Victorian Mesothelioma Outcomes Registry

Annual Report 2022

Cancer Council Victoria | VLCR Victorian Lung Cancer Registry | Mesothelioma | MONASH University | TOGA Thoracic Oncology Group Australasia

Victorian Mesothelioma Outcomes Registry

Overall Summary 2022

105 people diagnosed with mesothelioma

19 Participating health services

76 Median age at diagnosis (years)

70% of participants diagnosed lived in metropolitan Victoria

65% of participants with history of **asbestos exposure** documented in their medical records

81% of participants are male and **19%** are female

92% of participants had **pleural** mesothelioma

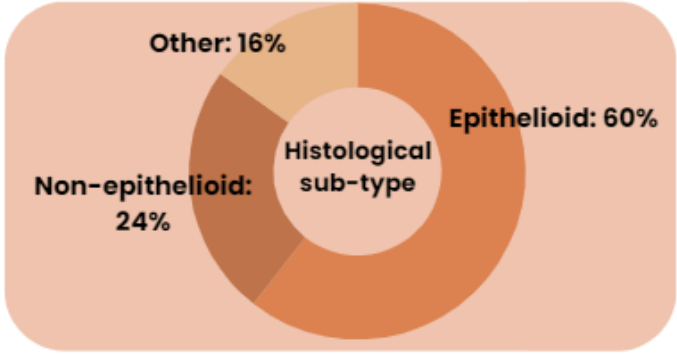
Median survival of 7 months

59% of participants had a referral to diagnosis within 28 days

67% of participants had documented presentation at a multidisciplinary meeting

30% of participants had access to specialist cancer nurse for support

77% of participants had a documented performance status (ECOG)



59% of participants received systemic anti-cancer therapy (immunotherapy and/or chemotherapy)

Foreword

Mesothelioma is a rare cancer which most commonly arises in the pleural lining of the lungs and is almost always associated with a history of asbestos exposure. Although we know how many people are diagnosed with mesothelioma each year in Victoria, until now, we have not had any information about how they are diagnosed or the treatment and support they receive [1]. Importantly, immunotherapy has recently been shown to improve survival for mesothelioma [2].

The Victorian Mesothelioma Outcomes Registry (VMOR) was established in 2022 with funding from Cancer Council Victoria. This funding allowed the Victorian Lung Cancer Registry (VLCR) to expand to collect and report on patterns of care for people diagnosed with mesothelioma over a three year period from 2022-2024. We are delighted to present the baseline results for people diagnosed with mesothelioma in 2022 and hope to build on these clinical outcomes for the next two years with the addition of patient reported outcomes.

In parallel to baseline clinical data collection, with the support and endorsement of Thoracic Oncology Group of Australasia (TOGA) we conducted a modified Delphi study to identify clinical quality indicators (CQIs) felt to be important for mesothelioma care in Australia by over 70% of voters, based on a systematic review of published literature and international mesothelioma registry data items. Ten CQIs were identified: time from referral to diagnosis, discussion at a multidisciplinary meeting (MDM), documentation of asbestos exposure, performance status and histologic subtyping, receipt of systemic anti-cancer therapy (SACT), access to a cancer nurse specialist for support, evidence of supportive care screening, and (for pleural mesothelioma only) use of pleural phase contrast in the diagnostic CT and definitive management of pleural effusion with pleurodesis. Nine of these CQIs were feasible to collect through the VLCR and are reported here. The CQI that is not currently feasible (pleural phase contrast diagnostic CT) would require a centralised statewide mesothelioma MDM with review of diagnostic imaging to assess this [3-5].

In addition, during 2022, we have developed a co-designed bespoke patient survey, which was modified following individual interview feedback from 20 people living with mesothelioma, in our registry. This survey is being sent to people diagnosed with mesothelioma in 2023 and 2024, within the registry and so our subsequent reports will also include patient-reported outcomes from those who respond.

We hope that our work will raise the profile of people living mesothelioma across the state and help identify and address any variations in access to support and treatment for them.

