgery if lung cancer is found.

11. Data Collection and Submission

Facilities participating in DOH Lung Cancer Screening Program should submit to DoH:

11.1. Via e-claims in accordance with the DOH Reporting of Health Statistics Policy and as set out in the DOH Data Standards and Procedures (www.DOH.ae/datadictionary);

11.2. Data on screening visits, outcomes within 2 weeks of the screening date, through the cancer screening form of the cancer surveillance e- notification system found on the DOH website at: http://www.DOH.ae/DOH/tabid/1084/Default.aspx;

11.3. Report all screen-detected cancers to DOH, through cancer case notification form, of the cancer surveillance e-notification, available from: https://bpmweb.DOH.ae/usermanagement/login.aspx.

12. Payment Mechanism

Eligibility for reimbursement under the health insurance scheme is as follows:

12.1. For Thiqa holders, reimbursement must be consistent with the DOH (previously HAAD) Standard for Thiqa Preventive List of Interventions available at www.haad.ae; and

12.2. For non-Thiqa holders, payment must be consistent with the individual's health insurance product/plan.

13. Enforcement and Sanctions

13.1. Healthcare providers and professionals participating in the DOH's (previously HAAD) Cancer Screening Program must comply with the:

13.1.1. Terms and requirements of this Standard;

13.1.2. DOH (Previously HAAD) Standard Provider Contract;

13.2. DOH may impose sanctions in relation to any breach of requirements under this standard in accordance with the [DOH (Previously HAAD) *Policy on Inspections, Complaints, Appeals and Sanctions*].

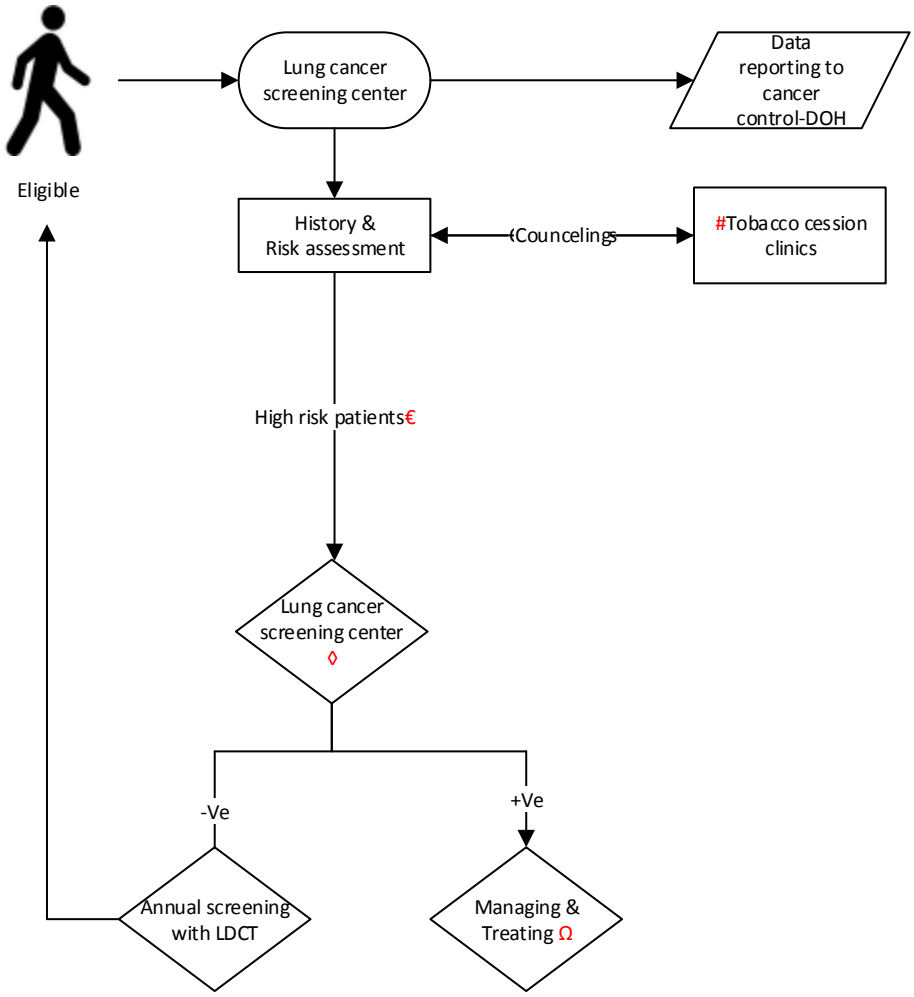
Appendix 1: Related Regulations

Written orders for lung cancer LDCT screenings must be appropriately documented in the beneficiary's medical record, and must contain the following information:

