HEPATOPANCREATICOBILIARY SURGERY

Changing patterns of care for pancreas cancer in Victoria: the 2022 Pancreas Tumour Summit

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Abstract

Background: The Victorian Government convened the second Pancreas Cancer Summit in 2021 to identify unwarranted variation in care 2016–2019, and to assess trends compared with the first Summit 2017 (reporting 2011–2015). State-wide administrative data were assessed at population level in alignment with optimal care pathways across all stages of the cancer care continuum.
Methods: Data linkage performed by Centre for Victorian Data Linkage combined data from Victorian Cancer Registry with other administrative data sets including Victorian Admitted Episodes Dataset, Victorian Radiotherapy Minimum Data Set, Victorian Emergency Minimum Dataset and Victorian Death Index. A Cancer Service Performance Indicator audit was carried out providing an in-depth analysis of identified areas of interest.
Results: Of 3138 Victorians diagnosed with pancreas ductal adenocarcinoma 2016–2019, 63% were metastatic at diagnosis. One-year survival increased between time periods, from 29.7% overall 2011–2015 (59.1% for non-metastatic, and 15.1% metastatic) to 32.5% overall 2016–2019 ($P < 0.001$), 61.2% non-metastatic ($P = 0.008$), 15.7% metastatic ($P = \text{NS}$). A higher proportion of non-metastatic patients progressed to surgery (35% vs. 31%, $P = 0.020$), and more received neoadjuvant therapy (16% vs. 4%, $P < 0.001$). Postoperative mortality following pancreatectomy at 30 and 90 days remained low at 2%. Utilization of 5FU-based chemotherapy regimens increased between 2016 and 2020. Multidisciplinary Meeting (MDM) presentation was still below the 85% target (74%) as was supportive care screening (39%, target 80%).
Conclusions: Surgical outcomes remain world-class and there has been an appropriate shift in chemotherapy administration towards neoadjuvant timing with increasing use of 5FU-

based regimens. MDM presentation rates, supportive care and overall care coordination remain areas of deficiency.

Introduction

The Victorian Tumour Summits are a Victorian Integrated Cancer Services (VICS) initiative in collaboration with Victorian Government Department of Health (DH) and Cancer Council Victoria (CCV). They are clinician-led forums to identify unwarranted variation in care and deviation from Optimal Care Pathways[1] developed in conjunction with VICS and DH for Victorian patients with cancer diagnoses.

The first Victorian Pancreas Summit was held in 2017[2] and a repeat Summit planned for 2021 (subsequently delayed by the COVID-19 pandemic) was ultimately held online on 26 August 2022. Data presentation followed by break-out group sessions exploring variations in care were coordinated and facilitated to identify key summit priorities to inform future health initiatives.

The aim of this manuscript is to present key outcomes and changing practices between the current reporting period (2016–2019) and the prior summit period (2011–2015), along with Summit recommendations regarding important areas for future attention.

Methods

Data sources

The Victorian Cancer Registry (VCR) is a population-based registry collecting demographic and tumour details for all Victorians diagnosed with cancer. The Centre for Victorian Data Linkage (CVDL) within Victorian Department of Health (DH) performs annual data linkage between VCR and administrative datasets including Victorian Admitted Episodes Dataset (VAED), Victorian Radiotherapy Minimum Data Set (VRMDS), Victorian Emergency Minimum Dataset (VEMD) and Victorian Death Index (VDI). Linking VCR with VAED provides information on cancer treatment including all surgery and intravenous chemotherapy delivered at inpatient Victorian public and private hospitals and linkage to VRMDS provides information on radiotherapy treatments. Deaths were identified by linkage to Victorian and National Death Index. CCV Human Research Ethics Committee provided ethics approval 1412 for this study.

Patients

Victorian residents aged ≥18 years with a primary diagnosis of pancreatic ductal adenocarcinoma (PDAC) between 2011 and 2019 were identified from VCR. Patients were excluded where they were diagnosed by death certificate only. Analysis compared two time periods, 2011–2015 and 2016–2019.

Comorbidities were extracted from diagnosis codes of admitted episodes in the year prior to 1 month after a patient's cancer diagnosis date and classified using the Charlson comorbidity index (CCI).[3] Comorbidity scores were grouped into three categories of increasing severity (0, 1 and 2+).

Patients were considered 'metastatic at diagnosis' if pathology reports received by VCR indicated metastatic disease or if any hospital admission within 4 months of diagnosis included ICD-10-AM metastatic disease or palliative care codes. No other staging data were available from the VCR.

Socio-economic status (SES) was defined using Index of Relative Socioeconomic Disadvantage (IRSD). IRSD scores by Statistical Area 1 (SA1; an area with average population size of 400) were obtained from Australian Bureau of Statistics and assigned using patient's residential address at time of cancer diagnosis. Scores were grouped into quintiles (1-most disadvantaged, 5-least disadvantaged).