Associate Professor Susan Harden
Clinical Lead
Victorian Mesothelioma Outcomes Registry

Executive summary

Key findings

- 105 participants diagnosed with mesothelioma from 19 participating health services across Victoria were registered into VMOR.
- 8 out of 10 were male (81%). The median age at diagnosis was 76 years (IQR: 67, 82), and 70% lived within metropolitan Victoria.
- Pleural mesothelioma was the most common anatomical site (92%).
- 65% of participants had documented history of asbestos exposure.
- Histological confirmation of diagnosis documentation was high (96%) with 60% epithelioid subtype.
- **67% of participants had documented presentation at a multidisciplinary meeting (MDM). This ranged from 52% to 85% across Victoria.**
- **30% of participants had access to a specialist cancer nurse for support, ranging from 24% to 38% across Victoria.**
- **59% of participants had systemic anti-cancer treatment (immunotherapy and/or chemotherapy). However this varied from 33% to 69% across across Victoria**

Recommendations

- 59% of participants received chemotherapy and/or immunotherapy treatment (SACT) for mesothelioma. This proportion compares well to international data but it will be important to explore reasons for why 40% of participants did not receive SACT and in particular to investigate the variation in receipt of SACT from 33 to 69% across state integrated cancer services. Our real world outcome data supports clinical trials showing improved survival for people receiving SACT.

- Access to a cancer nurse specialist (30%) and evidence of supportive care screening (28%) appears to be low. Mesothelioma is a rare cancer with high morbidity and increasing the support available to people living with mesothelioma and their carers, should be a priority. We hope that information from our patient reported outcome surveys will also assist with optimising this aspect of patient-centred care.

- 67% of participants were discussed at an MDM, ranging from 52 to 85% across state integrated cancer services. MDM discussion assists with complex symptom management and increases the likelihood of people receiving active treatment and access to clinical trials and so we hope to see increased MDM discussion across all regions over the next two years.

Methods

VMOR Database

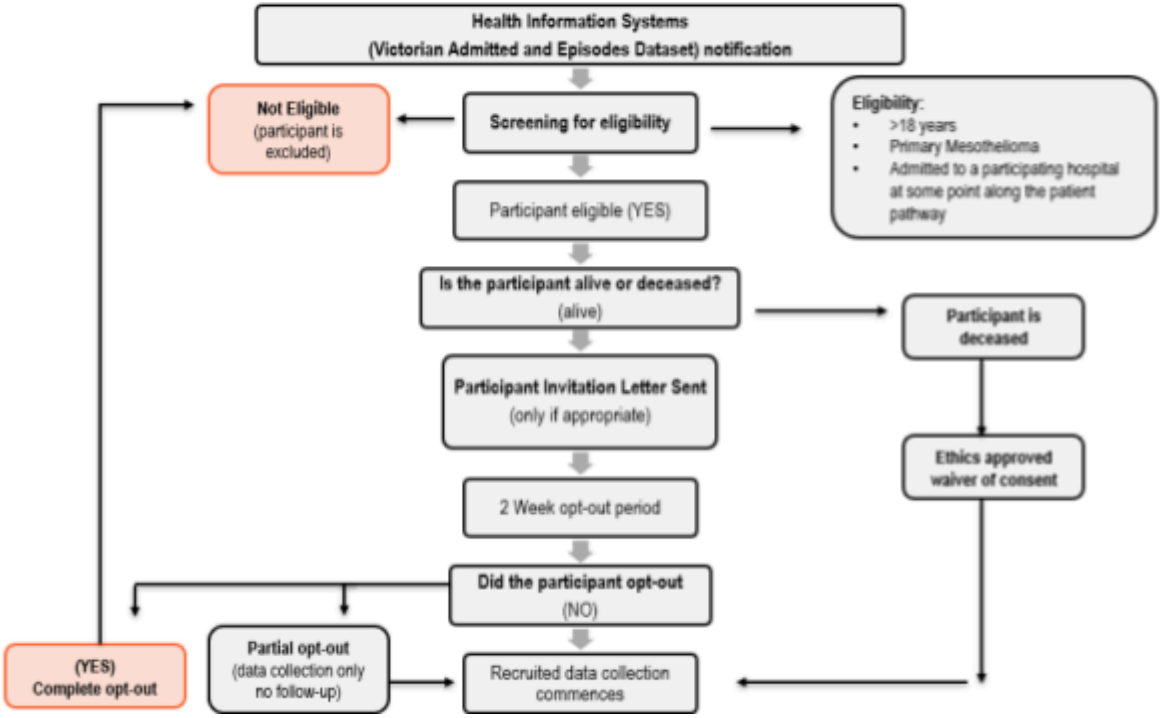
Data collection was conducted at each 19 participating health services by manual review of the medical records via REDCap. Once data collection was completed, data analysis was conducted using R programming language.