- Date of birth.
- Actual pack-year smoking history (number).
- Current smoking status, and for former smokers, the number of years since quitting smoking.
- A statement that the beneficiary is asymptomatic (no signs or symptoms of lung cancer).
- The Provider Identifier (license number) of the ordering practitioner.

Appendix 2: Care Pathway

Lung cancer screening care-pathway



Key

≠ Tobacco cession clinics: there is more than 12 clinic all over Abu Dhabi 3 regions, which help patients to quit smoking https://www.haad.ae/simplycheck/tabid/271/Default.aspx

€ High-risk patients: asymptomatic 55 to 74 years and have a smoking history equivalent to a pack a day for 30 years, and currently smoke or have quit within the past 15 years. To be a good candidate for screening, patients need to be in good health. They need to be able to have surgery and other treatments if lung cancer found.

◊ Lung cancer screening facility that have the right type of CT scan and that have a great deal of experience in low-dose CT scans for lung cancer screening. The facility should also have a team of specialists who can provide the appropriate care and follow-up of patients with abnormal results on the scans. And approved by DOH

Ω Managing & Treating positive cases: should follow NCCN guidelines

Appendix 3: Lung Cancer Screening Centre Application Form

Facility Information's	
Name of the Facility	Address/Street:
City/Town:	Pod. Box:

	Tick if appropriate
Follow Screening protocol according to DOH Standards or Lung Cancer Screening specifications	
We will submit e-claims	
We will submit data on screening visits and outcomes through cancer e-notification, found at: http://www.DOH.ae/DOH/tabid/871/Default.aspx	
We will comply with DOH standards for Lung Cancer Screening and Diagnosis, found at http://www.DOH.ae/DOH/tabid/820/Default.aspx	

Screening specified appointment slots	Time	Days of the week					
		Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Lung Cancer Screening Clinic	A.M.						
	P.M.						
LDCT Scanning	A.M.						
	P.M.						

	Name	Mobile	Office landline	E-mail
Designated Program Coordinator				
Facility Medical Director				
Facility Administrator				

Filled in by_____ Signature:
_____ Date:_____

Please fill in and return to Cancer Prevention and Control Section, Public Health and Research Division DOH, email: ldeen@doh.gov.ae

Appendix 4: Lung Cancer Screening Performance Indicators

Performance Indicators	Definition	Calculation	Acceptable level	Desirable level
Participation rate	Percentage of subjects who have a screening LDCT as a proportion of the population at risk	[Number of screened subjects / Population at risk]×100	>10%	>12%
Retention rate	Percentage of LDCT negative screened subjects who follow up screening	[Number of annual follow up screening examinations /Baseline screening examinations]×100	>50%	>70%
Abnormal recall rate	Proportion of screened subjects recalled for further assessment (clinical follow-up screening examinations)	[Number of clinical follow-up screening examinations / Baseline screening examinations] ×100	<25%	<20%
False positive rate	Percentage of positive screening without definitive diagnosis within 1 year	[Number of positive screening without definitive diagnosis within 1 year /True negative results] ×100 True negative results= initial negative results + of positive screening without definitive diagnosis	<27%	<16%
Lung cancer detection rate	Number of detected lung cancer cases per 1000 screening examinations	[Number of detected lung cancer cases (per 1-year period) / Total number of screening CT] ×1000	0.5% - 1%	
Stage 1 lung cancer rate	Percentage of lung cancer patients diagnosed with stage 1	[Number of stage 1 lung cancer detected / Total number of lung cancer detected] ×100	>65%	>80%
Incidental Findings rate	Percentage of Findings requiring follow-up for diseases other than lung cancer	[Number of detected non-lung cancer related abnormality / Total screened population ×100	>5%	>7.5%