Cancer service performance indicator audit

Following the Pancreatic Summit 2017, a deep-dive audit was conducted on all pancreatic cancer patients to obtain a more complete idea of the state of multidisciplinary meetings (MDM) in Victoria, as part of the cancer service performance indicator (CPSI) audit. This deep dive has been conducted twice, on diagnoses in 2017 (following the previous summit) and on diagnoses in 2020 (in preparation for the 2021 summit). For these audits, all pancreatic cancer patients (PDAC and non-PDAC) who were newly diagnosed and treated in 2017 or 2020 were audited. Patients were identified through surgical and chemotherapy episodes in VAED, and hence the total number audited is not reflective of the total number of newly diagnosed pancreatic patients in 2020.

Statistical methods

Patient demographics, tumour and treatment characteristics were summarized using descriptive statistics including counts and proportions for categorical variables and mean, standard deviation (SD), median and interquartile range (IQR) for continuous variables.

Age-standardized incidence was calculated for each ICS region of residence and overall by sex, year and SES using the direct method. Rates were standardized to World Standard Population and expressed as diagnoses/100 000 population.

Median and overall survival at one-year post-diagnosis was estimated using Kaplan–Meier methodology. A Cox proportional hazard model was used to estimate hazard ratios for the association between risk of death and ICS of residence, stratified by age, sex, comorbidity score and SES. Survival time was calculated from date of diagnosis to date of death from all causes. The assumption of proportional hazards was not violated.

All analyses were performed in R (v3.6.3).

Results

Data analysis was conducted comparing two time periods, 2011–2015 (5-year period) and 2016–2019 (4-year period). All analyses were restricted to PDAC unless otherwise specified.

Demographics

In 2011–2015, there were 3293 Victorians diagnosed with PDAC, and in 2016–2019 there were 3138 diagnoses. Median age at diagnosis was 73 years for both time periods (range (20–102) for both time periods). The sex distribution of PDAC was roughly equal (53% males in 2011–2015, 51% males in 2016–2019). A quarter of Victorians with PDAC were in the most disadvantaged SES quintile for both time periods (26% for 2011–2015, 25% for 2016–2019). 57% of Victorians with PDAC had a CCI of zero in 2011–2015 compared with 53% in 2016–2019.

The proportion of Victorians with PDAC who were metastatic at diagnosis decreased between time periods, from 67% to 63% ($P = 0.001$).

Age-standardized incidence for PDAC was 6.7 patients/100 000 (95% CI 6.5–7.0) in 2011–2015 and 7.0 (95% CI 6.8–7.3) patients/100 000 in 2016–2019.

Survival

One-year overall survival for PDAC increased between time periods, from 29.7% (95% CI 28.2–31.3) in 2011–2015 to 32.5% (95% CI 30.9–34.2) in 2016–2019 ($P < 0.001$). For non-metastatic PDAC, survival was 59.1% (95% CI 56.3–62.1) in 2011–2015 and 61.2% (95% CI 58.4–64.0) in 2016–2019 ($P = 0.008$). For metastatic PDAC, survival was 15.1% (95% CI 13.7–16.7) in 2011–2015 and 15.7% (95% CI 14.1–17.3) in 2016–2019 ($P = 0.361$).

The median survival for patients with metastatic PDAC was 2.7 months (95% CI 2.2–3.0 m) in 2011 and 3.3 months (95% CI 3.0–3.8 m) in 2019. For non-metastatic PDAC the median survival was 13.3 months (95% CI 11.9–14.9 m) in 2011 and 15.5 months (95% CI 13.9–18.1 m) in 2018. There was no statistically significant change in the median survival for either metastatic or non-metastatic patients.

When comparing the two full time periods, median survival for patients with metastatic PDAC was 3.1 months (95% CI 2.9–3.4 m) for patients diagnosed in 2011–2015 and 3.3 months (95% CI 3.1–3.5 m) for patients diagnosed in 2016–2019. For non-metastatic PDAC the median survival was 14.5 months (95% CI 13.7–15.8 m) for patients diagnosed in 2011–2015 and 15.4 months (95% CI 14.4–16.7 m) for patients diagnosed in 2016–2019.

Treatment for non-metastatic patients

Of all patients diagnosed as non-metastatic in 2016–2019, 35% underwent pancreatectomy, an increase of 4% from 2011 to 2015 ($P = 0.020$), (Fig. S1). The proportion of surgically treated patients receiving neoadjuvant chemotherapy increased between time periods from 4% to 16% ($P < 0.001$). A similar proportion of patients proceeded to adjuvant chemotherapy and/or radiotherapy (77% and 76% for 2011–2015 and 2016–2019, respectively, $P = 0.909$).

There was no change seen in the proportion of non-metastatic PDAC patients who were treated with chemotherapy and/or radiotherapy alone (32% and 33% for 2011–2015 and 2016–2019, respectively, $P = 0.623$) however, the proportion receiving no active treatment has decreased by 6% from 37% to 31% over the same period.