The VMOR REDCap database is a secure, web-based application. Data collected through REDCap will be stored on infrastructure located in Australia and managed by Helix (Monash University). Data stored on this infrastructure is backed up daily and encrypted. The data is accessed securely and stored via Monash University Helix Serves.

Participating Health Services

- Albury-Wodonga Health
- Alfred Health
- Austin Health
- Ballarat Health
- Barwon Health
- Bendigo Health
- Cabrini Health
- Eastern Health
- Epworth Health
- Goulburn Valley Health
- Latrobe Regional Health
- Monash Health
- Northern Health
- Peninsula Health
- Peter MacCallum Cancer Centre
- Royal Melbourne Hospital
- St Vincent's Hospital
- St Vincent's Private Hospital
- Western Health

Figure 1: Participant recruitment and screening process.



- The VMOR is a sub-project of the Victorian Lung Cancer Registry (VCLR). The VMOR received ethics approval from Monash University Human Research Ethics Committee (MUHREC) and governance approval at 19 participating health services to collect data.
- 246 cases notified via the hospital administrative data, notifications sent to the VLCR.
  - Notifications are screened for eligibility (Figure 1) based on the inclusion and exclusion criteria (105 participants eligible).
  - The majority of ineligible cases (90.4%) were outside the study timeframe having been diagnosed prior to 2022.

Demographics and diagnostic indicators

65% of participants with documented history of asbestos exposure

- 105 people were diagnosed with mesothelioma were recruited to VMOR. Case ascertainment is estimated to be approximately 64% of Victorian notifications to the AMR[1].
- The majority of people diagnosed with mesothelioma were male (81%) and the median age at diagnosis was 76 years (IQR 67,82).
- Mesothelioma participants were more likely to live in metropolitan areas (70%), however 18% were from small rural towns.
- 13% of participants were from a relatively disadvantaged area (IRSAD* quintile 1).

*The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)

- 65% of participants had documentation of prior asbestos exposure in their medical record and 2.1% had a past history of radiation as other risk factors.
- 92% of participants had pleural mesothelioma, compared to 7.7% who had peritoneal mesothelioma.
- 94% of participantshad a documented histologic subtype of mesothelioma, which has both prognostic and therapeutic significance. Of these epithelioid was the most common sub-type (60%), 24% had non-epithelioid and 16% had other subtypes documented.

Figure 2: Age (years) at diagnosis

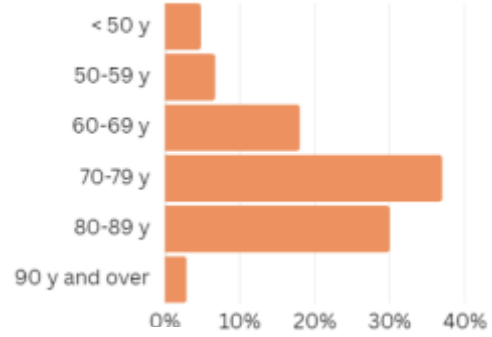


Figure 3: Documented performance score (ECOG)

