# MONOGRAPH ON
# LUNG CANCER

LUNG CANCER REGISTRY DATA OF 2009 TO 2017

Clinical Research Department
Lung Center of the Philippines

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ORIGINAL ARTICLE

# MONOGRAPH ON LUNG CANCER
# LUNG CANCER REGISTRY DATA OF 2009 TO 2017

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## ABSTRACT

**Background.** Virtual inhaler education is increasingly being explored as Lung cancer is the second-most commonly diagnosed malignancy and is the leading cause of cancer-related deaths. Continuous advancement in diagnostic and treatment modalities aims to improve this trend.

**Objective.** To present the demographic and clinical profile, diagnosis, management, and in-hospital outcomes of lung cancer patients seen at the Lung Center of the Philippines between 2009 to 2017

**Methods.** This was a retrospective cohort review among all patients with lung cancer registered at the Lung Center of the Philippines from January 1, 2009, to December 31, 2017. The data were extracted from the medical records of lung cancer patients and recorded in the Lung Cancer Registry forms. The data recorded in the Lung Cancer Registry data collection forms were encoded using EPI INFO.

**Results.** A total of 3,969 lung cancer patients were included in the study. The majority were male (66.0%, n = 2,618), were aged 60 years and older (59.0%, n = 2,331), came from National Capital Region (45.2%), had a smoking history (63.2%, n = 2,507), were classified as Stage IV (66%), had non-small cell carcinoma (NSCLC) (89.3%, n = 3, 586), had a sub-type of adenocarcinoma (62.7%, n = 225), and underwent diagnostic and staging procedures (75.7%) during the year of first admission (supportive care 56.6%, surgery 17.8%, radiotherapy 5.7%, and chemotherapy 7.5%). Among the patients included in the study, 719 (18.2%) died in-hospital during their first admission. However, the mortality data among patients whose deaths may have occurred outside the hospital were not available.

**Conclusion.** In this cohort from 2009 to 2017, 3,969 patients with lung cancer were included, similar to the number of patients with lung cancer included in the previous 2000 to 2008 cohort. The majority were diagnosed in their late stage, received supportive therapy, and had a high rate of in-hospital mortality on admission.

**Keywords.** *Lung cancer, survival, adenocarcinoma*

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## INTRODUCTION

Lung cancer is the second-most commonly diagnosed malignancy in 2022, following breast cancer. It is also the leading cause of cancer-related mortality.[1] In the Philippines, 23,728 new cases and 20,953 deaths were recorded in the same year. Although notable advancements in the past decades have significantly improved the treatment landscape, the five-year prevalence of lung cancer across all ages was 29.3 per 100,000 population.[1] New cases of lung cancer continue to rise, especially in low-income countries, mainly due to limitations in resources.[2]

Lung cancer can be histologically classified into non-small cell (85% of cases) or small cell (15% of cases). Adenocarcinomas and squamous cell carcinomas comprise the majority of non-small cell cases. The discovery of novel biomarkers (such as EGFR mutations, ALK and ROS-1 rearrangements, BRAF mutations, MET exon 14 mutations, and PDL-1) has revolutionized the treatment of lung cancer and improved patients' survival. Stage I to IIIA non-small cell lung cancer can be treated with surgery and adjuvant chemotherapy. Unresectable stage III disease is usually treated with a multimodal approach (chemotherapy and radiotherapy followed by consolidation immunotherapy). Targeted therapy, immunotherapy, and chemotherapy remain the cornerstones of systemic therapy in metastatic disease.[2,3] Small cell lung cancer is classified into limited-disease or extensive-disease. The former is treated with surgery and concurrent chemoradiotherapy, while the latter is treated with chemoimmunotherapy.[4,5]

The Lung Center of the Philippines (LCP), a national specialty institution established in 1981, has provided high-quality health services and state-of-the-art facilities for the diagnosis and management of lung cancer since its inception. This monograph was conceptualized in the early 1990s by the Hospital Tumor Board, steered by then Director Calixto A. Zaldivar, and the Pulmonologist-Oncologist, Dr. Roberto Montevirgen.

The first version of the monograph covering 2000 to 2008 was spearheaded by Dr. Sullian Sy-Naval and Dr. Vincent M. Balanag, Jr. A total of 3,950 cases of lung cancer were recorded and treated in the institution. Most were males, and more than half were diagnosed after the 6th decade of life. Most (87%) were non-small cell carcinoma, predominantly adenocarcinoma, and were diagnosed at stage IV.6 Due to late diagnosis, the 3-5 year survival was 3% with a median survival of 121 days.[7]

The second version of the manuscript marks the advent of new diagnostic modalities (immunohistochemistry and biomarkers), surgical techniques, interventional pulmonology, and interventional radiology. Experimental approaches such as the use of stem cell therapy are also explored in this version.

Lung cancer should be diagnosed early to improve patients' survival. The National Lung Screening Trial (NLST) showed that annual screening with low-dose computed tomography (LDCT) in a high-risk population was associated with a 20% reduction in lung cancer-specific mortality, compared with conventional chest radiography.[8] The NELSON Trial showed a 24% reduction in lung cancer mortality.[9] The institution recently embarked on a lung cancer screening program, 'Screening for Early Lung Cancer and Detection and Treatment (SELCaDT)" in collaboration with the Department of Health. This program aims to identify and screen high-risk individuals, detect lung cancer early, and treat with the intent to cure (lcp.gov.ph), to improve lung cancer survival in cases seen at the LCP.[10]

**General objective:**
This monograph aimed to present the demographic and clinical profile, diagnosis, management, and in-hospital outcomes of lung cancer patients seen at the Lung Center of the Philippines between 2009 to 2017.

Specifically, it aimed to:

a) Describe the clinicodemographic profile of lung cancer patients between 2009 to 2017;

b) Describe the diagnostic and treatment modalities received by lung cancer patients between 2009 to 2017;

c) Describe the in-hospital outcome of lung cancer patients between 2009 to 2017.

## METHODOLOGY

**Study design and setting**
This was a retrospective cohort review of all patients with lung cancer registered at the Lung Center of the Philippines.

**Inclusion and exclusion criteria**
This research study included all eligible adult patients diagnosed with lung cancer confirmed histologically through tissue or cytologic analyses from January 1, 2009, to December 31, 2017. All admitted patients with a histopathologic diagnosis of lung cancer, including small cell carcinoma, non-small cell carcinoma, and subtypes, diagnosed through tissue or cytology from respiratory samples, were included. Patients with metastatic lung disease from non-lung primary, those with lung masses not subjected to diagnostic work-up, and those with incomplete information regarding imaging or staging procedures were excluded.

**Data collection**
Socio-demographic and clinical profiles, including medical, social, family history, histopathologic classification, tumor-related characteristics, and management, were extracted from the patient records and recorded. Date of symptom recognition, type and number of health care providers visited, date of visit, date of definitive diagnosis, and treatment were recorded using a structured questionnaire.

### Data Collection and Forms Used

The data were extracted from the medical records of lung cancer patients admitted at the Lung Center of the Philippines (LCP) from 2009 to 2017 and recorded in the Lung Cancer Registry forms. The data were collected using LCP Form No. 63-001 (Appendix 1) and LCP Form No. 63-003 (Appendix 3). For the first admission, data were recorded in Form No. 63-001 and Form No. 63-002 (Appendix 2). The data of the succeeding admission/s, if any, were recorded in Form No. 63-002 and Form No. 63-003.

### Data Encoding, Validation, and Cleaning

The data recorded in the Lung Cancer Registry data collection forms were encoded using the EPI INFO data entry program prepared by the LCP Department of Research and Development (renamed to Clinical Research Department in 2018).

Data were validated and cleaned to ensure the quality before analysis. To select records for validation, we did stratified random sampling of 364 patient ID numbers, with proportional allocation by year of admission. These patients' paper data collection forms were retrieved by the staff-in-charge and a biostatistician. The encoded data was compared with the patient information in the data collection forms. When missing data, inconsistencies, and issues on the plausibility of the data were found, the data were edited based on consultations with the data encoder, staff-in-charge, and the biostatistician.

### Data Analysis

Data were analyzed using the STATA 14 software. Frequency and percentage distribution were obtained for the qualitative data, while means and standard deviations were calculated for age, which was the only quantitative data in the study. We described the frequency and distribution of lung cancer cases according to age, sex, year of first hospital admission, place of residency, smoking status, comorbidities, alcohol intake, histology, and management during admission.

Survival analysis of the 2009-2017 cohort is still ongoing at the time of printing of this Monograph and will be reported in a future publication of the LCP Scientific Proceedings.

## RESULTS

A total of 3,969 lung cancer patients were included in the study. Most patients were males (66.0%, n = 2,618); this proportion was consistent across the time frame. Most cases were detected at age 60 years and older (58.7%, n = 2,331), followed by between 40 and 59 years (36.2%, n = 1,437). The number of cases of lung cancer had started to increase beginning at age 40 years, with the mean age recorded at 61.1 years old. Only approximately 4% of cases occurred before the age of 40 years (Tables A1 & A2). Most (76.4%, n = 3,032) patients were married at the time of first admission. There were more males diagnosed across all age categories. The proportions of those who were widowed and single were 12.5% and 8.1%, respectively. (Tables A3 & A4).