Perioperative outcomes

Median length of stay (LOS) following any pancreatectomy remained unchanged at 13 days (IQR = 10–19 days for 2011–2015 and 9–20 days for 2016–2019). 30-day mortality following any pancreatectomy was 3% in 2011–2015 and 2% in 2016–2019 ($P = 0.375$). 90-day mortality was 4% in 2011–2015 and 2% in 2016–2019 ($P = 0.420$).

Median LOS following pancreaticoduodenectomy remained unchanged at 14 days (IQR = 10–20 days for 2011–2015, 10–22 days for 2016–2019), albeit with a number of outliers. The median LOS for regional ICS tended to be higher than metro ICS (Fig. 1). 30-day mortality following pancreaticoduodenectomy was 3% in 2011–2015 and 1% in 2016–2019 ($P = 0.296$). 90-day mortality was 4% in 2011–2015 and 2% in 2016–2019 ($P = 0.375$).

Surgery volumes

The median annual pancreatic surgical volume for Victorian hospitals between financial years 2017–2021 was 14 (Fig. 2b), which was higher than the median annual surgery volume of 7 for financial years 2010–2016 (Fig. 2a). The number of pancreatectomies for all indications conducted in low volume health services decreased between time frames. The number of hospitals performing three or fewer pancreatectomies annually decreased from 16 health services in calendar years 2014–2015 performing a total of 39 resections over the 2-year period to 10 health services in calendar years 2020–2021 performing a total of 17 pancreatic resections over the 2-year period.

For pancreaticoduodenectomy, the median annual volume for Victorian hospitals between financial years 2017–2021 was 10 (Fig. 3b), which was higher than the median annual surgery volume of 6 for financial years 2010–2016 (Fig. 3a). The number of hospitals performing three or fewer pancreaticoduodenectomies annually decreased from 7 health services in calendar years 2014–2015 performing 27 resections over the 2-year period to 4 health services in calendar years 2020–2021 performing a total of 15 pancreaticoduodenectomy resections over the 2-year period.

Multi-disciplinary meeting presentation

The state-wide average for documented MDM discussion from the CSPI audits was 73.9% (95% CI 68.7–78.5%) in 2017 and 73.5% (95% CI 68.6–77.9%) in 2020. Only one of eight ICS achieved the current DH target rate of 85% in both time periods.

Supportive care screening

The CSPI audits indicated that documented evidence of supportive care screening in medical records decreased between 2017 and 2020. The state-wide average was 38.9% (95% CI 33.6–44.5%) in 2017 and 35.6% (95% CI 30.7–40.8%) in 2020. Only one of eight ICS achieved the current DH target rate of 80% in both 2017 and 2020.

