

Designing and implementing a bundle of care for patients with early-stage breast cancer: lessons from a pilot program

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ABSTRACT

We present a case study on the design and implementation of a value-based bundled package of care for patients with early-stage breast cancer treated in the private health sector in Australia. Value-based healthcare is an essential change to how we deliver healthcare, shifting the focus from paying for individual services provided to a focus on the health outcomes gained over a full cycle of care. The Australian health system has unintentionally created barriers to value-based cancer care through fragmented care pathways and complex funding arrangements where patients can unexpectedly encounter high out-of-pocket costs. A team of clinicians, service providers, health systems and funding experts, private health insurers and consumers have collaborated to design and pilot a complete bundled package of care for breast cancer patients which aims to address these challenges. With 40 patients recruited to date, early evaluation results show positive patient experience of ‘joined-up’ care and financial transparency. This case study provides a high-level overview of the approach taken to design and implement the Breast Cancer Bundle and the lessons learned for its expansion in both public and private settings.

Keywords: breast cancer care pathway, bundle of care, coordinated care, patient experience, patient navigation, value-based models of care.

Introduction

Value-based healthcare is an essential change to how we deliver healthcare. ‘Value’ has been described as shifting the focus from paying for the care provided to improving the health outcomes gained.^{1,2} Porter¹ also asserts that patient value is created over a full cycle of care, not just in one service or hospital admission. To accomplish this, two key components must be implemented. First, health systems need to be realigned for models of care that encompass the full cycle of care from diagnosis to recovery, rather than a series of short episodes. Second, patient-level cost and outcomes data must be captured to know whether value is being created.

Patients diagnosed with cancer can particularly benefit from value-based models of care. Cancer treatments are complex, requiring patients to transition between multiple healthcare professionals across diverse settings over an extended period of time.³ Cancer patients frequently report their care to be disjointed, a cause of stress and at times adverse outcomes.^{4,5} Supporting patients to navigate the cancer treatment pathway is therefore critical. A recent review of international evidence highlights the positive impact a dedicated patient navigator can have on a patient’s quality of life and their satisfaction with care, and is cost-effective in some scenarios.⁶

Cancer patients also report the large financial burden that a cancer diagnosis can place on them, through both indirect costs (e.g. lost income) and the direct costs of treatment, especially the out-of-pocket expenses for care undertaken in the private health system.^{7,8} The funding arrangements for Australia's hybrid public-private system are incredibly complex and patient (and referrers) unfamiliarity with this system can mean high, and often unexpected, out-of-pocket costs.⁹ Pricing transparency over the full cycle of care is needed for patients to make informed decisions that take account of their financial circumstances, but is often lacking.^{10,11}

Optimal care pathways have defined the essential steps in cancer care and have largely been taken up in Australia;¹² however, care often remains fragmented from a patient point of view.⁴ This pilot project began in October 2019 when several champions of value-based health care came together to develop a package of care for patients newly diagnosed with early breast cancer going through treatment in the private health system in Western Australia (WA) that aimed to address these challenges that cancer patients commonly report.

The objectives of this pilot project are to:

1. **Improve patient experience** through navigation support and easy access to comprehensive services over the full cycle of care (first 12 months of care);
2. **Improve patient outcomes** through access to best-practice supportive treatments and reduced distress;
3. **Create financial transparency and certainty** on price for the full treatment pathway;
4. **Create a sustainable, scalable model** that can be expanded to other locations or cancer types with costs and outcomes measured.

To determine whether the pilot has been successful in meeting these objectives, an evaluation will be completed which will consider both patient-reported outcomes, as well as patient and provider experiences of the bundle.

Case study objectives

The objectives of this case study are to describe how we developed the Early-Stage Breast Cancer Bundle ('the Bundle'), share some early, indicative findings on patients' experience, and to share lessons learned from implementation of the pilot to date. It does not report the full findings of the interim evaluation of the Bundle.

Setting and participants

The pilot is being undertaken in WA for patients having breast surgery through St John of God, Subiaco private hospital. Inclusion criteria were defined as any patient with newly diagnosed stage 0–3 breast cancer who is referred to a

participating provider and holds appropriate private health insurance (PHI) cover with a participating insurer.

Pilot and evaluation design

A team of clinicians, service providers, health economists, health service researchers, private health insurers and consumers have collaborated on the design of the Bundle and the concurrent evaluation. Below outlines the stages involved in developing the Bundle and establishing the pilot program.