***Table A1.*** *Frequency and percentage distribution of incident cases according to patients' sex and year of first hospital admission.*

| Sex | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| Male | 295 (66.6) | 272 (64.8) | 305 (68.4) | 310 (67.4) | 282 (68.8) | 335 (67.4) | 380 (67.4) | 286 (64.3) | 153 (53.9) | 2,618 (66.0) |
| Female | 148 (33.4) | 148 (35.2) | 139 (31.2) | 148 (32.2) | 128 (31.2) | 162 (32.6) | 184 (32.6) | 157 (35.3) | 131 (46.1) | 1,345 (33.9) |
| No information | 0 (0.0) | 0 (0.0) | 2 (0.5) | 2 (0.4) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (0.5) | 0 (0.0) | 6 (0.2) |
| Total | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

***Table A2.*** *Frequency and percentage distribution of incident cases according to patients' age and year of first hospital admission.*

| Age | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| ≤ 39 | 29 (6.6) | 23 (5.5) | 16 (3.6) | 15 (3.3) | 21 (5.1) | 21 (4.2) | 18 (3.2) | 14 (3.2) | 12 (4.2) | 169 (4.3) |
| 40-59 | 175 (39.5) | 165 (39.3) | 168 (37.7) | 143 (31.1) | 157 (38.3) | 168 (33.8) | 196 (34.8) | 151 (33.9) | 114 (40.1) | 1,437 (36.2) |
| ≥ 60 | 236 (53.3) | 228 (54.3) | 261 (58.5) | 298 (64.8) | 228 (55.6) | 304 (61.2) | 346 (61.4) | 276 (62.0) | 154 (54.2) | 2,331 (58.7) |
| No information | 2 (0.5) | 0 (0.0) | 1 (0.2) | 2 (0.4) | 1 (0.2) | 1 (0.2) | 2 (0.4) | 2 (0.5) | 2 (0.7) | 13 (0.3) |
| Total | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

***Table A3.*** *Frequency and percentage distribution of incident cases according to patients' age and sex.*

| Sex | AGE GROUP | | | | |
|---|---|---|---|---|---|
| | ≤ 39 | 40-59 | ≥ 60 | No information | Total |
| Male | 99 (58.6) | 870 (60.5) | 1626 (69.8) | 10 (76.9) | 2,605 (65.6) |
| Female | 70 (41.4) | 564 (39.2) | 702 (30.1) | 3 (23.1) | 1,339 (33.7) |
| No information | 0 (0.0) | 3 (0.2) | 3 (0.1) | 0 (0.0) | 6 (0.2) |
| Total | 169 | 1,437 | 2,331 | 13 | 3,969 |

*Column percentage

***Table A4.*** *Frequency and percentage distribution of incident cases according to patients' civil status and year of first hospital admission.*

| Civil Status | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| Married | 336 (75.9) | 327 (77.9) | 334 (74.9) | 375 (81.5) | 322 (78.5) | 372 (74.9) | 415 (73.6) | 336 (75.5) | 215 (75.7) | 3,032 (76.4) |
| Single | 42 (9.5) | 32 (7.6) | 35 (7.9) | 34 (7.4) | 32 (7.8) | 35 (7.0) | 46 (8.2) | 37 (8.3) | 27 (9.5) | 320 (8.1) |
| Widowed | 57 (12.9) | 50 (11.9) | 57 (12.8) | 44 (9.6) | 49 (12.0) | 66 (13.3) | 79 (14.0) | 60 (13.5) | 32 (11.3) | 494 (12.5) |
| Separated | 3 (0.7) | 4 (1.0) | 12 (2.7) | 4 (0.9) | 4 (1.0) | 5 (1.0) | 10 (1.8) | 3 (0.7) | 3 (1.1) | 48 (1.2) |
| No information | 5 (1.1) | 7 (1.7) | 8 (1.8) | 3 (0.7) | 3 (0.7) | 19 (3.8) | 14 (2.5) | 9 (2.0) | 7 (2.5) | 75 (1.9) |
| Total | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

The National Capital Region (NCR) accounted for 45.3% of all patients who were admitted due to lung cancer from 2009 to 2017 (>40% every year). On the other hand, Regions III and IVA accounted for almost 40% of the total cases. During the year of first admission, 317 (8.0%) were unemployed. Among patients with recorded occupational data, skilled agricultural, forestry, and fishery work were the most frequent at 8.9%, followed by elementary occupations at 8.8% (Tables A5 & A6).

***Table A5.*** *Frequency and percentage distribution of incident cases according to permanent address (region) and year of first hospital admission.*

| Region | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **I – Ilocos** | 11 (2.5) | 9 (2.1) | 8 (1.8) | 11 (2.4) | 9 (2.2) | 13 (2.6) | 18 (3.2) | 8 (1.8) | 8 (2.8) | 95 (2.4) |
| **II – Cagayan Valley** | 8 (1.8) | 15 (3.6) | 13 (2.9) | 9 (2.0) | 8 (2.0) | 14 (2.8) | 9 (1.6) | 12 (2.7) | 3 (1.1) | 91 (2.3) |
| **III – Central Luzon** | 76 (17.2) | 82 (19.5) | 80 (17.9) | 91 (19.8) | 81 (19.8) | 100 (20.1) | 111 (19.7) | 87 (19.6) | 57 (20.1) | 765 (19.3) |
| **IVA – CaLaBaRZon** | 87 (19.6) | 86 (20.5) | 86 (19.3) | 88 (19.1) | 83 (20.2) | 107 (21.5) | 107 (19.0) | 80 (18.0) | 52 (18.3) | 776 (19.6) |
| **IVB – MiMaRoPa** | 7 (1.6) | 4 (1.0) | 3 (0.7) | 16 (3.5) | 7 (1.7) | 10 (2.0) | 7 (1.2) | 6 (1.4) | 6 (2.1) | 66 (1.7) |
| **V – Bicol** | 13 (2.9) | 10 (2.4) | 7 (1.6) | 10 (2.2) | 4 (1.0) | 15 (3.0) | 13 (2.3) | 16 (3.6) | 7 (2.5) | 95 (2.4) |
| **VI – Western Visayas** | 5 (1.1) | 3 (0.7) | 1 (0.2) | 5 (1.1) | 6 (1.5) | 6 (1.2) | 6 (1.1) | 1 (0.2) | 0 (0.0) | 33 (0.8) |
| **VII – Central Visayas** | 1 (0.2) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.2) | 1 (0.2) | 2 (0.4) | 0 (0.0) | 0 (0.0) | 5 (0.1) |
| **VIII – Eastern Visayas** | 8 (1.8) | 5 (1.2) | 11 (2.5) | 9 (2.0) | 5 (1.2) | 10 (2.0) | 4 (0.7) | 9 (2.0) | 2 (0.7) | 63 (1.6) |
| **IX – Zamboanga Peninsula** | 1 (0.2) | 3 (0.7) | 2 (0.5) | 1 (0.2) | 0 (0.0) | 2 (0.4) | 1 (0.2) | 0 (0.0) | 1 (0.4) | 11 (0.3) |
| **X – Northern Mindanao** | 1 (0.2) | 0 (0.0) | 0 (0.0) | 2 (0.4) | 1 (0.2) | 1 (0.2) | 3 (0.5) | 0 (0.0) | 0 (0.0) | 8 (0.2) |
| **XI – Davao** | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.2) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.0) |
| **XII – SOCCSK-SAR GEN** | 1 (0.2) | 2 (0.5) | 2 (0.50) | 3 (0.7) | 0 (0.0) | 1 (0.2) | 1 (0.2) | 0 (0.0) | 1 (0.4) | 11 (0.3) |
| **XIII – Caraga** | 0 (0.0) | 0 (0.0) | 1 (0.2) | 0 (0.0) | 1 (0.2) | 0 (0.0) | 1 (0.2) | 0 (0.0) | 0 (0.0) | 3 (0.1) |

| Region | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **NCR** | 209 (47.2) | 184 (43.8) | 210 (47.1) | 207 (45.0) | 188 (45.9) | 203 (40.9) | 255 (45.2) | 210 (47.2) | 130 (45.8) | 1,796 (45.3) |
| **CAR** | 0 (0.0) | 2 (0.5) | 2 (0.5) | 2 (0.4) | 1 (0.2) | 4 (0.8) | 4 (0.7) | 4 (0.9) | 2 (0.7) | 21 (0.5) |
| **BARMM** | 0 (0.0) | 2 (0.5) | 0 (0.0) | 0 (0.0) | 1 (0.2) | 0 (0.0) | 1 (0.2) | 0 (0.0) | 0 (0.0) | 4 (0.1) |
| **Cannot be determined** | 8 (1.8) | 9 (2.1) | 9 (2.0) | 2 (0.4) | 9 (2.2) | 6 (1.2) | 6 (1.1) | 7 (1.6) | 5 (1.8) | 61 (1.5) |
| **No information** | 7 (1.6) | 4 (1.0) | 11 (2.5) | 4 (0.9) | 5 (1.2) | 3 (0.6) | 15 (2.7) | 5 (1.1) | 10 (3.5) | 64 (1.6) |
| **Total** | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