Tobacco quit rates among participates in the program	Percentage screened persons who have quit tobacco after participation in Lung cancer screening program	[Number of tobacco quit rates among participates / Total tobacco users] ×100	>12%	>20%
Diagnostic interval	Maximum time between LDCT screening and receipt of result		≥ 90% within7 working days	

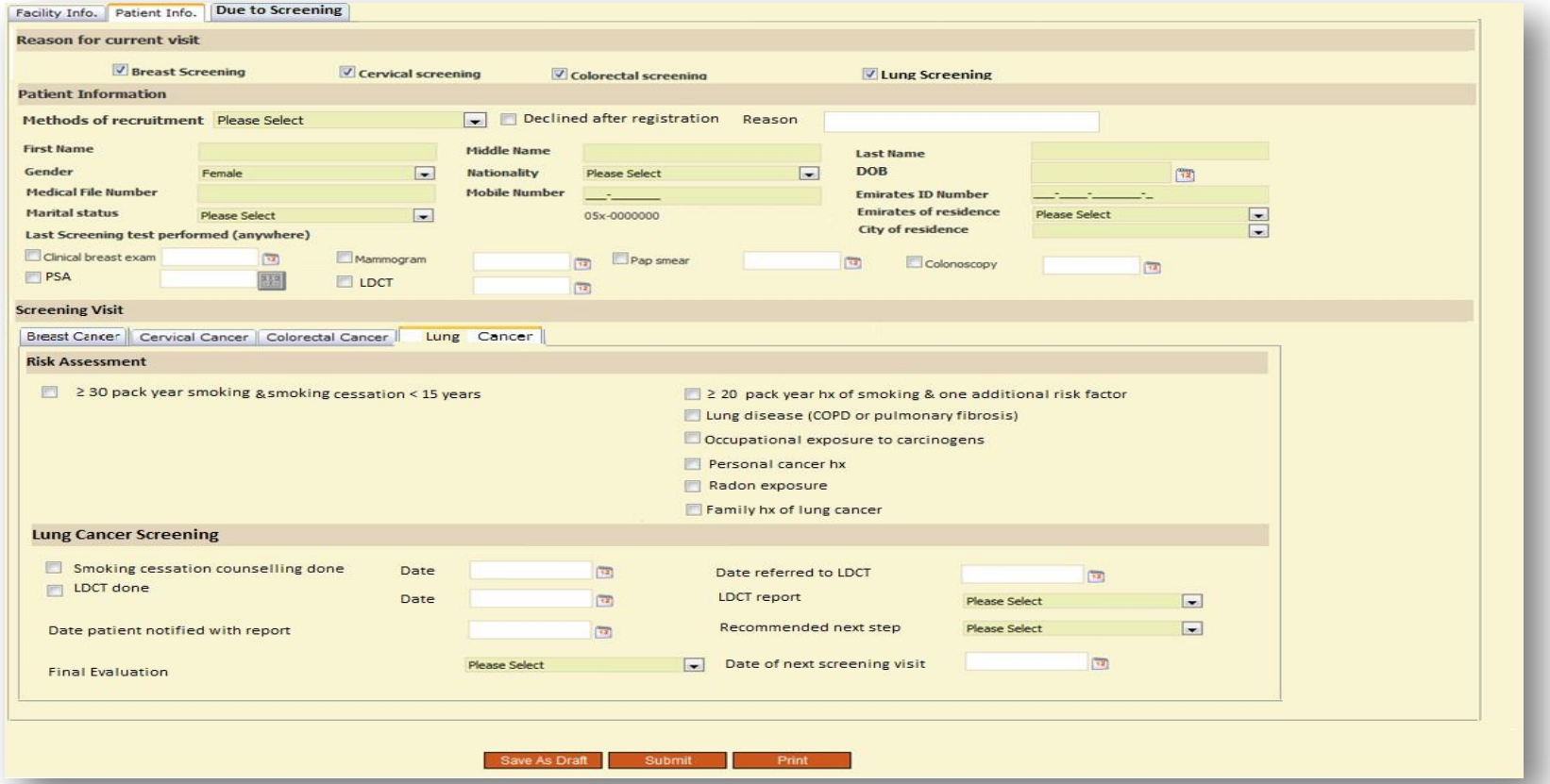
Appendix 5: Calculation of Pack-Year Tobacco Use

It is calculated by multiplying the number of packs of cigarettes smoked per day by the number of years the person has smoked.