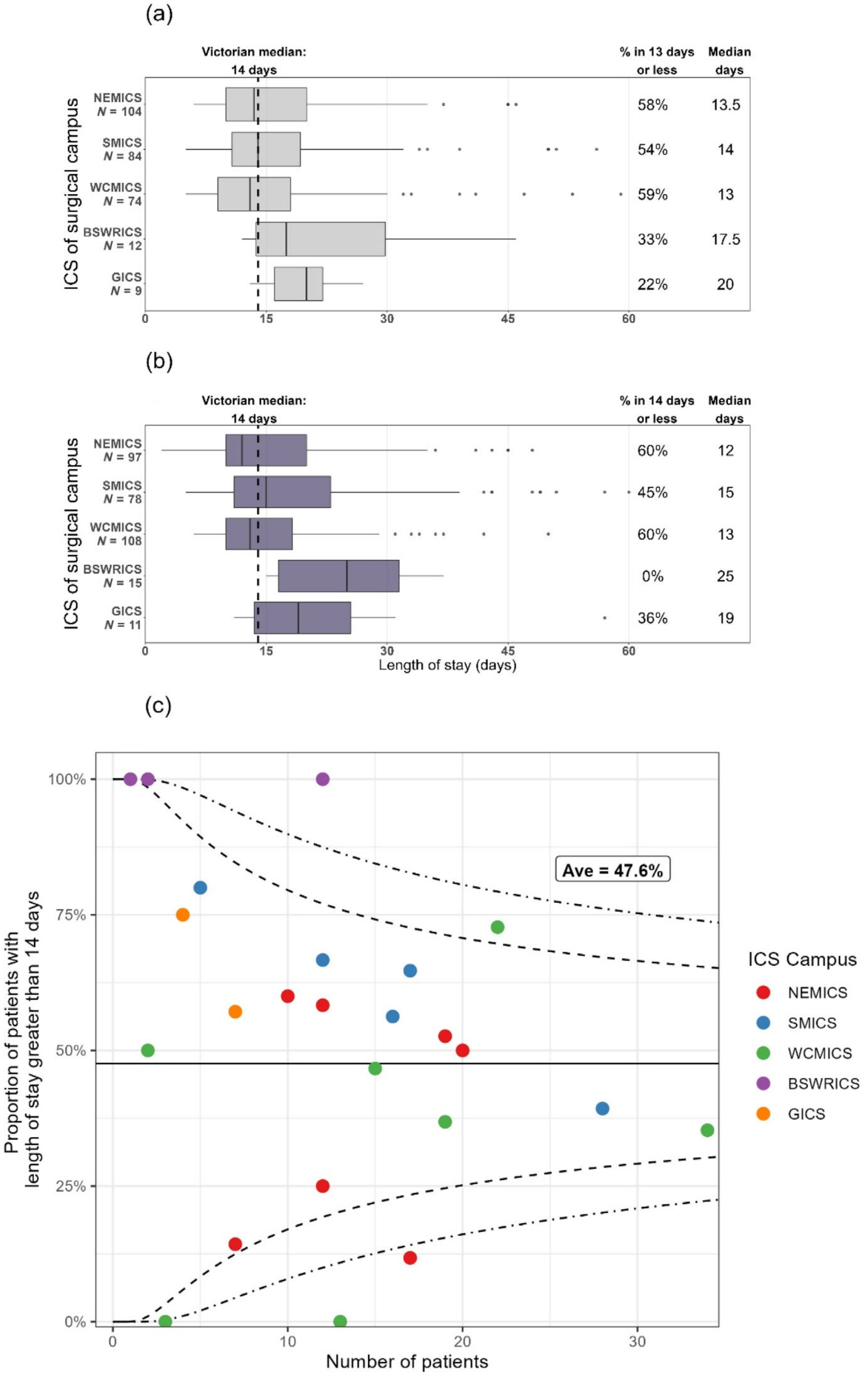


Fig. 1. Length of stay following pancreaticoduodenectomy for patients diagnosed in 2011–2015 (a), and for patients diagnosed in 2016–2019 (b). The proportion of patients with length of stay greater than 14 days by surgical campus, for patients diagnosed in 2016–2019 (c).

Resectability

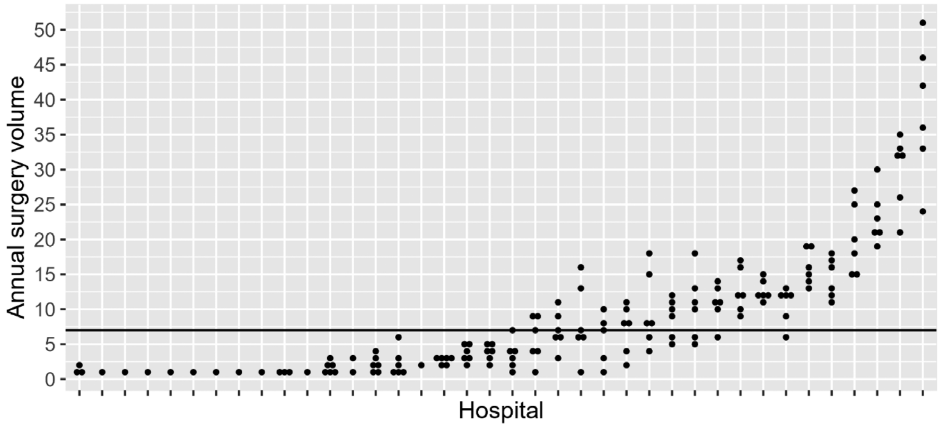
CSPI audit data from 2020 showed variation in the recording of resectability by ICS (where ICS is assigned by campus not patient location). Over 19% of patients from SMICS, WCMICS, and regional ICS (all regional ICS combined) had unknown resectability.

Excluding those with unknown resectability, the average proportion of resectable patients was 29.1% (95% CI 24.1–34.7%) and the average proportion of borderline resectable patients was 13.7% (95% CI 10.1–18.2%).

Treatment for metastatic patients

For metastatic patients, there were no dramatic changes in the 3 main treatment pathways between the two time periods (Fig. S2). 43% of patients received chemotherapy and/or radiotherapy but no surgery in 2016–2019 period (44% in the 2011–2015, $P = 0.970$). There was a lower proportion who received surgery at 2% in 2016–2019 decreased from 4% in 2011–2015 ($P = 0.003$). The remaining 55% in 2011–2015 and 53% in 2016–2019 had no surgery, chemotherapy or radiotherapy ($P = 0.282$).