***Table A6.*** *Frequency distribution of incident cases according to patients' occupation and year of first hospital admission.*

| Occupation | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Managers** | 22 (5.0) | 21 (5.0) | 22 (4.9) | 25 (5.4) | 30 (7.3) | 19 (3.8) | 22 (3.9) | 14 (3.2) | 9 (3.2) | 184 (4.6) |
| **Professionals** | 39 (8.8) | 17 (4.1) | 33 (7.4) | 26 (5.7) | 23 (5.6) | 28 (5.6) | 22 (3.9) | 18 (4.0) | 10 (3.5) | 216 (5.4) |
| **Technicians and associate professionals** | 17 (3.8) | 5 (1.2) | 23 (5.2) | 23 (5.0) | 12 (2.9) | 19 (3.8) | 19 (3.4) | 8 (1.8) | 8 (2.8) | 134 (3.4) |
| **Clerical support workers** | 11 (2.5) | 3 (0.7) | 11 (2.5) | 6 (1.3) | 7 (1.7) | 8 (1.6) | 8 (1.4) | 7 (1.6) | 5 (1.8) | 66 (1.7) |
| **Service and sales workers** | 26 (5.9) | 16 (3.8) | 37 (8.3) | 30 (6.5) | 26 (6.3) | 34 (6.8) | 28 (5.0) | 15 (3.4) | 8 (2.8) | 220 (5.5) |
| **Skilled agricultural, forestry, and fishery workers** | 57 (12. 9) | 38 (9.1) | 57 (12. 8) | 46 (10.0) | 26 (6.3) | 49 (9.9) | 47 (8.3) | 27 (6.1) | 5 (1.8) | 352 (8.9) |
| **Crafts and related trades workers** | 24 (5.4) | 15 (3.6) | 19 (4.3) | 26 (5.7) | 10 (2.4) | 13 (2.6) | 19 (3.4) | 13 (2.9) | 10 (3.5) | 149 (3.8) |

| Occupation | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Plant and machine operators and assemblers** | 13 (2.9) | 14 (3.3) | 19 (4.3) | 23 (5.0) | 14 (3.4) | 14 (2.8) | 12 (2.1) | 7 (1.6) | 5 (1.8) | 121 (3.1) |
| **Elementary occupations** | 43 (9.7) | 29 (6.9) | 52 (11.7) | 47 (10.2) | 37 (9.0) | 41 (8.3) | 58 (10.3) | 28 (6.3) | 15 (5.3) | 350 (8.8) |
| **Armed Forces occupations** | 3 (0.7) | 2 (0.5) | 5 (1.1) | 2 (0.4) | 1 (0.2) | 2 (0.4) | 2 (0.4) | 0 (0.0) | 0 (0.0) | 17 (0.4) |
| **Unemployed** | 102 (23.0) | 134 (31.9) | 44 (9.9) | 11 (2.4) | 23 (5.6) | 1 (0.2) | 0 (0.0) | 2 (0.5) | 0 (0.0) | 317 (8.0) |
| **Cannot be determined** | 70 (15.8) | 68 (16.2) | 63 (14.1) | 68 (14.8) | 14 (3.4) | 21 (4.2) | 18 (3.2) | 12 (2.7) | 5 (1.8) | 339 (8.5) |
| **No information** | 16 (3.6) | 58 (13.8) | 61 (13.7) | 127 (27.6) | 187 (45.6) | 248 (49.9) | 309 (54.8) | 294 (66.1) | 204 (71.8) | 1,504 (37.9) |
| **Total** | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |
| ***Collected information on occupation was grouped according to the 2012 Philippine Standard Occupational Classification (PSOC 2012).*** | | | | | | | | | | |

*Column percentage

**B. Medical, Social, and Family History**

Most patients reported a smoking history (63.2%, n = 2,507), with only 33.5% (n = 1,330) reporting having never smoked (Table B1). In terms of alcohol intake status, 63.1% (n = 2,503) were non-alcoholic at the time of first admission, while the proportions of those who were currently and previously alcoholic were 9.1% (n = 362) and 11.2% (n = 443), respectively. Data on alcohol intake were not available for 16.7% (Table B2). Of the population, 1,176 (22.3%) had previous lung diseases, including PTB (11.8%), COPD (6.4%), asthma (3.8%), and pneumonia or other lung diseases (0.3%). A medical history of hypertension was present in 34.1%. No known illnesses were reported for 34.1% (Table B3).

Regarding family history, 23.0% reported hypertension, 16.5% reported malignancy, 12.1% reported diabetes, 8.3% reported asthma, 4.9% reported PTB, 4.9% reported cardiac disease, while 18.7% reported no known illness (Table B4).

***Table B1.*** *Frequency and percentage distribution of incident cases according to patients' smoking status and year of first hospital admission.*

| SMOKING STATUS | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Current Smoker** | 227 (51.2) | 215 (51.2) | 204 (45.7) | 164 (35.7) | 101 (24.6) | 130 (26.2) | 110 (19.5) | 59 (13.3) | 32 (11.3) | 1,242 (31.3) |
| **Former Smoker** | 65 (14.7) | 52 (12.4) | 84 (18.8) | 125 (27.2) | 149 (36.3) | 198 (39.8) | 264 (46.8) | 216 (48.5) | 112 (39.4) | 1,265 (31.9) |

| SMOKING YEAR OF FIRST ADMISSION STATUS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Never Smoker** | 123 (27.8) | 142 (33.8) | 139 (31.2) | 144 (31.3) | 136 (33.2) | 163 (32.8) | 184 (32.6) | 161 (36.2) | 138 (48.6) | 1,330 (33.5) |
| **No Information** | 28 (6.3) | 11 (2.6) | 19 (4.3) | 27 (5.9) | 24 (5.9) | 6 (1.2) | 6 (1.1) | 9 (2.0) | 2 (0.7) | 132 (3.3) |
| **Total** | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

***Table B2.*** *Frequency and percentage distribution of incident cases according to patients' alcohol intake and year of first hospital admission.*

| Alcohol Intake Status | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Alcoholic** | 70 (15.8) | 91 (21.7) | 61 (13.7) | 47 (10.2) | 27 (6.6) | 18 (3.6) | 20 (3.6) | 19 (4.3) | 9 (3.2) | 362 (9.1) |
| **Previous Alcoholic** | 30 (6.8) | 36 (8.6) | 41 (9.2) | 56 (12.2) | 60 (14.6) | 63 (12.7) | 88 (15.6) | 47 (10.6) | 22 (7.8) | 443 (11.2) |
| **Non-alcoholic** | 230 (51.9) | 219 (52.1) | 205 (46.0) | 191 (41.5) | 220 (53.7) | 382 (76.9) | 442 (78.4) | 369 (82.9) | 245 (86.3) | 2,503 (63.1) |
| **No Information** | 113 (25.5) | 74 (17.6) | 139 (31.2) | 166 (36.1) | 103 (25.1) | 34 (6.8) | 14 (2.5) | 10 (2.3) | 8 (2.8) | 661 (16.7) |
| **Total** | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

***Table B3.*** *Frequency distribution of co-existing illnesses among lung cancer patients during their first hospital admission.*

| Co-morbidities | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **COPD** | 42 (6.8) | 47 (8.2) | 54 (8.7) | 55 (8.1) | 22 (4.3) | 37 (5.7) | 37 (5.1) | 32 (5.9) | 14 (3.9) | 340 (6.4) |
| **PTB** | 127 (20.5) | 134 (23.5) | 142 (22. 8) | 99 (14.5) | 39 (7.6) | 38 (5.9) | 20 (2.8) | 11 (2.0) | 14 (3.9) | 624 (11.8) |
| **Asthma** | 20 (3.2) | 20 (3.5) | 18 (2.9) | 14 (2.1) | 22 (4.3) | 36 (5.6) | 32 (4.4) | 19 (3.5) | 17 (4.7) | 198 (3.8) |
| **Allergy** | 19 (3.1) | 8 (1.4) | 19 (3.0) | 16 (2.3) | 15 (2.9) | 20 (3.1) | 24 (3.3) | 20 (3.7) | 8 (2.2) | 149 (2.8) |
| **Diabetes** | 64 (10.3) | 47 (8.2) | 61 (9.8) | 83 (12.2) | 66 (12.9) | 77 (11.9) | 88 (12.2) | 74 (13.7) | 52 (14.4) | 612 (11.6) |
| **Hypertension** | 132 (21.3) | 108 (18.9) | 141 (22. 6) | 161 (23.6) | 157 (30.7) | 189 (29.3) | 223 (30.8) | 142 (26.2) | 102 (28.3) | 1355 (25.7) |

| Co-morbidities | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Cardiac Diseases** | 38 (6.1) | 16 (2.8) | 30 (4.8) | 42 (6.2) | 14 (2.7) | 28 (4.3) | 32 (4.4) | 21 (3.9) | 18 (5.0) | 240 (4.6) |
| **Other malignancy** | 2 (0.0) | 5 (0.9) | 2 (0.3) | 9 (1.3) | 4 (0.8) | 12 (1.9) | 11 (1.5) | 11 (2.0) | 5 (1.4) | 61 (1.2) |
| **Pneumonia or other lung diseases** | 1 (0.0) | 8 (1.4) | 0 | 3 (0.4) | 1 (0.2) | 0 | 0 | 1 (0.2) | 0 | 14 (0.3) |
| **Anemia** | 0 | 0 | 0 | 1 (0.2) | 0 | 0 | 1 (0.1) | 0 | 0 | 2 (0.0) |
| **Bleeding Tendencies** | 0 | 0 | 0 | 0 | 1 (0.2) | 0 | 0 | 0 | 0 | 1 (0.0) |
| **Others** | 22 (3.5) | 33 (5.8) | 16 (2.6) | 14 (2.1) | 5 (1.0) | 17 (2.6) | 23 (3.2) | 14 (2.6) | 12 (3.3) | 156 (3.0) |
| **No Illness** | 113 (18.2) | 128 (22.4) | 115 (18. 4) | 143 (21.0) | 157 (30.7) | 181 (28.1) | 221 (30.6) | 183 (33.8) | 111 (30.8) | 1352 (25.6) |
| **No Information** | 41 (6.6) | 17 (3.0) | 26 (4.2) | 42 (6.2) | 9 (1.8) | 10 (1.6) | 11 (1.5) | 13 (2.4) | 7 (1.9) | 176 (3.3) |
| **Column total** | 621 | 571 | 624 | 682 | 512 | 645 | 723 | 541 | 360 | 5280 |