Stage 1: design, cost and price of the Bundle

We reviewed literature and consulted widely with surgeons, medical oncologists, radiation oncologists, allied health professionals, insurers and patients to define a comprehensive care pathway from diagnosis to the end of active treatment (capped at 1 year). We established a best-practice pathway (Fig. 1) for all services including allied health and psychological supports that cancer patients report is often lacking in their care.⁴ The Bundle includes a non-clinical patient navigator role to help integrate the treatment pathway.

Publicly available Medicare Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS) prices, as well as estimates of out-of-pocket costs from partner providers and private health insurers, were used to model the costs associated with the Bundle. Basic risk stratification of a high, low and average cost per patient (in terms of treatments used) was also performed. These data were used to set the transparent pricing information provided to patients.

Stage 2: confirm provider and private health insurer participation

With the care pathway and costs defined, we confirmed two private health insurers to participate in the pilot program. We identified a well-established multi-disciplinary team whose providers were committed to participating in our pilot program.

Stage 3: co-design of evaluation

An independent evaluation was co-designed with partners and embedded into the implementation of the Bundle. The study uses a multi-method prospective cohort design to evaluate the Bundle's performance against its objectives. The evaluation is collecting breast cancer-specific (International Consortium for Health Outcome Measurement – Standard Set for Breast Cancer¹³) and general (EQ-5D-5L¹⁴) patient-reported outcome measures at baseline, and at 6 and 12 months post-surgery. In addition, a cancer-specific patient experience survey, adapted from the international All.Can study,⁴ is collected on completion of active treatment (usually 9–12 months post-surgery). A comprehensive set of

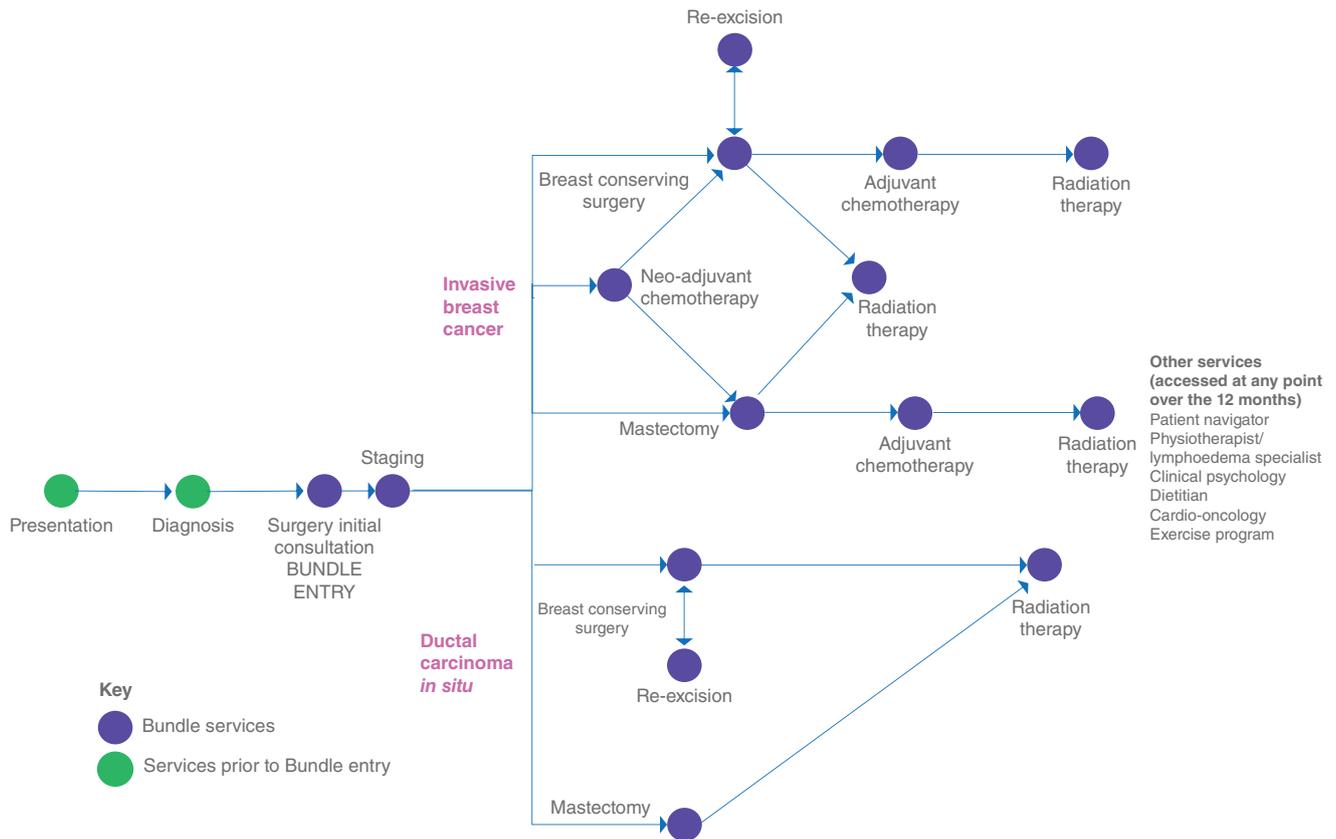


Fig. 1. Bundle care pathway.

clinical outcomes and service use data will be drawn from patients’ medical records as well as administrative and financial data from Bundle providers.