(a) 2010–2016



(b) 2017–2021

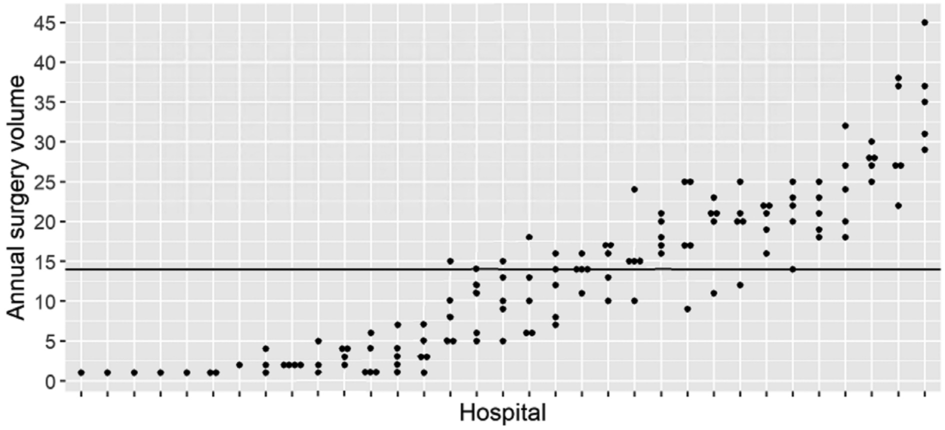


Fig. 2. Annual pancreatectomy resection volume between financial years 2010–2016 (a) and financial years 2017–2021 (b). Each dot represents a year. Years where volume was equal to zero have not been included. The line represents the median annual volume for this time period. Data source – VAED.

For metastatic PDAC patients who did not have anti-cancer therapy, 96% died within 1 year of diagnosis, unchanged from 2011 to 2015.

For metastatic PDAC patients who had surgery, 24% died within 1 year of diagnosis, a reduction from 51% in 2011–2015 (2016–2019: $n = 10/41$, 24%; 2011–2015: $n = 41/81$, 51%).

Patterns in chemotherapy administration

The distribution of time between the first two chemotherapy admissions highlighted two clear peaks at 7 and 14 days, (Fig. 4a). It is inferred from the distribution of the peaks, that the use of weekly gemcitabine chemotherapy (usually administered days 1, 8, 15 with a 28-day cycle) was more commonly used than the fortnightly combination 5FU-based regimen. Based on this assumption, there was a trend towards increased use of combination 5FU-based chemotherapy regimens between 2016 and 2019, whereas rates of gemcitabine-based regimens remained static (Fig. 4b).

End of life care

The 2020 CSPI audit showed 52% of patients were referred to or received palliative care at any time post-diagnosis. This proportion was highest for metastatic patients (73%), followed by 51% for locally advanced and 18% for early stage.

Timely palliative care was defined as in-patient palliative care at least 3 months prior to death. For 2016–2019, the proportion was 11.6% which is well below the benchmark of 80% based on recommendations from ‘Report of VICS Palliative Care and Advance Care Planning Project’ (unpublished, available online at https://www.vics.org.au/our-work).

Consumer driven targeted areas identified at summit

Consumers are important contributors in setting healthcare objectives, and discussion at the Summit focussed on two areas of consumer-based interest.

First, care coordination and supportive care screening were echoed as important areas of deficiency, and areas where significant variation in care exists. Only just over a third of patients are screened formally for their supportive care needs (36% in 2016–2019 cohort), and this number has fallen compared with the earlier summit where it was 39%.

Second, a greater consumer interest in genomic sequencing was voiced. In particular, bringing the technology into routine clinical

