

P1.341: National lung cancer quality improvement indicators in Aotearoa New Zealand: comparison of performance across two time periods

Paul Dawkins^{1,2}, Ross Lawrenson^{3,4}, Chris Harrington⁵, Gabrielle Nicholson⁶, Chavi Uduwaka⁶, Hazem Abd Elkader⁶, Isaac Smith⁶, Kayla Cook⁶, James Entwisle⁷

1. Te Whatu Ora - Counties Manukau; 2. Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand; 3. Medical Research Centre, The University of Waikato, Hamilton, New Zealand; 4. Te Whatu Ora Waikato, Hamilton, New Zealand; 5. Te Whatu Ora - Waitaha Canterbury; 6. Te Aho o Te Kahu, Cancer Control Agency NZ; 7. Te Whatu Ora - Capital, Coast and Hutt Valley

INTRODUCTION

- Lung cancer remains a leading cause of cancer mortality in Aotearoa New Zealand, with a high proportion of diagnoses following emergency presentation (EP), reflecting late detection.
- This study updated selected lung cancer quality performance indicators (QPIs) using national data from 2019–2022 (Period 2), compared with 2015–2018 (Period 1), to assess temporal change and persistent inequities.

METHODS

- A retrospective, population-level analysis was conducted using routinely collected national administrative datasets.
- The cohort comprised 9,567 individuals with a new primary lung cancer diagnosis between 1 January 2019 and 31 December 2022.
- Four of the eleven original lung cancer QPIs were re-examined in detail.
- Results were stratified by age, sex, ethnicity, socioeconomic deprivation, rurality, and disease extent.

DISCUSSION AND CONCLUSION

Key messages

- This national update demonstrates modest improvement across some QPIs over time, alongside persistent inequities by ethnicity, deprivation and rurality.
- High proportions of diagnosis following EP indicate ongoing challenges in early detection.
- Although curative surgery and one-year OS improved overall, Māori and Pacific peoples continued to experience poorer outcomes.
- Unchanged use of SACT near death suggests potentially futile treatment in some cases.

Future directions

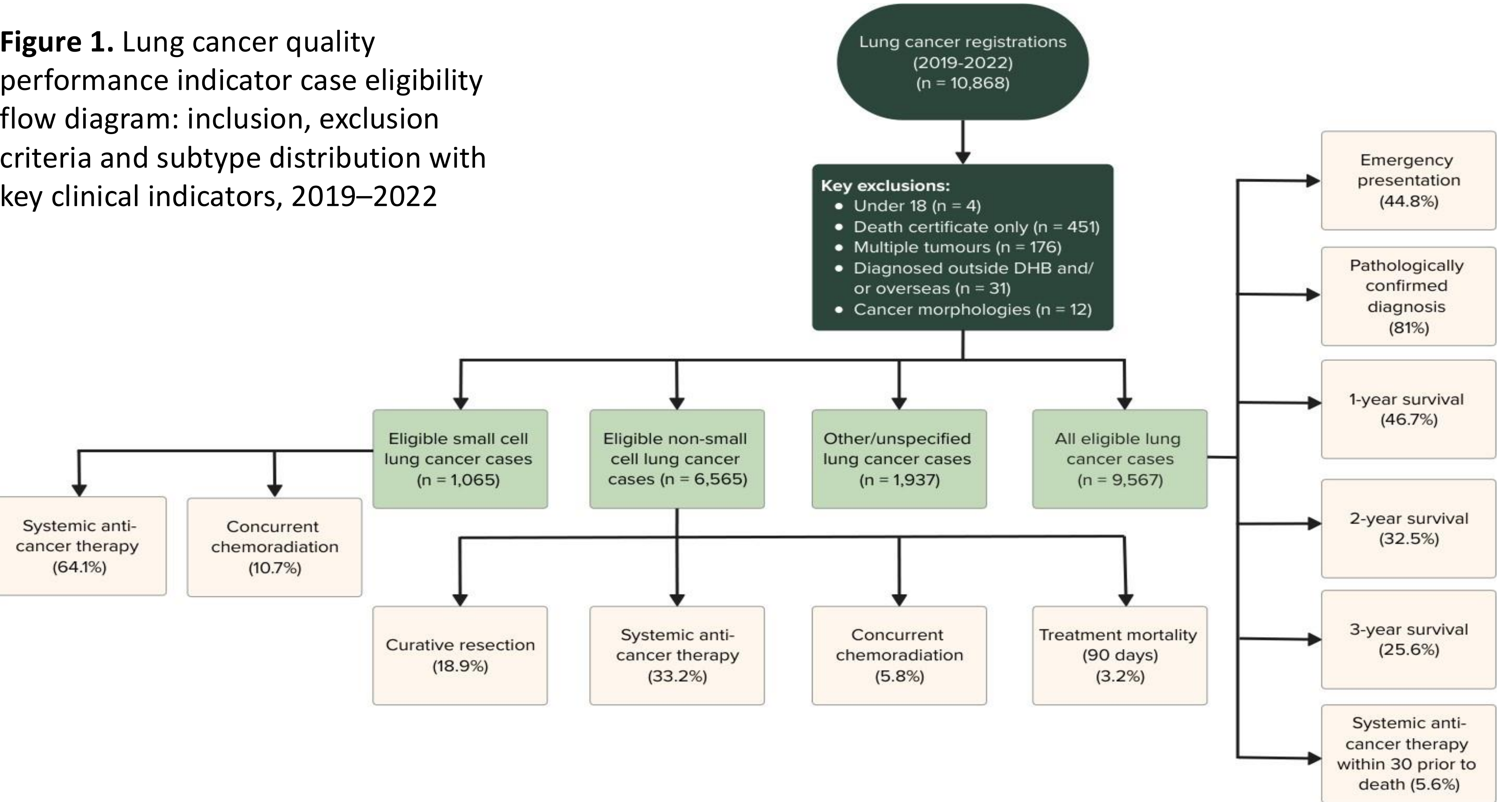
- Findings support targeted quality improvement efforts, particularly for district outliers, and reinforce the need for strengthening early diagnosis through primary care, reducing cost barriers, and resourcing Māori- and Pacific-led services.