*Column percentage

***Table B4.*** *Frequency distribution of medical conditions in the patients' family history according to year of first hospital admission.*

| Medical Conditions | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **COPD** | 0 (0.0) | 6 (1.1) | 2 (0.4) | 1 (0.2) | 0 | 14 (1.9) | 9 (1.0) | 7 (1.0) | 5 (1.3) | 44 (0.8) |
| **PTB** | 45 (8.3) | 63 (11.4) | 51 (8.9) | 31 (5.5) | 24 (4.4) | 19 (2.6) | 20 (2.3) | 8 (1.2) | 8 (2.1) | 269 (4.9) |
| **Asthma** | 35 (6.5) | 38 (6.9) | 49 (8.6) | 38 (6.7) | 55 (10.0) | 78 (10.7) | 71 (8.2) | 61 (9.1) | 26 (6.7) | 451 (8.3) |
| **Allergy** | 0 | 2 (0.4) | 0 | 3 (0.5) | 7 (1.3) | 12 (1.6) | 8 (0.9) | 7 (1.0) | 3 (0.8) | 42 (0.8) |
| **Diabetes** | 57 (10.5) | 61 (11.0) | 52 (9.1) | 47 (8.3) | 66 (12.0) | 115 (15.8) | 130 (15.0) | 85 (12.7) | 47 (12.1) | 660 (12.1) |

| Medical Conditions | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Hypertension** | 94 (17.3) | 91 (16.4) | 115 (20.1) | 77 (13.7) | 138 (25.0) | 201 (27.5) | 264 (30.5) | 170 (25.3) | 101 (25.9) | 1251 (23.0) |
| **Cardiac Diseases** | 15 (2.8) | 19 (3.4) | 12 (2.1) | 10 (1.8) | 21 (3.8) | 54 (7.4) | 49 (5.7) | 62 (9.2) | 22 (5.6) | 264 (4.9) |
| **Other malignancy** | 72 (13.3) | 75 (13.5) | 93 (16.3) | 95 (16.8) | 101 (18.3) | 85 (11.6) | 158 (18.2) | 134 (20.0) | 84 (21.5) | 897 (16.5) |
| **Pneumonia or other lung diseases** | 1 (0.2) | 2 (0.4) | 1 (0.2) | 0 | 1 (0.2) | 2 (0.3) | 2 (0.2) | 1 (0.2) | 1 (0.3) | 11 (0.2) |
| **Anemia** | 1 (0.2) | 1 (0.2) | 0 | 0 | 3 (0.5) | 0 | 2 (0.2) | 2 (0.3) | 1 (0.3) | 10 (0.2) |
| **Bleeding Tendencies** | 0 | 0 | 0 | 0 | 0 (0.0) | 2 (0.3) | 1 (0.1) | 0 | 0 | 3 (0.1) |
| **Others** | 8 (1.5) | 11 (2.0) | 4 (0.7) | 4 (0.7) | 9 (1.6) | 12 (1.6) | 9 (1.0) | 6 (0.9) | 3 (0.8) | 66 (1.2) |
| **No Illness** | 152 (28.0) | 141 (26.0) | 128 (22.4) | 144 (25.5) | 105 (19.0) | 92 (12.6) | 94 (10.9) | 91 (13.6) | 69 (17.7) | 1016 (18.7) |
| **No Information** | 62 (11.4) | 44 (8.1) | 65 (11.4) | 114 (20.2) | 22 (4.0) | 44 (6.0) | 49 (5.7) | 37 (5.5) | 20 (5.1) | 457 (8.4) |
| | 542 | 554 | 572 | 564 | 552 | 730 | 866 | 671 | 390 | 5441 |

*Column percentage

**C. Clinical Information on Admission**

Most (89.3%, n = 3,546) patients had non-small cell carcinoma (NSCLC) while 8.1% (n = 322) had small cell carcinoma. Among the patients with NSCLC, adenocarcinoma was the most dominant subtype (62.7%, n = 225), followed by squamous cell carcinoma (56.1%, n = 565) (Table C1).

***Table C1.*** *Frequency and percentage distribution of incident cases according to histological classification of lung cancer and year of first hospital admission.*

| Histopathology | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Non-small cell carcinoma** | 412 (93.0) | 374 (89.1) | 402 (90.1) | 403 (87.6) | 358 (87.6) | 427 (85.9) | 499 (88.5) | 394 (88.5) | 277 (97.5) | 3,546 (89.3) |
| **Adenocarcinoma** | 273 (61.6) | 263 (62.6) | 266 (59.6) | 232 (50.4) | 222 (54.2) | 236 (47.5) | 272 (48.2) | 219 (49.2) | 242 (85.2) | 2,225 (56.1) |
| **Squamous** | 66 (14.9) | 57 (13.6) | 51 (11.4) | 64 (13.9) | 72 (17.6) | 91 (18.3) | 104 (18.4) | 58 (13.0) | 2 (0.7) | 565 (14.2) |
| **Bronchoalveolar** | 5 (1.1) | 1 (0.2) | 5 (1.1) | 2 (0.4) | 0 | 0 | 0 | 3 (0.7) | 0 | 16 (0.4) |

| Histopathology | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Large Cell** | 2 (0.5) | 3 (0.7) | 1 (0.2) | 2 (0.4) | 1 (0.2) | 1 (0.2) | 1 (0.2) | 1 (0.2) | 0 | 12 (0.3) |
| **Adenosquamous** | 0 | 0 | 0 | 0 | 0 | 3 (0.6) | 2 (0.4) | 0 | 0 | 5 (0.1) |
| **Others** | 17 (3.8) | 6 (1.4) | 9 (2.0) | 3 (0.7) | 3 (0.7) | 10 (2.0) | 15 (2.7) | 6 (1.4) | 2 (0.7) | 71 (1.8) |
| **Unspecified** | 49 (11.1) | 44 (10.5) | 70 (15.7) | 100 (21.7) | 60 (14.6) | 86 (17.3) | 105 (18.6) | 107 (24.0) | 31 (10.9) | 652 (16.4) |
| **Small Cell** | 27 (6.1) | 43 (10.2) | 43 (9.6) | 42 (9.1) | 36 (8.8) | 46 (9.3) | 43 (7.6) | 41 (9.2) | 1 (0.4) | 322 (8.1) |
| **Others (malignant cell and unspecified)** | 4 (0.9) | 3 (0.7) | 1 (0.2) | 15 (3.3) | 16 (3.9) | 24 (4.8) | 22 (3.9) | 10 (2.3) | 6 (2.1) | 101 (2.5) |
| **Total** | 443 | 420 | 446 | 460 | 410 | 497 | 564 | 445 | 284 | 3,969 |