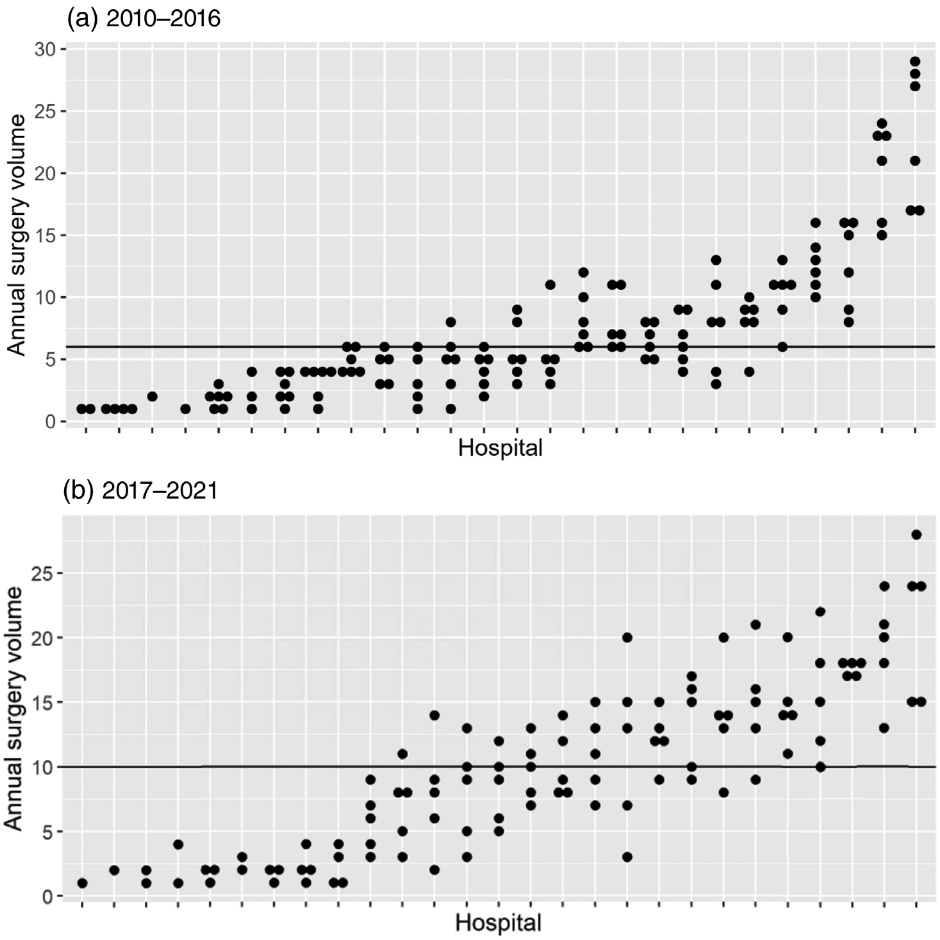


Fig. 3. Annual pancreaticoduodenectomy resection volume between financial years 2010–2016 (a) and financial years 2017–2021 (b). Each dot represents a year. Years where volume was equal to zero have not been included. The line represents the median annual volume for this time period. Data source – VAED.

practice rather than as a research tool or as an extension of academic activities was recognized as important in optimizing care and delivering world-class diagnostic processes and treatments. This is recommended as standard of care by the NCCN for patients with advanced disease.[4]

Discussion

Changing patterns of care

Systemic therapy

As discussed at the previous Pancreas Summit 2017, PDAC is almost always a systemic disease at diagnosis. Despite this, previously 23% of patients treated with planned curative intent undergoing surgical resection never received adjuvant systemic chemotherapy post-operatively.[2] This was identified as a major area of clinical interest at the previous Summit and further targeted work was undertaken by the ICS to understand this in more detail.

The current data at first appears to be unchanged, with the rate of adjuvant therapy remaining static at 24%. However, systemic chemotherapy may be administered before or after surgery, and there has been increasing global interest in treatment delivered preoperatively in the neoadjuvant context following the publication of a number of trials showing benefit, particularly in those patients considered borderline resectable at diagnosis.[5] Equally, regimen choice is shifting globally with more interest in 5FU-based regimens such as FOLFIRINOX and this is reflected in the changing patterns of care seen in Victoria in this time period.

Regarding neoadjuvant therapy administered during the previous Summit period (2011–2015), the rate was very low at 1.5% for all non-metastatic patients, and only 4% of those proceeding to surgical resection were treated with neoadjuvant intent. The current data (2016–2019) demonstrates a significant rise in the proportion of patients undergoing surgical resection who are treated with chemotherapy delivered with neoadjuvant intent preoperatively at 16% ($P < 0.001$). This is a major change in the pattern of care delivered to patients.

Underpinning treatment with neoadjuvant therapy is the accurate identification and classification of patients with non-metastatic PDAC as ‘borderline resectable’, who are therefore eligible for neoadjuvant therapy. Following the previous Summit, it was identified that there was no state-wide agreement on the definition of what constituted borderline resectable PDAC and this was seen as an important potential source of variation in care. Indeed, at the time there was no worldwide agreement on the definition with many