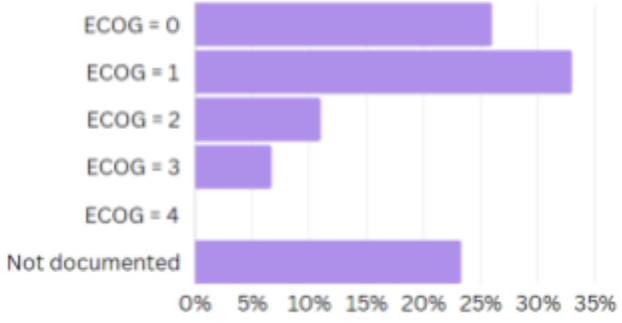


Figure 4: Type of mesothelioma

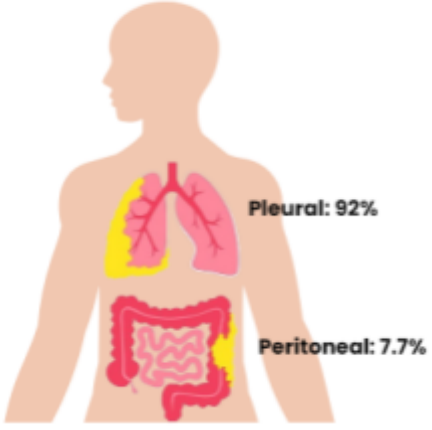
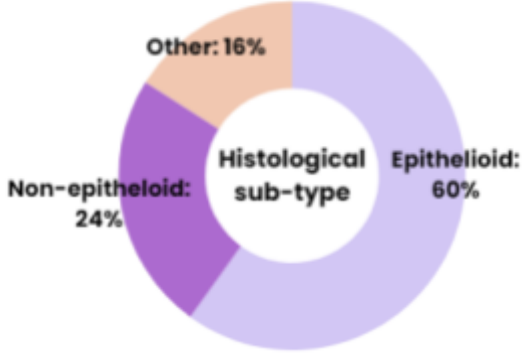


Figure 5: Histological subtype



- 59% of participants had a referral to diagnosis within 28 days ranging from 48% to 67% across Victoria.

Management and treatment indicators

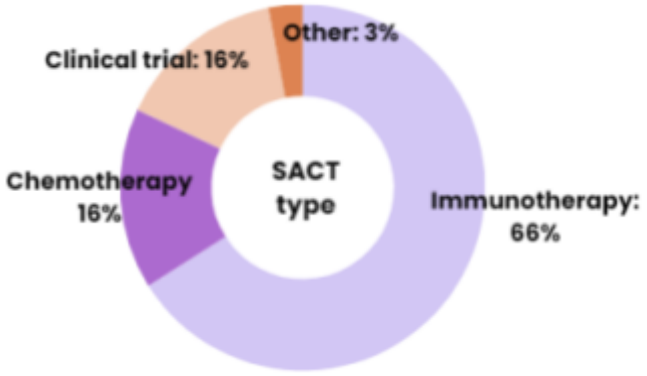
30% of participants had access to specialist cancer nurse for support

- Approximately 67% of all participants had a documented presentation at a MDM, ranging from 52% to 85% across Victoria.
- 30% of participants had access to a specialist cancer nurse for support, ranging from 33% to 69% across Victoria.
- Similarly, 28% of participants had documented supportive care screening, ranging from 3.8% to 52% across Victoria.
- For people with pleural mesothelioma, 17.7% had a record of definitive up front effusion management (with pleurodesis).

28% of participants had documented supportive care screening

17.7% of participants had definitive effusion management

Figure 6: Systemic anti-cancer therapy (SACT) received



- 69% of participants living with mesothelioma received some form of active treatment (chemotherapy, immunotherapy, radiotherapy or radical surgery).
- 59% of participants SACT, ranging from 33% to 69% across Victoria.
  - Of those who had SACT, 66% had immunotherapy, 16 % had chemotherapy, and 15% were included in a clinical trial (chemotherapy +/- immunotherapy).
- 5.7% of participants had radical surgery and 13% had radiotherapy.

Survival

- One year overall survival was 19% (95%CI: 10 to 37). Median overall survival was 7.1 months.
- One year overall survival was 30.8% (95%CI: 15.7 to 60.4) for participants receiving first-line SACT and median survival was 9.2 months.
- Survival was significantly higher for participants receiving first-line treatment compared to those who did not receive SACT (HR: 4.29, 95%CI: 2.51 to 7.32, p-value <0.001).