*Column percentage

***Table C2.*** *Frequency and percentage distribution of incident cases according to lung cancer stage and year of first hospital admission.*

| Histo-pathology | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Non-small Cell Carcinoma** | | | | | | | | | | |
| **IA** | 5 (1.1) | 5 (1.2) | 13 (2.9) | 6 (1.3) | 8 (2.0) | 3 (0.6) | 4 (0.7) | 4 (0.9) | 5 (1.8) | 53 (1.3) |
| **IB** | 39 (8.8) | 23 (5.5) | 28 (6.3) | 13 (2.8) | 10 (2.4) | 9 (1.8) | 14 (2.5) | 11 (2.5) | 5 (1.8) | 152 (3.8) |
| **IIA** | 5 (1.1) | 4 (1.0) | 14 (3.1) | 22 (4.8) | 9 (2.2) | 8 (1.6) | 9 (1.6) | 13 (2.9) | 3 (1.1) | 87 (2.2) |
| **IIB** | 21 (4.8) | 18 (4.3) | 10 (2.2) | 18 (3.9) | 29 (7.1) | 29 (5.8) | 25 (4.5) | 22 (5.0) | 7 (2.5) | 179 (4.5) |
| **IIIA** | 25 (5.7) | 17 (4.0) | 34 (7.6) | 28 (6.1) | 16 (3.9) | 39 (7.8) | 33 (5.9) | 28 (6.3) | 17 (6.1) | 237 (6.0) |
| **IIIB** | 15 (3.4) | 14 (3.3) | 11 (2.5) | 13 (2.8) | 31 (7.6) | 35 (7.0) | 35 (6.2) | 29 (6.6) | 21 (7.5) | 204 (5.1) |
| **IVA** | 223 (50.5) | 208 (49.4) | 223 (50.0) | 203 (44.0) | 181 (44.2) | 205 (41.0) | 244 (43.5) | 151 (34.1) | 139 (49.5) | 1,777 (44.8) |
| **IVB** | 78 (17.7) | 86 (20.4) | 69 (15.5) | 99 (21.5) | 73 (17.8) | 99 (19.8) | 130 (23.2) | 131 (29.6) | 74 (26.3) | 839 (21.2) |
| **Not known** | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (0.4) | 1 (0.2) | 1 (0.2) | 2 (0.4) | 3 (0.7) | 3 (1.1) | 12 (0.3) |
| **Subtotal** | 411 | 375 | 402 | 404 | 358 | 428 | 496 | 392 | 274 | 3,540 |

| Histo-pathology | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
| **Non-small Cell Carcinoma** | | | | | | | | | | |
| **Small Cell Carcinoma** | | | | | | | | | | |
| **Limited** | 7 (1.6) | 13 (3.1) | 9 (2.0) | 15 (3.3) | 15 (3.7) | 21 (4.2) | 16 (2.9) | 15 (3.4) | 1 (0.4) | 112 (2.8) |
| **Extensive** | 20 (4.5) | 30 (7.1) | 34 (7.6) | 25 (5.4) | 17 (4.2) | 25 (5.0) | 26 (4.6) | 25 (5.6) | 0 (0.0) | 202 (5.1) |
| **Not Known** | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (0.4) | 4 (1.0) | 2 (0.4) | 1 (0.2) | 1 (0.2) | 0 (0.0) | 10 (0.3) |
| **Subtotal** | 27 | 43 | 43 | 42 | 36 | 48 | 43 | 41 | 1 | 324 |
| **Malignant and Unspecified Cell Type** | | | | | | | | | | |
| **Cannot be staged** | 4 (0.9) | 3 (0.7) | 1 (0.2) | 15 (3.3) | 16 (3.9) | 24 (4.8) | 22 (3.9) | 10 (2.3) | 6 (2.1) | 101 (2.6) |
| **Grand Total** | 442 | 421 | 446 | 461 | 410 | 500 | 561 | 443 | 281 | 3,965 |

*Column percentage

**D. Histopathologic Classification**

The percentage of men across all histological classifications was higher compared with women (Table D1). Most of those with NSCLC were males (63.4%, n = 2247). Adenocarcinoma was the most common histology in both males (54.8%, n = 1,220) and females (45.1%, n = 1,003) (Table D2).

***Table D1.*** *Frequency and percentage distribution of incident cases according to sex and histological classification of lung cancer.*

| HISTOPATHOLOGY | | | | |
|---|---|---|---|---|
| **Sex** | **Non-small cell carcinoma** | **Small cell carcinoma** | **Malignant cell and unspecified cell type** | **Total** |
| **Male** | 2,247 (63.4) | 292 (90.7) | 79 (78.2) | 2,618 (66.0) |
| **Female** | 1,295 (36.5) | 28 (8.7) | 22 (21.8) | 1,345 (33.9) |
| **No information** | 4 (0.1) | 2 (0.6) | 0 | 6 (0.2) |
| **Total** | 3,546 | 322 | 101 | 3,969 |

*Column percentage

***Table D2.*** *Frequency and percentage distribution of non-small cell lung cancer cases according to sex and cell type.*

| NON-SMALL CELL LUNG CANCER | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sex** | **Adeno-carcinoma** | **Squamous** | **Broncho-alveolar** | **Large Cell** | **Adeno-squamous** | **Others unspecified** | Total |
| **Male** | 1,220 (54.8) | 476 (84.3) | 7 (43.8) | 10 (83.3) | 4 (80.0) | 530 (73.3) | 2,247 (63.4) |
| **Female** | 1,003 (45.1) | 87 (15.4) | 9 (56.3) | 2 (16.7) | 1 (20.0) | 193 (26.7) | 1,295 (36.5) |
| **No information** | 2 (0.1) | 2 (0.4) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 4 (0.11) |
| **Total** | 2,225 | 565 | 16 | 12 | 5 | 723 | 3,546 |

*Column percentage

**E. Medical Management**

Most (46.2%) underwent diagnostic and staging procedures during the year of first admission. Supportive care was received by 34.6% of patients, surgery by 10.9%, radiotherapy by 3.5%, and chemotherapy by 4.6% (Table E1). Diagnostic and supportive management were the most frequently received type of management of cases across all histological classifications (Table E2).

***Table E1.*** *Frequency distribution of management options availed on patients' first admission.*

| **Management** | YEAR OF FIRST ADMISSION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | Total |
| **Diagnostic** | 260 (37.2) | 263 (42.4) | 262 (45.6) | 283 (48.9) | 357 (48.4) | 442 (49.3) | 490 (48.1) | 385 (45.8) | 266 (49.4) | 3,008 (46.2) |
| **Supportive** | 145 (20.7) | 118 (19.0) | 128 (22.3) | 201 (34.7) | 279 (37.8) | 371 (41.4) | 435 (42.7) | 349 (41.6) | 227 (42.1) | 2,253 (34.6) |
| **Surgery** | 236 (33.8) | 210 (33.8) | 125 (21.7) | 30 (5.2) | 33 (4.5) | 19 (2.1) | 14 (1.4) | 29 (3.5) | 12 (2.2) | 708 (10.9) |
| **Radiotherapy** | 21 (3.0) | 10 (1.6) | 35 (6.1) | 35 (6.0) | 27 (3.7) | 21 (2.3) | 28 (2.8) | 37 (4.4) | 15 (2.8) | 229 (3.5) |
| **Chemotherapy** | 37 (5.3) | 20 (3.2) | 22 (3.8) | 28 (4.8) | 41 (5.6) | 43 (4.8) | 51 (5.0) | 40 (4.8) | 19 (3.5) | 301 (4.6) |
| **Dendritic Cell Vaccine** | 0 | 0 | 3 (0.5) | 2 (0.3) | 1 (0.1) | 1 (0.1) | 0 | 0 | 0 | 7 (0.1) |

**Study population: 3,969 cases**

*Column percentage

***Table E2.*** *Frequency distribution of management options availed according to histological classification of lung cancer.*

| Management* | HISTOLOGY | | | |
|---|---|---|---|---|
| | Non-small cell carcinoma | Small cell carcinoma | Malignant Cell unspecified cell type | Total |
| Diagnostic | 2,686 (46.0) | 233 (46.3) | 89 (55.6) | 3,008 (46.2) |
| Supportive | 2,041(34.9) | 152 (30.2) | 60 (37.5) | 2,253 (34.6) |
| Surgery | 674 (11.5) | 31 (6.2) | 3 (1.9) | 708 (10.9) |
| Radiotherapy | 193 (3.3) | 31 (6.2) | 5 (3.1) | 229 (3.5) |
| Chemotherapy | 243 (4.2) | 55 (10.9) | 3 (1.9) | 301 (4.6) |
| Dendritic Cell Vaccine Therapy | 6 (0.1) | 1 (0.2) | 0 | 7 (0.1) |
| Column total | 5,843 | 503 | 160 | 6,506 |

*Participants may undergo multiple procedures, Column percentage

***Table E3.*** *Frequency distribution of incident cases according to lung cancer stage and management options availed on admission.*

| Stage Management | Diagnostic procedure | Supportive care | Surgery | Radiotherapy | Chemotherapy | Stem cell (immuno-therapy) |
|---|---|---|---|---|---|---|
| **Non-small cell carcinoma** | | | | | | |
| **IA** | 40 (1.3) | 30 | 29 | 1 | 1 | 0 |
| **IB** | 130 (4.3) | 55 | 44 | 3 | 1 | 0 |
| **IIA** | 77 | 37 | 27 | 0 | 2 | 0 |
| **IIB** | 126 | 61 | 34 | 4 | 7 | 0 |
| **IIIA** | 179 | 88 | 46 | 9 | 27 | 0 |
| **IIIB** | 154 | 115 | 17 | 16 | 23 | 0 |
| **IVA** | 1,308 | 1060 | 387 | 51 | 84 | 1 (7.1) |
| **IVB** | 615 | 561 | 81 | 102 | 79 | 4 (28.6) |
| **Not known** | 53 | 29 | 7 | 6 | 16 | 1 (7.1) |
| **Subtotal** | 2,682 | 2036 | 672 | 192 | 240 | 6 (42.9) |
| **Small cell carcinoma** | | | | | | |
| **Limited** | 95 | 48 | 3 | 12 | 14 | 1 (7.1) |
| **Extensive** | 130 | 98 | 28 | 19 | 41 (6.9) | 0 |
| **Not Known** | 8 | 6 | 0 | 0 | 0 | 0 |
| **Subtotal** | 233 | 152 | 31 | 31 | 55 (9.3) | 1 (7.1) |
| **Malignant cell and unspecified cell types** | | | | | | |
| **Cannot be staged** | 89 | 60 | 3 | 5 | 3 (0.5) | 0 |

*Column percentage

**F. In-hospital mortality**

Among the patients included in the study, 719 (18.2%) died in-hospital during their first admission. However, the mortality data among patients whose deaths may have occurred outside the hospital were not available.