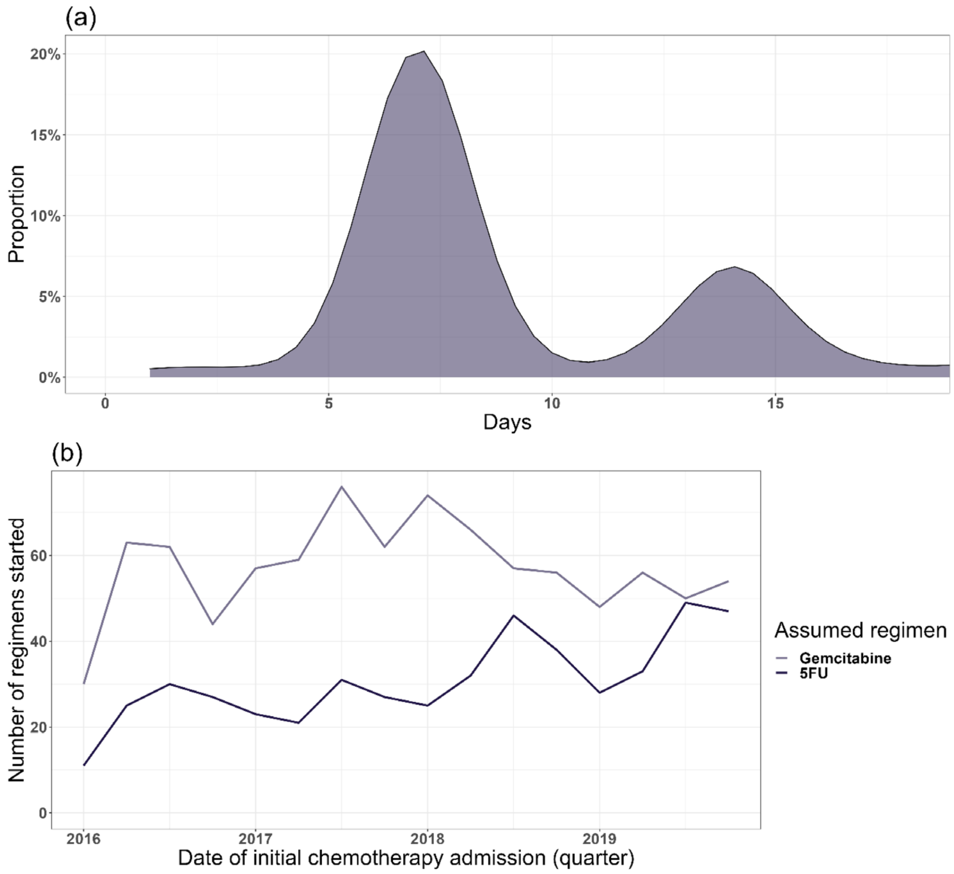


Fig. 4. Distribution of time between the first two chemotherapy hospital admissions to infer chemotherapy regimen (a) and the trend in chemotherapy regimen utilization for regimens that commenced in 2016 to 2019 (b). For (b), regimens were assumed to be Gemcitabine where there were 10 days or less between the first two chemotherapy admissions, and 5FU where the time between was 11 days or more.

competing (but broadly similar) guidelines in existence and use across centres treating PDAC.[6]

As a result of this, in 2019 DH through the VICS network convened a steering committee and working party to agree on, and adopt, a statewide definition of borderline resectable PDAC.

Fortuitously in 2018, an International Consensus on the definition and criteria for borderline resectable PDAC was published[7] and the group quickly agreed to adopt this definition. From this work, a synoptic CT scan report was developed and piloted at The Alfred and Austin hospitals.[8] This is now being expanded as a stepped wedge randomized clinical trial nationwide to further characterize whether this synoptic report increases the rate of documentation of borderline resectable PDAC, and secondarily leads to changes in patterns of care across Australia.

The process by which an administrative data set such as that presented at the Pancreas Summit can identify variations in care, and deficiencies in our understanding of treatment patterns for pancreas cancer, leading to clinician-led, government-supported projects such as this, highlights the value of such an approach to cancer care on a whole-of-population level. A valuable partnership between treating clinicians and administrative data-custodians holding statewide level data of this nature is to be commended and encouraged.

MDM discussion

Another area identified as suboptimal at the previous Pancreas Summit was the rate of presentation at MDMs. Optimal care pathways recommend all patients be presented for discussion, and a state-wide target of 80% had been set by DH. Previous Summit data demonstrated many hospital networks falling well short of this mark during an audit 2013–2015 with rates between 36% and 96%, and a statewide average of 70%.[2] The current data are essentially unchanged with an average of 73% of patients presented at the 2022 Pancreas Summit.

With pancreatic cancer MDMs being conducted as a primarily surgeon-led forum, many patients with known metastatic PDAC are not presented. With more than 60% of patients having metastatic PDAC at diagnosis, the time required to discuss this significantly increased volume of patients would be very considerable and remains an unresolved challenge.

MDM redesign considerations

The current MDM format at many hospitals focusses on surgical decision making and pathology review, with minimal if any input (or even attendance) from palliative care physicians or other allied health professionals.

While patients with metastatic PDAC likely do not require surgical review, they likely still benefit from a multi-disciplinary discussion between clinicians, for consideration of inclusion in clinical trials for metastatic disease and supportive care needs beyond inpatient surgical care.

To discuss this higher number of patients, it was proposed the constitution of a second ‘metastatic MDM’ held separately be considered comprising clinicians who treat this stage of the disease. It would be expected this group would require less input from radiology and surgeons and this solution would therefore be less resource intensive than attempting to incorporate all patients with PDAC for discussion at a single meeting.

Palliative care

Palliative care is recognized as an integral component of care provided for PDAC patients, especially considering the high number of patients with metastatic disease at diagnosis, and poor long-term survival of all patients with PDAC. The previous Summit identified a broad lack of data in this sphere, and appreciated this was an area of deficiency in our understanding of treatment patterns for PDAC.

New data available since the last summit

New data sources have become available to help describe patterns of care, however information on community-level care remains deficient. It is possible many patients first contact with palliative care is in the community setting, and the following discussions need to be tempered with this fact.

With this caveat in mind, higher proportions of patients with metastatic or locally advanced disease are seen by palliative care specialists at any point compared to those with earlier stages of disease, however only 11.6% of patients are seen more than 3 months prior to death. Earlier referral to palliative care remains an important area for future focus.

