





# Acceptability of a virtual prostate cancer survivorship care model in regional Australia: A qualitative exploratory study

Nicole Heneka<sup>1,2,3</sup>  | Suzanne K. Chambers<sup>1,3</sup>  | Isabelle Schaefer<sup>1</sup>  | Jeff Dunn<sup>2,4</sup> 

<sup>1</sup>University of Technology Sydney, Broadway, New South Wales, Australia

<sup>2</sup>University of Southern Queensland, Springfield, Queensland, Australia

<sup>3</sup>Australian Catholic University, Brisbane, Queensland, Australia

<sup>4</sup>Prostate Cancer Foundation of Australia, Sydney, New South Wales, Australia

## Correspondence

Nicole Heneka, National Health and Medical Research Council (NHMRC) Centre for Research Excellence in Prostate Cancer Survivorship, Faculty of Health, University of Technology Sydney, Broadway, Australia.  
Email: [nicole.heneka@uts.edu.au](mailto:nicole.heneka@uts.edu.au)

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## Abstract

**Objective:** To assess the acceptability of a nurse-led prostate cancer survivorship intervention adapted for virtual delivery and tailored to post-surgical care, in a regional Australian hospital and health service.

**Methods:** A qualitative exploratory study using the Theoretical Framework of Acceptability (TFA).

**Results:** Twenty-two participants took part in a semistructured interview comprising men who had completed the program ( $n = 16$ ) and health professionals/service stakeholders involved in program delivery ( $n = 6$ ). Acceptability of this virtual prostate cancer survivorship care program was very high across all constructs of the TFA, from the perspectives of both program recipients and those delivering the program. The quality of care received was seen as superior to what men had experienced previously (burden, opportunity costs). The time afforded by the regularly scheduled video-consultations allowed men to come to terms with the recovery process in their own time (self-efficacy), and provided an ongoing sense of support and access to care outside the consultation (ethicality). Clinically, the program improved care co-ordination, expedited identification of survivorship care needs, and met service priorities of providing quality care close to home (burden, perceived effectiveness).

**Conclusions:** Findings from this study suggest virtual post-surgical care delivered via videoconferencing is highly acceptable to prostate cancer survivors in a regional setting. Future research exploring virtual program implementation at scale and long-term patient and service outcomes is warranted.

## KEYWORDS

cancer, nurse specialists, oncology, patient acceptance of health care, prostatic neoplasms, psycho-oncology, psychosocial intervention, remote consultation, survivorship, telemedicine

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## 1 | BACKGROUND

Prostate cancer is the fourth most commonly diagnosed cancer globally and the second most frequently diagnosed cancer in men.<sup>1</sup> In Australia, prostate cancer has recently overtaken breast cancer as the country's leading cause of cancer, and is the second most common cause of death from cancer in Australian men.<sup>2</sup> Over 24,000 men are expected to be diagnosed with prostate cancer in Australia in 2022.<sup>2</sup> Greatly improved survival rate over the last 3 decades now sees over 240,000 Australian men living with a current or previous diagnosis of prostate cancer.<sup>2</sup>

Definitions of survivorship vary, however, for men with prostate cancer, survivorship is considered to commence at the point of diagnosis and continues to the end of life.<sup>3,4</sup> Men's experiences of prostate cancer survivorship care are often dominated by physical and psychosocial burdens, poor access to care, poor care-co-ordination, sub-optimal, communication from health professionals and a lack of men-centred care.<sup>5,6</sup> Many men do not survive well, facing long term psychosocial and sexual morbidities, and an increased risk of suicide.<sup>7,8</sup> Given these factors, accessible and co-ordinated short-and long-term survivorship care for men with prostate cancer is critical.<sup>9</sup>

For men living in regional and rural areas, geographical disparities further increase the burden of prostate cancer and hinder accessible survivorship care.<sup>8,10</sup> These men face more advanced disease at diagnosis, poorer survival, and higher mortality compared to their urban counterparts, largely due to variations in access to and use of prostate cancer-related services.<sup>10</sup> Approximately 10% of deaths attributable to prostate cancer could be avoided if this urban-rural disparity was addressed,<sup>11</sup> amounting to 350 lives saved in Australia per year.<sup>2</sup> Hence provision of readily accessible evidence-based survivorship interventions is an urgent priority for this cohort.