## DISCUSSION

This cohort from 2009 to 2017 included 3,969 patients with lung cancer, similar to the population in the previous monograph (n = 3,950). Most were males (66.0%), and this proportion was consistent through the years (Table A1). Being male was a risk factor for worse survival based on the analysis of the cohort between 2000 and 2008.7 Notably, there was a steady increase in the proportion of females diagnosed with lung cancer in the latter years, approaching 46.1% in 2017. The proportion of females with lung cancer in this cohort was higher when compared with the previous cohort with 33.9% versus 27.3%, respectively. This is consistent with the global trend showing the increasing incidence of lung cancer among females, especially in the Asian population.[11]

Most cases were detected in patients aged 60 years and older (58.7%), followed by those aged 40 and 59 years (36.2%), and those 39 years and younger (4.3%). The proportion of patients aged at least 60 years was higher in this cohort compared to the earlier cohort (58.7% versus 54.7%). As seen in Table A3, the total proportion of females in the earlier cohort (27.3%) compared to this cohort (33.7%). The proportion of females with lung cancer among those under 40 years was higher in this cohort ( 41.4%) compared to the earlier cohort (20.5%) (Include citation on 2000 to 2008 monograph). Patients diagnosed at age 50 years or younger have a 59% increased likelihood of having targetable alterations such as epidermal growth factor receptor (EGFR) mutations and anaplastic lymphoid kinase (ALK) rearrangements.[12]

Most patients were married (76.4%) and were from the National Capital Region (45.3%) (Tables A4 & A5). Moreover, Regions III and IVA accounted for almost 40% of the total cases. The Lung Center of the Philippines remained a major catchment hospital for nearby regions. Finally, most patients with lung cancer belonged to the skilled agricultural, forestry, and fishery industry (8.9%) (Table A6).

Smoking history was still a critical factor in lung cancer risk. Most patients reported a smoking history (63.2%), while the rest never smoked (33.5%) (Table B1). Smoking remains a significant risk factor globally. Smoking was also shown to be a risk factor for lower survival in the 2000-2008 cohort.[7] Thus, tobacco control and smoking cessation programs should be upscaled. The Lung Center of the Philippines continues to help smokers quit nicotine through pharmacological and behavioral approaches.

The percentage of non-smokers or never-smokers with lung cancer in this cohort (33.5%) was higher compared with the earlier cohort (23.9%).6 According to a systematic review, around 60–80% of lung cancers in non-smokers are adenocarcinomas, compared with a 40% rate among current or former smokers.[13] Studies have shown that EGFR and P53 are common driver mutations among patients with lung cancer who never smoked. These mutations have also been linked to environmental pollutants, highlighting the role of the environment as a trigger.[14,16] Global cohorts have shown an association between long-term exposure to ambient PM2.5 pollutants and lung cancer mortality or morbidity.[17] Other risk factors include exposure to smoking, radon, asbestos, and a history of lung cancer in a first-degree family member. Advances in targeted therapy for EGFR and ALK have improved the survival of these patients.[13]

In this cohort, the most common comorbidity was hypertension (25.7%), followed by PTB (11.8%), diabetes (11.6%), COPD (6.4%), and asthma (3.8%) (Table B3). This is in contrast to the data in the 2008 to 2009 cohort, where PTB was the most common comorbidity reported, followed by hypertension, COPD, and diabetes. Programs effectively controlling TB at the LCP and in the Philippines may have possibly contributed to the decreased incidence of PTB among patients with lung cancer.

Most lung cancer patients had NSCLC (89.3%), with 56.1% of adenocarcinoma subtype (Table D1–2) which was higher compared with the previous cohort (41.7%). The proportions of early-stage lung cancer (IA to IIB) were similar between the current and previous cohort, 11.8% vs. 11.4%, respectively (Table C2). Among patients with NSCLC, 73.9% had stage IV disease, which was higher compared with the previous cohort (67.5%, Table C2).

Among those with NSCLC, the proportion and number of females with lung adenocarcinoma histology were higher in the current cohort, 45.1% vs. 18.8%, respectively (Table D2). The increase in adenocarcinoma cases in Southeast Asia is consistent with the global increase in this pathologic subtype.[18] In addition, more subtypes are being diagnosed and treated thanks to the availability of immunohistochemistry tests.

Efforts should be made to improve early cancer detection and treatment. The LCP recently embarked on a lung cancer screening program, "Screening for Early Lung Cancer Detection and Treatment (SELCaDT)" in collaboration with the Department of Health. This program aims to detect and treat early-stage lung cancer by screening high-risk individuals with low-dose chest CT scans.[10]

This cohort reflects the emergence of new diagnostics and advances in surgery, interventional pulmonology, and interventional radiology (Table E3). It also reflects the wider availability of immunohistochemistry and the introduction of biomarker testing. Additionally, experimental strategies, including the exploration of stem cell-based therapies, were received by some patients in this cohort.

**Limitations and recommendations**

Although this is the largest cohort of reported cases of lung cancer in a single institution in the Philippines, clinicodemographic factors and survival outcomes can be further investigated. In addition, the generalizability of the findings is limited and may not reflect the profile of patients with lung cancer in the whole Philippines, since this is based on single-institution data of a tertiary specialty referral center for chest and lung diseases. As data were extracted from hospital records, information may be incomplete. Data on the molecular profile and systemic treatment received (targeted, immunotherapy, or chemotherapy) may also be reflected in further updates of the monograph.

The impact of institutional programs like the Smoking Cessation Program and the Screening for Early Lung Cancer Detection and Treatment (SELCaDT) can also be evaluated in further studies. The ongoing Lung Cancer Registry of the LCP can also be utilized to enroll all possible patients and determine their clinical profile and treatment outcomes.

## CONCLUSION

This cohort from 2009 to 2017 studied 3,969 patients with lung cancer, similar to the number of patients in the 2000 to 2008 cohort. Most patients were males, smokers, and diagnosed with stage IV disease. The number and proportion of patients with concomitant PTB were lower compared with the cohort in 2000 to 2008. The percentage of non-smokers with lung cancer for this cohort was higher compared with the earlier cohort from 2000 to 2008. There was also a rise in the proportion of females with lung cancer and an increase in adenocarcinoma histology consistent with global trends. The in-hospital mortality remains high. Programs to improve lung cancer detection and survival, such as the Lung Cancer Registry and the SELCaDT, have been institutionalized.


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## CONFLICT OF INTEREST

The authors were members of the Lung Center of the Philippines Executive Committee at the time of data collection and writing of the manuscript.

## REFERENCES


1. Farlay J, Ervik M, Lam F, et al. Global cancer observatory: cancer today. Lyon, France: International Agency for Research on Cancer. 2024 [cited 2024 Apr] Available from: https://gco.iarc.who.int/today.
2. Thai AA, Solomon BJ, Sequist LV, Gainor JF, Heist RS. Lung cancer. Lancet. 2021;398(10299):535-54. doi:10.1016/S0140-6736(21)00312-3
3. National Comprehensive Cancer Network. NCCN clinical practice guidelines in oncology: non-small cell lung cancer, Version 5.2025. 2025 [cited 2025 Dec]. Available from: www.nccn.org.
4. National Comprehensive Cancer Network. NCCN clinical practice guidelines in oncology: small cell lung cancer, Version 5.2025. 2025 [cited 2025 Dec]. Available from: www.nccn.org.
5. Rudin CM, Brambilla E, Faivre-Finn C, Sage J. Small-cell lung cancer. Nat Rev Dis Primers. 2021;7(1):3. doi:10.1038/s41572-020-00235-0
6. Lung Center of the Philippines. Monograph on lung cancer: lung cancer registry data of 2000-2008. [cited 2025 Dec]. Available from lcp.gov.ph.
7. Sy-Naval S, Balanag V, et al. Risk factors for non-small cell lung cancer mortality in patients admitted at the lung center of the philippines: a retrospective cohort from 2000 to 2008. Article in press.
8. Aberle DR, Adams AM, Berg CD, et al. Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med. 2011;365:395-409.
9. de Koning HJ, van der Aalst CM, de Jong PA, et al. Reduced lung-cancer mortality with volume CT Screening in a randomized trial. N Engl J Med. 2020;382(6):503-13. doi:10.1056/NEJMoa1911793
10. Lung Center of the Philippines. Are you at risk for lung cancer? [cited 2024 Apr 04]. Available from: https://lcp.gov.ph/are-you-at-risk-for-lung-cancer.
11. Lu DN, Jiang Y, Zhang WC, et al. Lung cancer incidence in both sexes across global areas: data from 1978 to 2017 and predictions up to 2035. BMC Pulm Med. 2025;25(1):281. doi:10.1186/s12890-025-03748-0
12. Sacher AG, Dahlberg SE, Heng J, Mach S, Jänne PA, Oxnard GR. Association between younger age and targetable genomic alterations and prognosis in non-small-cell lung cancer. JAMA Oncol. 2016;2(3):313-20. doi:10.1001/jamaoncol.2015.4482
13. Murphy C, Pandya T, Swanton C, Solomon BJ. Lung cancer in nonsmoking individuals: a review. JAMA. 2025;334(20):1836-45. doi:10.1001/jama.2025.17695
14. Devarakonda S, Li Y, Martins Rodrigues F, et al. Genomic profiling of lung adenocarcinoma in never-smokers. J Clin Oncol. 2021;39(33):3747-58. doi:10.1200/JCO.21.01691
15. Kucab JE, Zou X, Morganella S, et al. A compendium of mutational signatures of environmental agents. Cell. 2019;177(4):821-36.e16. doi:10.1016/j.cell.2019.03.001
16. Chen CY, Huang KY, Chen CC, et al. The role of PM2.5 exposure in lung cancer: mechanisms, genetic factors, and clinical implications. EMBO Mol Med. 2025;17(1):31-40. doi:10.1038/s44321-024-00175-2
17. Wang M, Kim RY, Kohonen-Corish MRJ, Chen H, Donovan C, Oliver BG. Particulate matter air pollution as a cause of lung cancer: epidemiological and experimental evidence. Br J Cancer. 2025;132(11):986-96. doi:10.1038/s41416-025-02999-2
18. Noronha V, Budukh A, Chaturvedi P, et al. Uniqueness of lung cancer in Southeast Asia. Lancet Reg Health Southeast Asia. 2024;27:100430. doi:10.1016/j.lansea.2024.100430

