Lung Cancer Clinical Quality Data Platform (LUCAP)
Shadow report

Preamble

Lung cancer is the leading cause of cancer death for Western Australians and incidence is expected to continue to increase until 2040-2050. In 2018, the National Lung Cancer Optimal Care Pathway (OCP) has been formally endorsed by state and federal governments. The evaluable timepoints in the OCP pathway include time to first specialist appointment, diagnosis and treatment commencement (Figure 1).

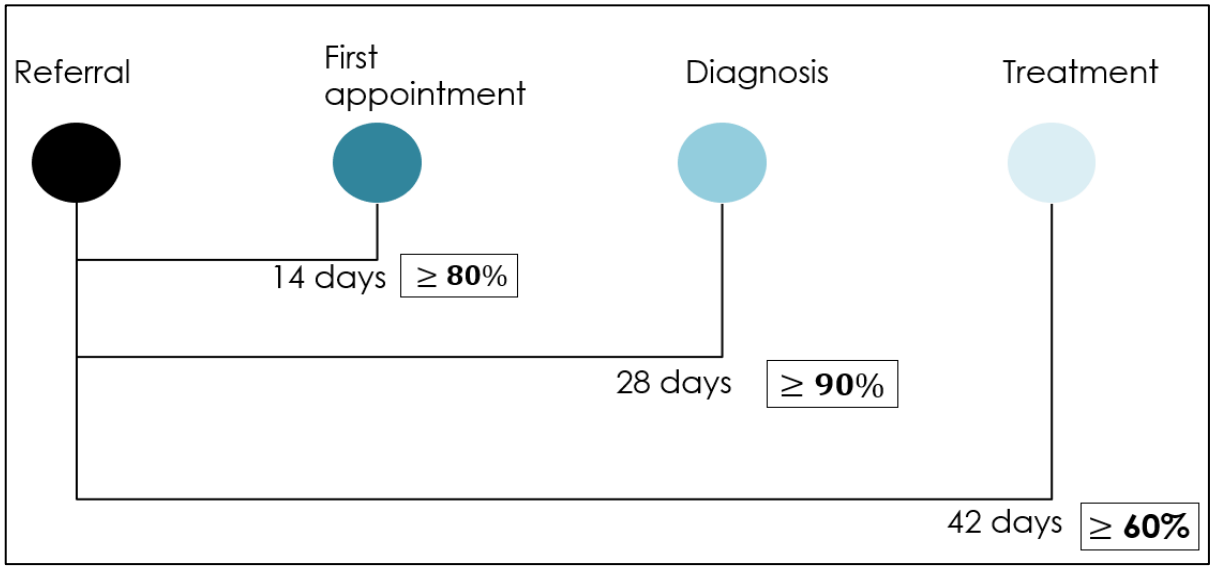
The aim of the LUCAP (Lung Cancer Clinical Quality Data Platform) project is to identify and alleviate unwarranted variation in lung cancer care in Australia.

Methods

In late 2022, LUCAP commenced prospective data collection, with recruitment of patients with suspected or confirmed thoracic cancer seen at the four major centres in metropolitan Perth. A total of 517 patients with confirmed lung cancer, recruited since August 2022, have been included in this analysis. Data censure was 14 February 2024.

Specific Institution names have been withheld for this initial shadow LUCAP report. Subsequent reports will not be anonymised. A Delphi consensus process has also been conducted to develop additional Clinical Quality Indicators and has been submitted for publication.

Figure 1. Optimal Care Pathway timepoints for people with lung cancer & Australasian clinical quality indicator (CQI) for meeting timepoints.



Results

Table 1 presents the summary demographics.

Table 1. Population demographics across all institutions

	All participants (n=707)	All participants diagnosed with lung cancer (n=517)
Age (median, years)	72 (range 41-96)	72 (range 43-96)
Sex (F:M)	320 (45%):387 (55%)	235 (46%):282 (55%)
Aboriginal or Torres Strait Islander	21 (3%)	20 (4%)
Tobacco exposure (C:F:N)*	222 (31%):368 (52%):112 (16%)	176 (34%):270 (52%):71 (14%)
Metropolitan vs non-metropolitan	513 (73%) metropolitan 189 (27%) non-metropolitan	378 (73%) metropolitan 134 (26%) non-metropolitan

*Current: Former: Never

Tumour histology included: 486 non-small cell lung cancer (NSCLC) (87%), of which 369 non-squamous NSCLC, 43 small cell lung cancer (8%), 14 carcinoid and 9 mesothelioma. Tables 2-4 present the OCP timepoint data, summarised in Figure 2.