Methods to improve palliative care referral

Multiple clinical trials demonstrate the benefits of early palliative care for patients, including improved symptom management, quality-of-life and care satisfaction; reduced rates of hospitalization and emergency department presentations, and for family carers, improved quality-of-life and care satisfaction.[9–14] Despite these documented benefits in practice ‘early’ palliative care referrals are not routine and when they do occur, are often very late in the illness.[15]

There remains a significant evidence-practice gap associated with the implementation of early palliative care into routine cancer care. Barriers to palliative care referral have been identified, including: uncertainty over ‘best time’ to refer, fear of destroying patient hope associated with perceptions of palliative care, concerns about difficulty of referral and service organization and resources.[16,17] New models of care are required to bridge the gap between evidence and practice. ‘Care-Plus’ is one such model,[18] with the intention of changing practice such that routine early introduction of palliative care becomes standard. Trigger points (‘incurability’ secondary to metastatic or unresectable disease in the case of PDAC) activate referral to palliative care *by default* once patients cross that point in their illness. Care-Plus consists of (at minimum) three outpatient palliative care appointments for the first month, a dedicated case conference with the patient’s general practitioner, then ongoing Care-Plus appointments at the discretion of patient and clinician.

This concept addresses clinician uncertainty about when to refer, and who should be referred while simultaneously breaking down barriers associated with patient acceptance and structural issues regarding palliative care service delivery in inpatient versus outpatient settings.

The consumer voice

Consumer input at the Pancreas Summit aligned with clinicians concerns regarding deficiencies in supportive care screening and care-coordination.

Supportive care screening

Screening remains an area of deficiency despite the well-recognized ‘tsunami of unmet needs’.[19] Pancreas cancer patients suffer a high symptom burden, particularly in locally advanced and metastatic settings, and formally screening to identify and refer where appropriate these patients surely remains an area of unmet need.

Recent research into the landscape of supportive care (SC) in pancreatic cancer in Victoria has highlighted several gaps and opportunities for improving access to and quality of supportive care. A population-level analysis of SC service use across Victoria in a cohort of 9968 patients with pancreatic cancer identified that most inpatient SC services are minimally utilized, have lengthy time periods to access and vary according to disease stage and treatment pathway (manuscript in submission). This is particularly concerning as qualitative interviews with patients and caregivers have highlighted unmet supportive care needs are prevalent in pancreatic cancer and a strong desire for higher-quality and more timely supportive care. Ways to improve quality of supportive care, from the lens of patients and caregivers, include having access to cancer care coordinators across the care continuum, personalized and culturally appropriate dietetic support and emotional support for caregivers.[20] There is also opportunity to facilitate timely access to specialist palliative care. An analysis of first episodes of specialist palliative care across Victoria for patients diagnosed with pancreatic cancer between 2014 and 2020 (2890 episodes) revealed that the majority (45%) of first episodes began in a deteriorating phase and 32% ended in death. Unwanted variations in access to specialist palliative care were also apparent for patients residing in regional areas and those from a culturally and linguistically diverse (CALD) backgrounds particularly with limited English Proficiency. Greater investment in clinical trials exploring supportive care-related interventions may improve accessibility to and quality of supportive care. However, a review of clinical trials in pancreatic cancer highlighted that only 5% (7/136) of trials recruiting across Australia investigated a SC intervention, demonstrating a significant gap in our research agenda.[21]

Pancreas cancer care coordinators

Formal care-coordination by a designated member of the MDM employed for that purpose was also voiced by consumers as a critical area of need. When present, these coordinators facilitate timely access to care in all forms of disease, from earlier referral to specialist and supportive care services, to expediting necessary diagnostic tests and treatments. They may also facilitate earlier palliative care involvement and streamline MDM processes, ensuring more patients are discussed in a timely manner.

Indeed, many tumour streams not just pancreatic, continue to voice strong support for the establishment and ongoing funding of care coordinator roles across all forms of cancer care in Victoria. The Australian National Pancreatic Cancer Roadmap (Cancer Australia. National Pancreatic Cancer Roadmap: Australian Government; 2022 (available from: https://pancreaticroadmap.canceraustralia.gov.au/)) has identified the 'improvement of patient navigation and care coordination at point of diagnosis for patient support' as a key priority area.

Conclusion

Pancreas cancer remains a challenging disease but it is extremely pleasing to demonstrate improvements in the delivery of care in Victoria, most notably evidenced by significantly higher rates of neoadjuvant therapy delivered to non-metastatic patients (rising to 16% from 4%), and higher one-year survival for both metastatic and non-metastatic cohorts (to 32.5% and 61.2%, respectively, from 29.7% and 59.1%). A shift towards higher rates of combination 5FU-based chemotherapy is also commendable. Methods to address greater presentation at MDM and more timely access to a greater number of patients to palliative care remain challenges. Developing and establishing dedicated care coordinators to accomplish both these roles, as well as providing better supportive care screening and facilitating timelier access to diagnostic and treatment modalities represents a critical opportunity for improving outcomes and optimizing care into the future.

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Conflict of interest

None declared.

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Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Supplementary Figure S1. Treatment pathway within 1 year of non-metastatic PDAC diagnosis, for patients diagnosed in 2016–2019

Supplementary Figure S2: Treatment pathway within 1 year of metastatic PDAC diagnosis, for patients diagnosed in 2016–2019. ('prev %' refers to the percentage of patients receiving this form of treatment in the previous time period 2011–2015)