Data from women with early-stage breast cancer participating in the Continuous Improvement in Care – Cancer Project¹⁵ will allow for an evaluation of the Bundle’s performance on clinical and patient-reported outcomes against comparable patients receiving breast surgery through the same hospital. These outcomes data, together with service use and financial data from providers, means we can assess the Bundle’s sustainability and cost-effectiveness. In addition, in-depth qualitative interviews with patients, providers and private health insurers explore their experience and acceptance of the Bundle. Only early findings from the patient experience survey are presented in this case study.

Stage 4: implement Bundle pilot and evaluation

Recruitment to the Bundle began in July 2022. By December 2023, 39 patients were recruited to the Bundle. Two patients declined to participate in the evaluation, and six exited the Bundle early (for clinical exclusion reasons).

A near-complete set of patient-reported measures, clinical and service use data has been collected for 31 patients. Recruitment to the Bundle will continue through 2024.

Methods

Collection of clinical and patient-reported outcome data and interviews is ongoing and will be reported in 2025. Provided in this case study are some initial findings from the patient experience survey ($n = 27$). Due to the small sample size, only frequencies are presented. Quotes are taken directly from open text responses to survey questions.

Ethics approval for the evaluation was obtained from the St John of God Health Care Human Research Ethics Committee (ref. 1905).

Early findings

The demographics of 29 female patients participating in the evaluation are provided in Table 1. Their mean average age is 64.8 years, and nine hold a Commonwealth concession card that provides help with healthcare costs.

Early findings of the patient experience survey suggest that the Bundle is meeting two of its key objectives: (1) providing financial transparency; and (2) providing access to best-practice ‘joined-up’ care. Twenty-seven (27) patients have completed the experience survey which is collected at the end of active treatment (usually between 6 and 12

months following surgery). Of those, 26 reported that the costs and inclusions of the Bundle were explained in a way that they could understand. Preliminary results for patients' experience of the Bundle are positive (Table 2); 85% (n = 26) agreed or strongly agreed that the Bundle had reduced the financial worries of their cancer treatment, while 81% (n = 22) said it gave them access to allied health care that they would not have otherwise accessed.

Open responses to the survey, when asked what has worked and is valuable to patients, also suggest that the Bundle is on track to achieve its key objective. That is, to provide access to best practice, joined-up care:

It was great to have all the different services knowing all I had to do was turn up. (1A14)

The Bundle provided a holistic approach to my treatment. The medical team were excellent and communicated well with each other. I felt very safe and very much an individual. (1A24)

Patients' experience of the patient navigator was also reassuring. All respondents (n = 27) valued the navigator for reducing the stress of managing the multiple appointments involved in the first year of cancer treatment (Table 3); 93% (n = 25) strongly agreed or agreed that the navigator helped them understand their treatment pathway.

Table 1. Patient demographics (n = 29).

	n (%)
Age	
40–49 years	2 (7%)
50–59 years	6 (21%)
60–69 years	13 (45%)
70–79 years	8 (27%)
Education ^A	
High school	11 (40%)
Tertiary	17 (60%)
Concession card holder ^A	
Yes	9 (32%)

^AMissing n = 1.

Table 2. Patient-reported experience of the Bundle, n (%).

The Bundle...	Strongly agree	Agree	Neither	Disagree	Strongly disagree	n
...was easy to use (e.g. administration, payments)	17 (63%)	9 (33%)	1 (4%)	0	0	27
...reduced the financial worries of my cancer treatment	19 (70%)	4 (15%)	3 (11%)	0	1 (4%)	27
...gave me access to treatments I would not have paid for myself (e.g. dietitian, physio, psychologist)	17 (63%)	5 (18%)	4 (15%)	1 (4%)	0	27

When asked what they valued about the patient navigator, survey respondents commonly described reduced stress in managing the complexities of their cancer treatment.