Figure 7: Overall survival from diagnosis date, (n=105)

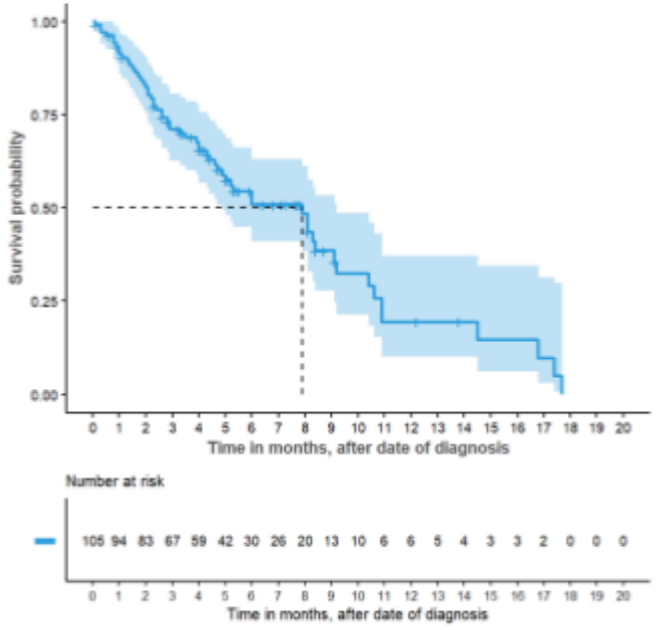
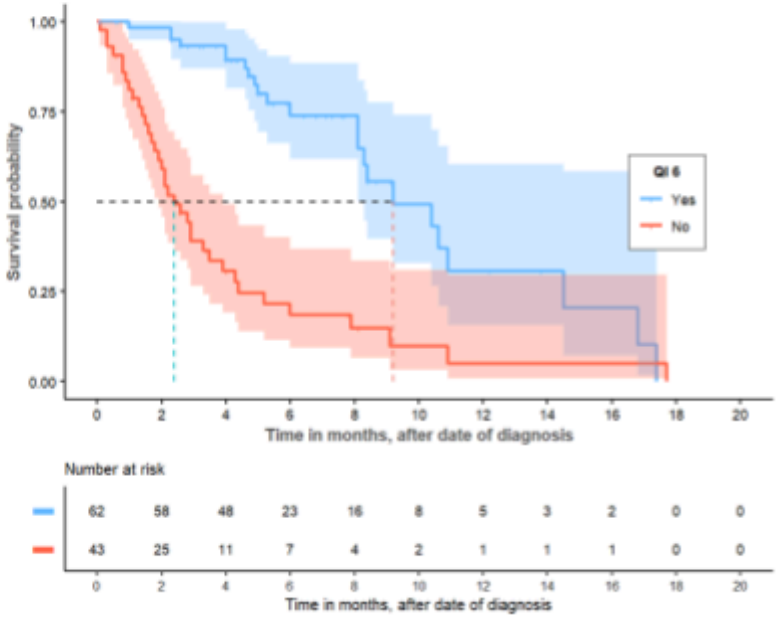


Figure 8: Overall survival stratified by receipt of first-line SACT, (n=105)



Acknowledgements

VMOR team:
Dani Samankula (Research Officer)
Sanuki Tissera (Research Assistant)
Mike Lloyd (Data Analyst)
Margaret Brand (Registry Coordinator)
Professor John Zalcberg (Academic Lead)
Associate Professor Robert Stirling (VLCR Clinical Lead)

Mesothelioma Steering Committee:

Susan Harden, John Zalcberg, Robert Stirling, Margaret Brand, Brian Healy, Karen Healy, Penelope Schofield, Vicki Hamilton (Chair of Asbestos Council of Victoria/Gippsland Asbestos Related Disease Support Inc), Ewan MacFarlane, Fraser Brims, Karen Walker-Bone, Sanjeevan Muruganandan

Bespoke Working Group:
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Clinical Quality Indicator Working Group:
Tom John, Fraser Brims, Rob Stirling, Ben Dunne, Sanjeevan Muruganandan and Susan Harden