## Appendix 1. LCP Form No. 63–001

LCP Form No. 63-001

**LUNG CENTER OF THE PHILIPPINES**
**(Quezon Avenue, Quezon City)**
**LUNG CANCER REGISTRY FORM**

### *PATIENT'S PROFILE*

**TUMOR REGISTRATION #:** _____ **PT ID #/HOSPITAL #:**_____ **PHILHEALTH #:** _____
**PATIENT'S NAME:**_____
**SEX:** [ ] 1-Male [ ] 2-Female **DATE OF BIRTH** (mm/dd/yyyy): _____ **AGE IN YEARS:** _____
**PERMANENT ADDRESS:** _____
**TEL. NO:** _____ **CELLPHONE NO.:**_____
**TEMPORARY ADDRESS:** _____
**TEL. NO:** _____ **CELLPHONE NO.:**_____
**OCCUPATION:** _____ **BIRTHPLACE:** _____
**CIVIL STATUS:** [ ] 1-Married [ ] 2-Single [ ] 3-Widow [ ] 4-Separated [ ] 99-Missing
**MOTHER'S MAIDEN NAME:** _____ **FATHER'S NAME:** _____

### *HISTORY*

**SMOKING STATUS:** [ ] 1-Current Smoker: [ ] Light [ ] Moderate [ ] Heavy **PACK YEARS:** ____ **# OF STICKS/DAY:** _____
[ ] 2- Former smoker [ ] 3- Never smoker [ ] 99-Missing **AGE STARTED:** ___ **AGE STOPPED:** ____
**ALCOHOL INTAKE HISTORY:** [ ] 1-Alcoholic [ ] 2-Previous Alcoholic [ ] 3-Non-alcoholic [ ] 99-Missing
**# OF BOTTLES/DAY:** _____ **in grams:**_____
**FAMILY HISTORY:** [ ] Malignancy/Cancer [ ] No information [ ] No Illness [ ] Others: _____ (PLS. SPECIFY)
**CO-MORBIDITIES:** [ ] COPD [ ] PTB [ ] Asthma [ ] Allergy
[ ] Diabetes [ ] Hypertension [ ] Cardiac Diseases [ ] Malignancy/Cancer
[ ] No information [ ] No Illness [ ] Others: _____ (PLS. SPECIFY)

### *INFORMATION ON CONSULTATION*

**CATEGORY OF PATIENT:** [ ] 1-Admitted [ ] 2-Out-patient [ ] 3-Radiotherapy [ ] 4-Others: _____
**DATE OF FIRST DIAGNOSIS BY A PHYSICIAN** (mm/dd/yyyy): _____ [ ] Unknown (PLS. SPECIFY)
**BASIS OF FIRST DIAGNOSIS:** [ ] Clinical [ ] Biopsy [ ] Cytology [ ] Unspecified
**PREVIOUS CONSULTATION PRIOR TO THIS ADMISSION:** [ ] Yes [ ] No If yes, where: _____
**PREVIOUS ADMISSION** : [ ] Yes [ ] No If yes, where: _____
**PREVIOUS TREATMENT ELSEWHERE:** [ ] Chemotherapy [ ] Radiotherapy [ ] Surgery [ ] None [ ] Others: _____ (PLS. SPECIFY)
**DATE OF ADMISSION/CONSULTATION** (mm/dd/yyyy): _____ **REFERRAL FROM**: _____
**DATE OF DISCHARGE** (mm/dd/yyyy): _____ **ATTENDING PHYSICIAN:** _____
**ADMITTING DIAGNOSIS:** _____ **ICD CODE:** _____
**FINAL DIAGNOSIS:** _____ **ICD CODE:** _____

### *CLASSIFICATION*

**HISTOPATHOLOGY:** **[ ] NON-SMALL CELL:** [ ] Squamous Cell [ ] Adenocarcinoma: [ ] Bronchioloalveolar
[ ] Large Cell [ ] Others_____ (PLS. SPECIFY)
**[ ] SMALL CELL:** [ ] Combined Small Cell
[ ] Malignant Cell (+Cytology) [ ] Not specified
[ ] Equivocal [ ] None

**STAGING BEFORE TREATMENT AT LUNG CENTER:**

**Clinical Stage:** [ ] Known [ ] Not Known
**NSCLC:** T [ ] N [ ] M [ ]
Stage I [ ] A Stage II [ ] A Stage III [ ] A Stage IV [ ] A
[ ] B [ ] B [ ] B [ ] B
**SCLC:** [ ] Limited [ ] Extensive

**Pathologic Stage (Post Op/Autopsy):** [ ] Known [ ] Not Known
**NSCLC:** T [ ] N [ ] M [ ]
Stage I [ ] A Stage II [ ] A Stage III [ ] A Stage IV [ ] A
[ ] B [ ] B [ ] B [ ] B
**SCLC:** [ ] Limited [ ] Extensive

**STAGING DURING TREATMENT AT LUNG CENTER:**

**Clinical Stage:** [ ] Known [ ] Not Known
**NSCLC:** T [ ] N [ ] M [ ]
Stage I [ ] A Stage II [ ] A Stage III [ ] A Stage IV [ ] A
[ ] B [ ] B [ ] B [ ] B
**SCLC:** [ ] Limited [ ] Extensive

**Pathologic Stage (Post Op/Autopsy):** [ ] Known [ ] Not Known
**NSCLC:** T [ ] N [ ] M [ ]
Stage I [ ] A Stage II [ ] A Stage III [ ] A Stage IV [ ] A
[ ] B [ ] B [ ] B [ ] B
**SCLC:** [ ] Limited [ ] Extensive

**SITE OF METASTASIS:**
M1a (intrathoracic): [ ] Malignant pleural/pericardial effusion [ ] Parietal Pleural Nodules [ ] Contralateral Lung
M1b (extrathoracic): [ ] Brain [ ] Bone [ ] Liver [ ] Adrenal [ ] Others: _____ (PLS. SPECIFY)

**Form completed by:** _____ **Date completed(mm/dd/yyyy):** _____

**The New TNM Staging System for Lung Cancer 7th Edition**
**(Small cell, non-small cell and carcinoid tumors of the lung)**

**Primary Tumor (T)**

| | |
|---|---|
| **T1** | Tumor ≤ 3cm in greatest dimension, surrounded by lung or visceral pleura without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus)* |
| **T1a** | Tumor ≤ 2cm in greatest diameter |
| **T1b** | Tumor > 2cm but ≤ 3cm in greatest diameter |
| **T2** | Tumor > 3cm but ≤ 7cm or tumor of any of the following features (T2 tumors with these features are classified T2a if ≤ 5cm)<br>Involves main bronchus ≥ 2cm distal to the carina<br>Invades the visceral pleura (PL1 or PL2)<br>Associated with atelectasis or obstructive pneumonitis that extends to the hilar region but does not involve the entire lung |
| **T2a** | Tumor > 3cm but ≤ 5cm in greatest dimension |
| **T2b** | Tumor > 5cm but ≤ 7cm in greatest dimension |
| **T3** | Tumor > 7cm or one that directly invades any of the following: parietal pleural (PL3) chest wall (including superior sulcus tumors), diaphragm, phrenic nerve, mediastinal pleura, parietal pericardium; or tumor in the main bronchus (<2cm distal to the carina* but without involvement of the carina; or associated atelectasis or obstructive pneumonitis of the entire lung or separate tumor nodule(s) in the same lobe |
| **T4** | Tumor of any size that invades any of the following: mediastinum, heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe |

*The uncommon superficial spreading tumor of any size with its invasive component limited to the bronchial wall, which may extend proximally to the main bronchus, is also classified as T1a

**Regional Lymph Nodes (N)**

| | |
|---|---|
| **NX** | Regional lymph nodes cannot be assessed |
| **N0** | No regional lymph node metastasis |
| **N1** | Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension |
| **N2** | Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s) |
| **N3** | Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s) |

**Distant Metastasis (M)**

| | |
|---|---|
| **M0** | No distant metastasis (no pathologic M0; use clinical M to complete stage group) |
| **M1** | Distant metastasis |
| **M1a** | Separate tumor nodule(s) in a contralateral lobe; tumor with pleural nodules or malignant pleural (or pericardial) effusion** |
| **M1b** | Distant metastasis |

**Most pleural (and pericardial) effusions with lung cancer are due to tumor, in a few patients, however, multiple cytopathologic examinations of pleural (pericardial) fluid are negative for tumor, and the fluid is nonbloody and is not an exudates. Where these elements and clinical judgement dictate that the effusion is not related to the tumor, the effusion should be excluded as a staging element and the patient should be classified as M0.