I felt supported throughout my breast cancer journey, start to finish. [The navigator's] relationships she had built with specialists, nurses and admin meant she was the glue that held everything together... It made my journey smooth in transitioning from surgery to chemo to radiation. She helped take a lot of the stress away so I could concentrate on getting through the treatments and getting better. (1A13)

My navigator was very helpful and proactive in managing my cancer journey. At all times I was fully aware of the necessary stages of my treatments and she was always on hand to answer my questions. (1A19)

These early findings provide a snapshot of the patient experience of the Bundle. As data collection and analysis of costs and outcomes progresses, we will build a clearer picture of whether the Bundle is sustainable and provides value-based care.

Lessons learned

Australia's complex and fragmented health system, and the funding arrangements that support it, have unintentionally created barriers to providing value-based bundles of full cycles of care. Early findings from the survey indicate the value that patients have perceived in a connected, holistic package of care providing access to all of the services that they need, helping them to understand their treatment pathway and reducing the financial worries of their treatment. We have learned lessons across all stages of the Bundle's design and implementation, and we will continue to work through many of these challenges and will report more following the final evaluation that will be completed in 2025.

Partnering with providers early in designing the Bundle is critical

Ensuring early alignment between providers on the desired patient experience and outcomes of care is critical to successful implementation of a bundled package of care. We

Table 3. Patient-reported experience of the patient navigator, *n* (%).

The patient navigator...	Strongly agree	Agree	Neither	Disagree	Strongly disagree	<i>n</i>
...reduced the stress of managing appointments	17 (63%)	10 (37%)	0	0	0	27
...was valuable in liaising with doctors and other health professionals	17 (63%)	7 (26%)	2 (7%)	1 (4%)	0	27
...helped me understand my treatment pathway	19 (70%)	6 (22%)	1 (4%)	1 (4%)	0	27
...helped me understand costs	19 (70%)	7 (26%)	1 (4%)	0	0	27
...was valuable in providing emotional support	16 (59%)	7 (26%)	3 (11%)	1 (4%)	0	27

worked in partnership with providers at all stages of the design to understand and tailor the care pathway to the specific multi-disciplinary team, ensuring that patients are able to access all of the services that they will require and understand the relevant referral pathways.

Working through the financial aspects of the Bundle is complex and time consuming but important

Early findings from the survey indicate that the Bundle had reduced the financial worries of cancer treatment. When considering costs associated with care for early-stage breast cancer, we have MBS, PBS and private health insurer rebates to consider along with varying provider out-of-pocket costs which are often not well defined. MBS, PBS and PHI regulation is complex and must be well understood to design a fit-for-purpose bundle package.

Service availability can vary significantly by provider, insurer and across jurisdictions

Creating a 'one size fits all' bundle model is challenging. Replication of the Bundle in different situations will require you to be aware of differences in service availability, provider preferences and health insurer coverage to ensure that the package of care incorporates the required services and is easy for a patient to navigate.

Collecting the financial and health outcomes data needed to support value-based care is resource intensive

Providers in the private sector use different electronic medical records and accounting systems, which means collecting service use and financial data requires a large amount of manual work. Moreover, the standard schedule for the collection of patient-reported measures is onerous and questionnaires quite lengthy for patients to complete.

Conclusion

Within the private sector the need for coordinated, holistic care with greater transparency of out-of-pocket costs to improve outcomes for cancer patients is well reported.

Unfortunately, the Australian health and economic system has unintentionally created barriers to overcoming these challenges. With this pilot project, we are seeking to investigate whether we can overcome some of these challenges through development of a breast cancer care bundle which will both optimise the experience for patients undergoing cancer treatment and achieve potential savings and efficiencies for the health system.

Early outcomes from our pilot program indicate positive patient sentiment towards the Bundle; however, it is too early to draw conclusions based on the data analysed. We have received feedback on the impact that the support of the patient navigator has had on patient experience. We have seen earlier engagement with allied health providers, in particular with clinical psychologists, and patients have reported that the upfront transparency in pricing reduced the financial worries of their treatment.

The discussion around how to improve care pathways for patients with cancer is live in Australia, and optimal care pathways have been defined which incorporate the concept of care coordination and navigation at key components.¹² There is interest in the potential to incorporate bundled models of care; however, we need pilots that can demonstrate the outcomes of these models of care and inform considerations for future funding.

We have learned lessons along the way that have been applied to the design of the Bundle and which will inform considerations for expansion into other jurisdictions and cancer care pathways. We continue to recruit to the Bundle and will report the findings of our final evaluation which will include analysis of the comprehensive set of patient-reported experience measures, patient-reported outcomes and comparison with our comparator cohort. This data is required if we are to build on the lessons learned through this implementation pilot which ultimately will guide future expansion of bundled models of care.

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Data availability. The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author if appropriate.

Conflicts of interest. Dr Yvonne Zissiadis, Anna Montgomery and Nicola Forsyth work for GenesisCare who are sponsoring the Bundle project and evaluation.

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