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References

1. Australian Institute of Health and Welfare (2023) Mesothelioma in Australia 2022, catalogue number CAN 156, AIHW, Australian Government.
2. Baas P, Scherpereel A, Nowak AK, et al. First-line nivolumab plus ipilimumab in unresectable malignant pleural mesothelioma (CheckMate 743): a multicentre, randomised, open-label, phase 3 trial. Lancet. 2021;397:375–386.
3. Organising Committee. Guidelines for the Diagnosis and Treatment of Malignant Pleural Mesothelioma. Asbestos Diseases Research Institute; Sydney: 2013
4. Scherpereel A, Opitz I, Berghmans T, et al. ERS/ESTS/EACTS/ESTRO guidelines for the management of malignant pleural mesothelioma. Eur Respir J 2020; [https://doi.org/10.1183/13993003.00953-2019]
5. Harden S, Samankula D, John T, Muruganandan S, Zalcberg J, Stirling R. Victorian Mesothelioma Outcomes Registry: Establishing key clinical quality indicators that reflect optimal evidence-based care for people diagnosed with mesothelioma. 2023. The Thoracic Oncology Group of Australasia (TOGA) Annual Scientific Meeting

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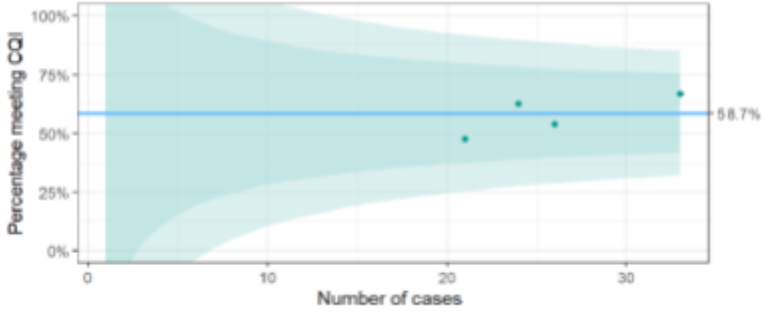
Appendix: Exploratory benchmarking for the clinical quality indicators

CQI 1: Referral to diagnosis time within 28 days
CQI 2: Documented management discussion at a multi-disciplinary meeting (MDM)
CQI 3: Documented asbestos exposure history
CQI 4: Documented histologic subtype of mesothelioma on pathology report
CQI 5: Documented performance status (ECOG)
CQI 6: Received Firstline Systemic Anticancer therapy (chemo/immunotherapy)
CQI 7: Access to cancer specialist nurse for support
CQI 8: Documented supportive care screening
CQI 9: Definitive up front effusion management

Table 1: Distribution of people living with mesothelioma by Victorian Integrated Cancer Services

Victorian Integrated Cancer Services (VICS)	VMOR Participating Health Services
Southern Melbourne Integrated Cancer Service (SMICS)	Alfred Health, Cabrini Health, Monash Health, Peninsula Health.
Western and Central Melbourne Integrated Cancer Service (WCMICS)	Peter MacCallum Cancer Centre, Royal Melbourne Hospital, St Vincent's Private Hospital, St Vincent's Public Hospital, Western Health
North Eastern Melbourne Integrated Cancer Service (NEMICS)	Epworth Health, Austin Health, Eastern Health, Northern Health.
Regional Integrated Cancer Services *	Barwon Health, Ballarat Health Services, Latrobe Regional Health, Albury Wodonga Health, Goulburn Valley Health, Bendigo Health.

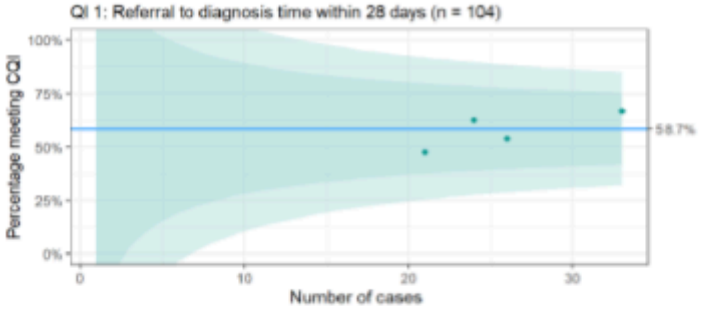
*Barwon South Western Integrated Cancer Services (BSWRICS), Grampians Integrated Cancer Services (GICS), Gippsland Regional Integrated Cancer Service (GRICS), Hume Regional Integrated Cancer Services (HICS),and Loddon Mallee Integrated Cancer Service (LMICS).