**Stage Grouping**

| | | | |
|---|---|---|---|
| **Stage I A** | T1a | N0 | M0 |
| | T1b | N0 | M0 |
| **Stage I B** | T2a | N0 | M0 |
| **Stage II A** | T2b | N0 | M0 |
| | T1a | N1 | M0 |
| | T1b | N1 | M0 |
| | T2a | N1 | M0 |
| **Stage II B** | T2b | N1 | M0 |
| | T3 | N0 | M0 |
| **Stage III A** | T1a | N2 | M0 |
| | T1b | N2 | M0 |
| | T2a | N2 | M0 |
| | T2b | N2 | M0 |
| | T3 | N1 | M0 |
| | T3 | N2 | M0 |
| | T4 | N0 | M0 |
| | T4 | N1 | M0 |
| **Stage III B** | T1a | N3 | M0 |
| | T1b | N3 | M0 |
| | T2a | N3 | M0 |
| | T2b | N3 | M0 |
| | T3 | N3 | M0 |
| | T4 | N2 | M0 |
| | T4 | N3 | M0 |
| **Stage IVA** | Any T | Any N | M1a |
| **Stage IVB** | Any T | Any N | M1b |

**DEFINITION OF TERMS:**

***ADDRESS***

**Temporary Address**: temporary residence of the patient during treatment and/or hospitalization

**Permanent Address:** main or principal residence of the patient

***SMOKING STATUS***

**Current Smoker:**
Light smoker: 1-10 sticks/day
Moderate smoker: >10 but <20 sticks/day
Heavy smoker: >20 sticks/day

**Former smoker:**
Person who has smoked ≥ 100 cigarettes in their lifetime but currently do not smoke ≥ 1 year

**Never smoker:**
Never smoked a cigarette or who smoked <100 cigarettes in their lifetime

**Source:** US Centers for Disease Control and Prevention **(2010)**

***ALCOHOL INTAKE STATUS***

**Alcoholic:**
For women, more than 1 drink (or >14g) per day
For men, more than 2 drinks (or >28g) per day
Alcohol consumption=# of bottles x amount in grams
0.6 ounces=14 g

**Previous Alcoholic:**
Person who has stopped drinking alcoholic beverages ≥ 1 year

**Non-alcoholic:**
Person who doesn't drink alcoholic beverages or who drink ≤ 14g for women and ≤ 28g for men

**Source:** US Centers for Disease Control and Prevention **(2008)**

***HISTOPATHOLOGY***

**Malignant Cell:**
Words that are considered vague such as *"probable", "suspect", "suspicious", "compatible with"* or *"consistent with"* are interpreted as involvement by the tumor.

**Equivocal:**
Not definite; Needs further evaluation/confirmation

**Not specified:**
For diagnosed lung cancer case outside Lung Center with no attached histopathology result

**None:**
No procedure done to confirm malignancy

## Appendix 2. LCP Form No. 63–002

*LCP Form No. 63-003*

**LUNG CENTER OF THE PHILIPPINES**
**(Quezon Avenue, Quezon City)**
**LUNG CANCER REGISTRY (MANAGEMENT FORM)**

**TUMOR REGISTRATION #:**_____ **PT ID #/ HOSPITAL #:**_____ **PHILHEALTH #:** _____

**PATIENT'S NAME:** _____ **ADMISSION/FOLLOW-UP NO.:** _____

***MANAGEMENT DURING PRESENT CONSULTATION***

[ ] **Diagnostic**_____ [ ] **Supportive** _____
(PLS. SPECIFY) (PLS. SPECIFY)

[ ] **Surgery** _____
(PLS. SPECIFY)

[ ] **Radiotherapy**: [ ] Cobalt

[ ] Linear Accelerator: [ ] 2D [ ] 3D-CRT [ ] IMRT [ ] IGRT [ ] SBRT

[ ] Brachytherapy: [ ] Intracavitary [ ] Intraluminal [ ] Interstitial

[ ] Others: _____
(PLS. SPECIFY)

[ ] **Chemotherapy** Regimen: _____ Cycle #: _____

[ ] **Stem Cell (Immunotherapy)** [ ] **Others** _____
(PLS. SPECIFY)

[ ] **No information**

**VITAL STATUS ON DISCHARGE:** [ ] Alive [ ] Dead Date of Death (mm/dd/yyyy): _____

**CAUSES OF DEATH:**

Immediate Cause: _____

Antecedent Cause: _____

Underlying Cause:_____

Significant Conditions: _____

**Form completed by:** _____ **Date completed(mm/dd/yyyy):** _____

**Encoded by:** _____ **Date encoded(mm/dd/yyyy):**_____

## Appendix 2. LCP Form No. 63–003

*LCP Form No. 63-002*

**LUNG CENTER OF THE PHILIPPINES**
**LUNG CANCER REGISTRY (FOLLOW-UP/RE-ADMISSION FORM)**

**TUMOR REGISTRATION #:** _____ **PT ID #/HOSPITAL #:**_____ **PHILHEALTH #:** _____

**PATIENT'S NAME:** _____ **ADMISSION/FOLLOW-UP NO.:** _____

**DATE OF ADMISSION/CONSULTATION** (mm/dd/yyyy)**:** _____ **DATE OF DISCHARGE** (mm/dd/yyyy)**:** _____

**ATTENDING PHYSICIAN:** _____

**ADMITTING DIAGNOSIS:** _____ **ICD CODE:** _____

**FINAL DIAGNOSIS:** _____ **ICD CODE:** _____

**PREVIOUS INTERVENTION:** **Chemotherapy**: [ ] Neoadjuvant [ ] Adjuvant [ ] Palliative Cycle #:_____

[ ] **Surgery** [ ] **Radiotherapy** [ ] **Immunotherapy**

**RESPONSE TO PREVIOUS TREATMENT:** [ ] Stable [ ] Complete Response [ ] Partial Response [ ] Progressive

Resection: [ ] Complete [ ] Partial

**STATUS ON CONSULTATION:** [ ] Cured [ ] Control [ ] Remission

**CO-MORBIDITIES:** [ ] COPD [ ] PTB [ ] Asthma [ ] Allergy

[ ] Diabetes [ ] Hypertension [ ] Cardiac Disease [ ] Second malignancy

[ ] No information [ ] No Illness [ ] Others: _____
(PLS. SPECIFY)

***STAGING***

**Clinical Stage:** [ ] Known [ ] Not Known
**NSCLC:** T[ ] N[ ] M[ ]
Stage I [ ] A Stage II [ ] A Stage III [ ] A Stage IV [ ] A
[ ] B [ ] B [ ] B [ ] B
**SCLC**: [ ] Limited [ ] Extensive

**Pathologic Stage (Post Op/Autopsy):** [ ] Known [ ] Not Known
**NSCLC:** T[ ] N[ ] M[ ]
Stage I [ ] A Stage II [ ] A Stage III [ ] A Stage IV [ ] A
[ ] B [ ] B [ ] B [ ] B
**SCLC**: [ ] Limited [ ] Extensive

**Form completed by:** _____ **Date completed(mm/dd/yyyy):**_____

**DEFINITION OF TERMS:**

****TUMOR RESPONSE BASED ON IMAGING (RECIST 1.1) AFTER PREVIOUS TREATMENT:****

**Progression**- substantial worsening of the over-all tumor burden coupled with persistence of 1 or more maintenance of tumor marker level above the normal limits sufficiently to merit discontinuation of therapy

**Stable**-no absolute increase of more than 20% in the size of the lesion taking into consideration the smallest target lesion as reference

**Partial Response**-subsequent decrease in the size of the target lesion after treatment measured through an imaging technique. Any pathological lymph nodes (whether target or non-target) must have reduction in short axis to <10 mm

**Complete Response**-disappearance or absence of all the target lesion and normalization of tumor marker level at a subsequent time point after therapy through the use of imaging modality employed. Any pathological lymph nodes (whether target or non-target) must have reduction in short axis to <10 mm

****STATUS ON CONSULTATION AFTER COMPLETION OF THERAPY:****
**Cured** – no evidence of disease (≥ 10 years)

**Control stage** – stability at present disease ≥ 6 months to < 5 years

**Remission** - no evidence of disease >5 years to <10 years

**Source:** NGELANGEL, et al. *Handbook on Basic Medical Oncology 2nd edition*. 2001, p.47.