Table 2. First OCP Timepoint: Time to first seen by specialist (KPI≤ 14 days, CQI ≥80%)

	Median (days)	KPI met
Overall	**19**	**39%**
Metro	18	42%
Non-metro	21	29%
By site		
Alpha	17	30%
Bravo	20	30%
Charlie	7	74%
Delta	13	58%

Table 3. Second OCP Timepoint: Time to pathological diagnosis (KPI≤28 days, CQI ≥90%)

	Median (days)	KPI met
Overall	**36**	**36%**
Metro	36	38%
Non-metro	40	30%
By site		
Alpha	34	35%
Bravo	36	33%
Charlie	27	51%
Delta	39	44%

Table 4. Third OCP Timepoint: Time to treatment commencement (KPI≤ 42 days, CQI ≥60%)

	Median (days)	KPI met
Overall	**74**	**21%**
Metro	75	19%
Non-metro	68	26%
By site		
Alpha	75	20%
Bravo	71	20%
Charlie	71	27%
Delta	67.5	25%

Table 5. Results by treatment modality from diagnosis to treatment start dates (KPI≤ 14 days)

	All	Alpha	Bravo	Charlie	Delta
Surgery	39 days (22%)	41 days (22%)	37 days (17%)	42 days (0%)	15 days (48%)
Radiotherapy	41 days (8%)	41.5 days (8%)	44 days (10%)	41 days (0%)	37 days (0%)
Definitive chemoradiotherapy	28 days (23%)	25 days (29%)	28 days (18%)	30 days (38%)	35 days (0%)
Systemic therapy +/- radiotherapy	16 days (45%)	19 days (35%)	16 days (47%)	12 days (59%)	16.5 days (50%)

Figure 2. Summary of Optimal Care Pathway timepoints performance across the WA Health system.

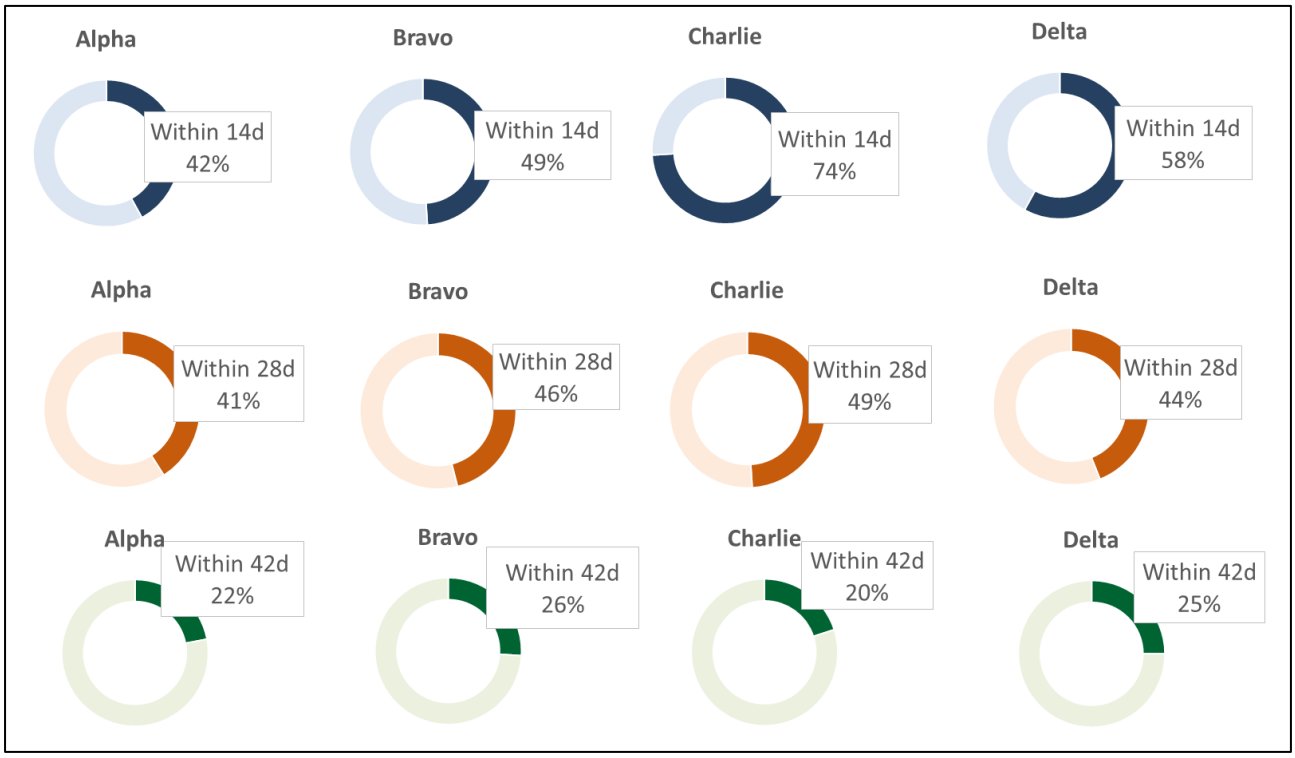
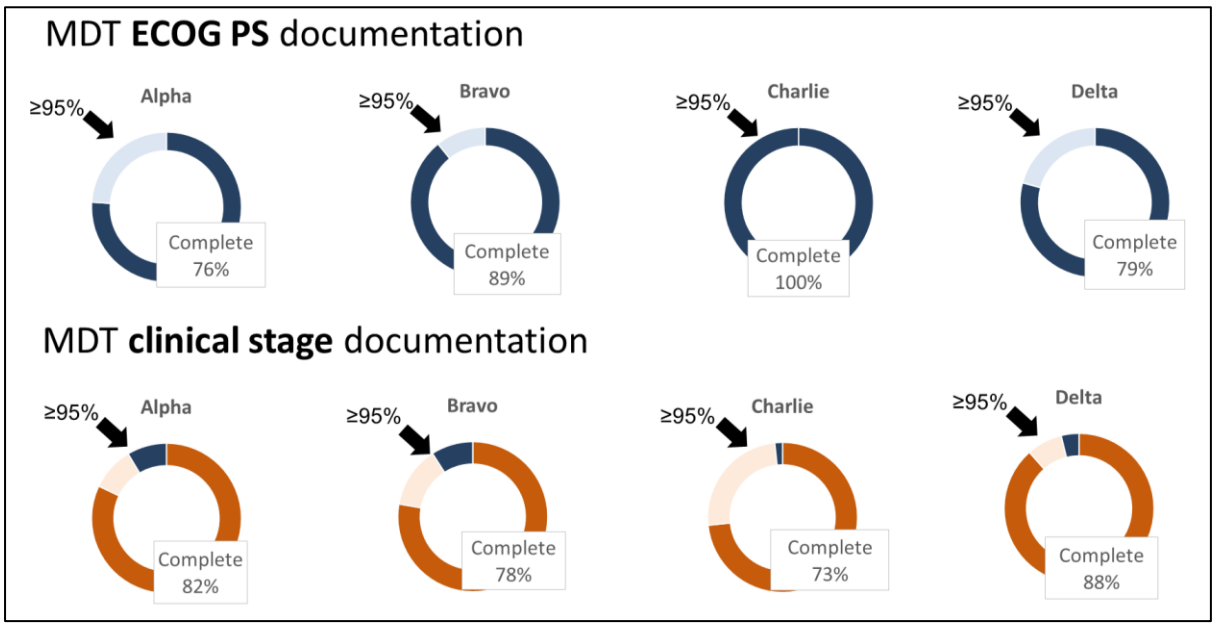