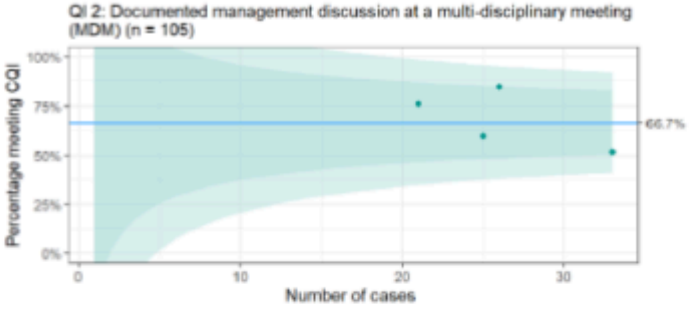
Each CQI is reported by Victorian Integrated Cancer Service (VICS) groupings (Table 1) as opposed to health service due to the sample size and should be viewed as exploratory. Each VICS grouping is represented by a dot in the graph. The solid line represents the median proportion of participants meeting the indicator. The shaded areas represent the 95% and 99.8% control limits.

Appendix: Exploratory benchmarking for the clinical quality indicators

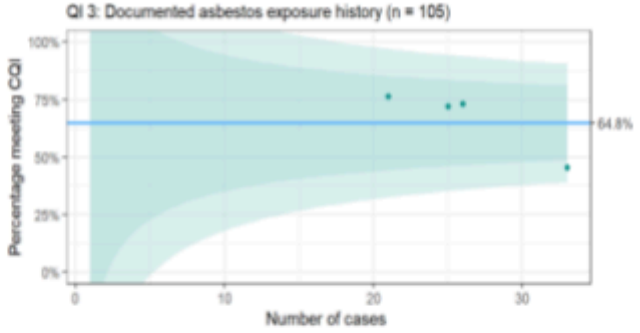
Graphs: Clinical quality indicators



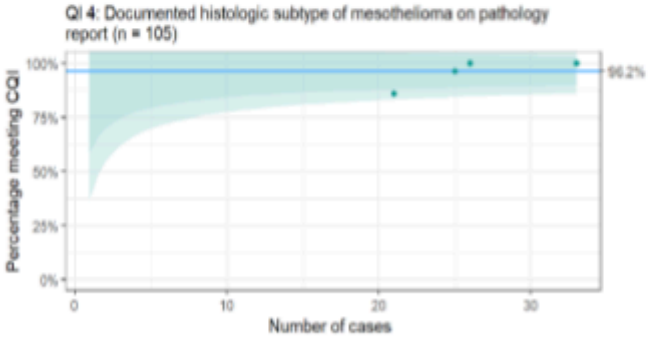
58.7% of participants were diagnosed within 28 days of referral, ranging from 48% to 67%.



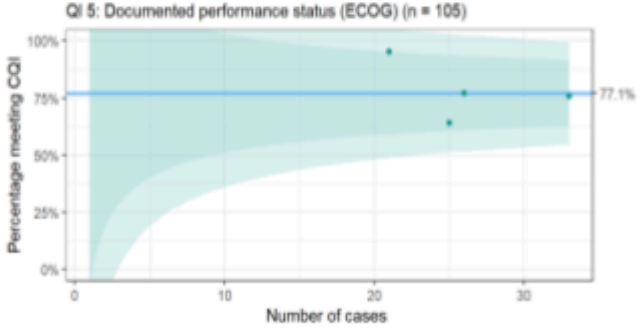
66.7% of participants had a documented multi-disciplinary meeting discussion, ranging from 52% to 85%.



64.8% of participants had documented asbestos exposure history, ranging from 45% to 76%.