Table 1. Demographic characteristics of people diagnosed with lung cancer in New Zealand, 2019–2022

People with lung cancer		
	n	%
Cases eligible		
Total	9,567	100.0
Diagnosis subtypes		
Small cell	1,065	11.1
Non-small cell	6,565	68.6
Other/unspecified	1,937	20.3
Year of diagnosis		
2019	2,282	23.9
2020	2,451	25.6
2021	2,460	25.7
2022	2,374	24.8
Sex		
Male	4,633	48.4
Female	4,932	51.6
Age group (years)		
18–49	294	3.1
50–59	1,201	12.6
60–69	2,788	29.1
70–79	3,654	38.2
80+	1,630	17.0
Ethnicity		
Māori	2,012	21.1
Pacific peoples	485	5.1
Asian	579	6.1
European/other	6,467	67.8

RESULTS

Figure 1. Lung cancer quality performance indicator case eligibility flow diagram: inclusion, exclusion criteria and subtype distribution with key clinical indicators, 2019–2022



QPI: Route to Diagnosis remained largely unchanged between periods (45.0% versus 44.8% following EP). After age-adjustment, inequities persisted, with **higher proportions of diagnoses following EP among Pacific and Māori** (58.2% and 47.2% respectively), compared with Asian (42.9%), and European/other (41.2%), and **those living in more deprived areas** (38.1% least deprived versus 49.1% most deprived). EP diagnosis was **strongly associated with advanced SEER stage** (64.8% distant versus 6.1% localised) and varied by district (34.9%–51.8%).

QPI: Curative surgical resection for NSCLC increased slightly between periods (16.7% versus 18.9%), despite system disruptions, including the COVID-19 pandemic. After age-adjustment, **Māori had the lowest proportion receiving resection** (16.8%) compared with Pacific (19.2%), European/other (20.0%), and Asian (24.4%). **Disparities by deprivation and rurality persisted**, with substantial district variation (11.4%–25.3%).

QPI: One-year overall survival (OS) improved between periods (41.8% to 46.7%). After age adjustment, **one-year OS remained lowest among Māori and Pacific** (41.8% and 47.5% respectively), compared with European/other (51.4%), and Asian (70.7%). **One-year OS decreased with increasing deprivation** (61.3% least deprived versus 44.1% most deprived) and was **lower for rural than urban residents** (45.6% versus 51.4%), with **wide district variation** (30.9%–54.6%).

QPI: Systemic anti-cancer therapy (SACT) within 30 days prior to death remained unchanged between periods (5.9% versus 5.6%). After age adjustment, **the highest proportion receiving SACT near death was in Asians** (10.8%), compared with European/other (7.0%), Pacific (7.4%), and Māori (7.5%). **Proportions were higher for rural than urban residents** (8.7% versus 6.6%). **District variation** ranged from 3.5% to 14.0%.

Equity analysis comparing Māori with non-Māori, non-Pacific, non-Asian demonstrated persistent **higher likelihood of EP diagnosis** (RR 1.15), **lower likelihood of curative resection for NSCLC** (RR 0.84), and **poorer one-year OS** (RR 0.81).