Figure 3. Summary of MDT clinical documentation of clinical stage and performance status across the WA Health system.



Discussion

This report includes the first prospective data collection assessing delivery of lung cancer care since the audit practice of the WA Thoracic Tumour Collaborative began in 2014. It includes a large dataset of >500 patients with lung cancer. It demonstrates widespread system failure in providing timely care across all health service areas and illustrates the continuing challenges clinicians and institutions face to provide high quality care for patients. All sites have similar results for 28 day and 42 day timeliness and access to definitive treatment is equally poor across all Health Services.

There is some variation in the clinical documentation during MDT with improvements required for documentation of clinical staging in particular.

The LUCAP project is ongoing and future work includes integration with hospital data systems to prospectively collect data, incorporation of opt out consent as well as development of regular near real-time reports for clinical teams to assess and respond to obstacles in providing timely care. LUCAP will expand to NSW and Qld in 2024.

Future Demand

The continuing expected rise in incidence of lung cancer over the next 25 years will generate an increase in workload of 70% on current state by 2040-2050. (https://gco.iarc.fr/tomorrow/).

The complexity of high-quality lung cancer investigation and treatment has increased significantly in the last decade. Demands on our health system will continue to stretch resources with adoption of neo-adjuvant therapy and sublobar resection requiring meticulous pre-treatment workup. In addition, further demands are expected with the implementation of the new TNM staging system in late 2024 and the national lung cancer screening program in July 2025. It is expected that screen detected lesions/lung cancers will add increased workload to clinical teams that will likely be sustained for many years. The majority of patients that develop lung cancers will not be eligible for screening and will be a continuing clinical workload in addition to that generated by the lung cancer screening program.

Conclusion

This report presents the most comprehensive data to date evaluating lung cancer services across Western Australia. There is a system-wide failure in the provision of timely access to care across all health services. A state-wide review of health infrastructure is warranted.

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