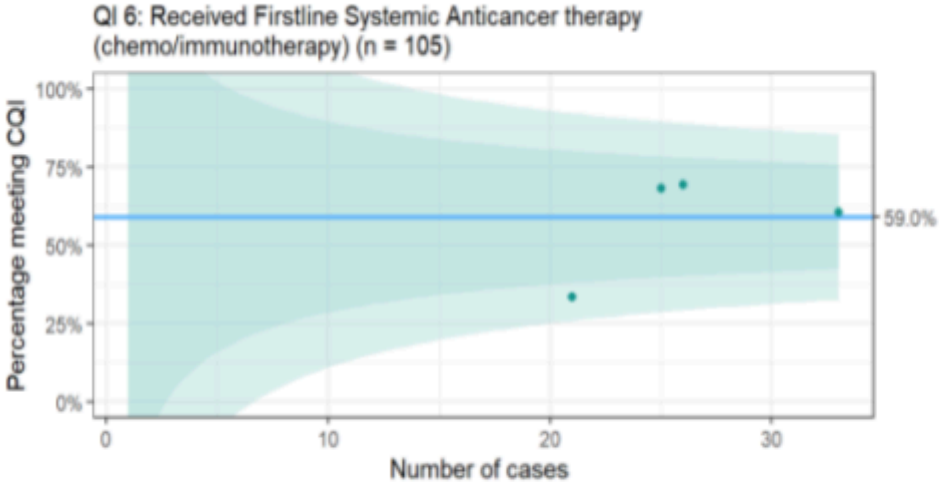
96.2% of participants had a documented histological subtype of mesothelioma, ranging from 86% to 100%.



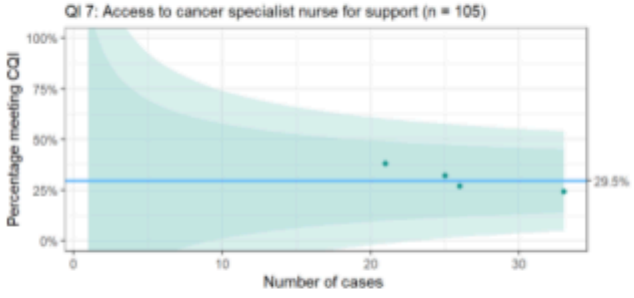
77.1% of participants had a documented performance status (ECOG), ranging from 64% to 95%.

Appendix: Exploratory benchmarking for the clinical quality indicators

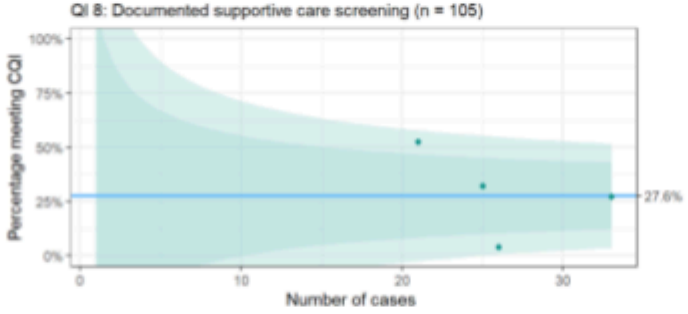
Graphs: Clinical quality indicators continued



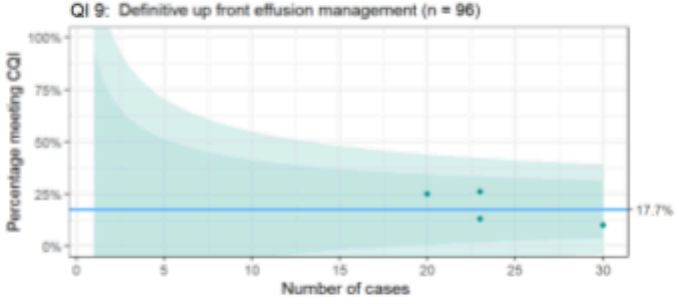
59% of participants received firstline SACT, ranging from 33% to 69%.



29.5% of participants had access to a cancer specialist nurse for support, ranging from 24% to 38%.



27.6% of participants had documented support care screening, ranging from 3.8% to 52%.



17.7% of participants had definitive up front effusion management*, ranging from 10% to 26%.

*For patients with pleural mesothelioma only. This indicator is novel.