- Number of pack-years = (packs smoked per day) × (years as a smoker) or
- Number of pack-years = (number of cigarettes smoked per day × number of years smoked)/20.

Appendix 6: DOH E- Cancer Screening Form

For information only, web-based "Cancer Screening Form" must be completed, available on http://www.haad.ae/DOH/tabid/1084/Default.aspx;



Appendix 7: Lung Cancer Screening Multi-disciplinary Team Composition

Lung cancer screening Multi-disciplinary Team Members and their Roles	
Radiologists	• Have documented training in diagnostic radiology and radiation safety. • Involvement in the supervision and interpretation of at least 300 chest computed tomography acquisitions in the past 3 years. • Direct supervision LDCT screening process. • Reporting the results of LDCT scans for lung cancer screening. • Take full responsibility for the quality of the LDCT report. • Ensure minim radiation exposure to screening participants.
Oncologists (Preferred Thoracic oncologist)	Participate in developing follow up and treatment plan.
Thoracic surgeons	• Experience in minimally invasive techniques, VATS procedures and VATS lobectomy with complete staging. Through lymph, Adenectomy. • Reporting on surgical outcomes.
Pathologists	• Expertise in cytopathology and pulmonary pathology to report increased number of cytologies, biopsies and other procedures that result from LDCT screening. Expertise includes lung cancer biomarker testing performed by immunohistochemistry. Double reporting of all lung cancer diagnosis. • Use current international standards (Royal College of Pathologists, UK or College of American Pathologists Cancer Protocols) for pathology reporting of cytology/small biopsy, resections, and standardized data collection for future development of the screening program, tumor registries, research, audit and clinical trials. http://www.cap.org/ShowProperty?nodePath=/UCMCon/Contribution%20Folders/WebContent/pdf/cp-lung-17protocol-4000.pdf) • Tissue triage, conservation and referral to molecular pathology for lung cancer predictive biomarker testing or other studies • Timely communication of results at multidisciplinary meetings, correlation of radiology and pathology results, determining appropriate and timely management for patients with lung cancer. • Quality Assurance - Participation in proficiency testing of lung cancer predictive biomarker tests, relevant subspecialty schemes and audit of reports.

Pulmonologists	• Evaluate lung nodules. • Perform non-surgical bronchoscopy, image guided biopsy, Endobronchial Ultrasound (EBUS) services.
Family physicians	• Recruiting for the program. • Explain to participants harms and benefits of lung screening. • Collect Data. • Reporting to DOH.
Nurses and support staff	Assist patients with coordination of their care within the continuum.

Appendix 8: Lung cancer screening RAD reporting

Lung-RADS™ Version 1.0 Assessment Categories April 28, 2014

Category Descriptor	Category Descriptor	Primary Category	Management
Incomplete	-	0	Additional lung cancer screening CT images and/or comparison to prior chest CT examinations is needed
Negative	No nodules and definitely benign nodules	1	Continue annual screening with LDCT in 12 months
Benign Appearance or Behavior	Nodules with a very low likelihood of becoming a clinically active cancer due to size or lack of growth	2	
Probably Benign	Probably benign finding(s) - short term follow up suggested; includes nodules with a low likelihood of becoming a clinically active cancer	3	6 month LDCT
4A	3 month LDCT; PET/CT may be used when there is a ≥ 8 mm solid component	Findings for which additional diagnostic testing and/or tissue sampling is recommended	Suspicious
4B		Chest CT with or without contrast, PET/CT and/or tissue sampling depending on the *probability of malignancy and comorbidities. PET/CT may be used when there is a ≥ 8 mm solid component.	
Significant - other		S	
Prior Lung Cancer		C	

9. Bibliography

National Comprehensive Cancer Network. Lung Cancer Screening Guideline, version 1.2015.

American College of Radiology. Lung CT Screening Reporting and Data System, Lung-RADS™ 2014.

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