Increasingly, regional and rural health services are turning to virtual models of care in an effort to improve access to healthcare services, specialist healthcare, and to lessen the urban-rural care gap.<sup>12,13</sup> Recently emergent are virtual care models developed specifically for cancer survivorship which aim to reduce in-person follow-up care and deliver integrated and tailored survivorship care to patients.<sup>14,15</sup> In the context of prostate cancer survivorship a small number of virtual care models have been recently implemented with promising results including: high patient satisfaction; comparable clinical outcomes; and significant time and cost savings.<sup>16-18</sup>

Until recently, an absence of quality prostate cancer survivorship care guidelines hampered efforts to advance well-coordinated and responsive survivorship care for men with prostate cancer.<sup>9</sup> However, in 2020, a panel of 47 experts and consumers from Australia and New Zealand came together to define the key domains of survivorship care in a Prostate Cancer Survivorship Essentials Framework ('Essentials Framework').<sup>6</sup> This widely endorsed Framework<sup>19</sup> provides a road map for improving prostate cancer survivorship care in a multitude of community and clinical settings. Accordingly, we have recently undertaken a feasibility pilot of a virtual prostate cancer survivorship intervention in a regional Australian Hospital and Health Service (HHS). The intervention encompasses the principles of the Essentials Framework and was based on an already developed

and tested framework informed by evidence review and expert and consumer consensus.<sup>6,20,21</sup> Since 2016 the HHS has successfully used a connected care platform to deliver virtual care across a range of chronic diseases. This pilot provided an opportunity to expand the application of the platform beyond chronic disease management and into the rapidly growing area of prostate cancer survivorship care.

As part of the pilot evaluation, we completed an in-depth exploration of program acceptability from both the patient and service stakeholder perspectives. Acceptability is a multi-faceted concept based on the degree to which intervention recipients or deliverers consider it to be appropriate.<sup>22</sup> This is largely based on participants' anticipated and/or experienced cognitive and emotional responses to the intervention, and has implications for future uptake and implementation.<sup>22</sup> Hence, we applied the Theoretical Framework of Acceptability<sup>22</sup> to assess intervention acceptability and explore attitudes towards the intervention, intervention appropriateness, suitability, and convenience, and perceived effectiveness of the intervention.

## 2 | METHODS

Ethical approval for this study was obtained through the Health Service Human Research Ethics Committee (HREC/2020/QWMS/68068). Study reporting was guided by the Consolidated criteria for reporting qualitative research (COREQ) checklist<sup>23</sup> and the study conforms to ethical standards set out in the Declaration of Helsinki.<sup>24</sup>

### 2.1 | Study design

This qualitative exploratory study assessed the acceptability of a nurse-led prostate cancer survivorship intervention<sup>25</sup> adapted for virtual delivery and tailored to post-surgical care.

### 2.2 | Conceptual framework

Evaluation of program acceptability was undertaken using the Theoretical Framework of Acceptability (TFA).<sup>22</sup> The TFA comprises seven constructs that guide the assessment of acceptability of an intervention from the perspectives of intervention participants and those delivering the intervention.<sup>22</sup> In the context of the virtual care program, the TFA constructs to assess acceptability were applied as outlined in Textbox 1.

### 2.3 | Intervention

The intervention was delivered via an established connected care platform that has been successfully used for other patient groups in the HHS. The intervention included one onboarding session followed by a 12-week program post-surgery using a combination of video-conferencing consultations and self-paced resource engagement

### BOX 1 Theoretical framework of acceptability<sup>22</sup> constructs for program evaluation

- How did participants feel about taking part in/delivering the virtual prostate cancer care program? (*affective attitude*)
- To what extent did participants understand the virtual prostate cancer care program and how the program works? (*intervention coherence*)
- How confident were participants that they could do what they needed to take part in/deliver the virtual prostate cancer care program? (*self-efficacy*)
- How much effort was needed to take part in/deliver the virtual prostate cancer care program? (*burden*)
- Did participants feel they had to give anything up to take part in/deliver the virtual prostate cancer care program? (*opportunity costs*)
- How did the virtual prostate cancer care program align with participants' value system? (*ethicality*)
- How effective was the virtual prostate cancer care program? (*perceived effectiveness*)

('program'), led by a specialist virtual care nurse. Participants received an integrated tablet for the program to facilitate videoconferencing, access to program resources, and remote patient monitoring tools. All participants also received a book format self-management resource<sup>20</sup> that addresses key prostate cancer related challenges with an evidence-based, low intensity care model that applies a cognitive behavioural approach.<sup>21</sup> In this approach care is matched to the level and type of need, is men-centred, evidence-informed and connects to self-help that is client paced, and relevant community resources. The key Essentials Framework domains that conceptually underpin the intervention are *personal agency*, *evidence-based survivorship interventions*, *shared management* and *vigilance* (Supplementary Material S1).<sup>6</sup> Session content across the intervention is connected to the recovery journey and key physical and emotional challenges such as: post-operative care and symptom management; psychoeducation; stress management and coping flexibility; conjoint couple coping, problem solving and goal setting for the future. The virtual care program ran in parallel with patients' usual post-surgical follow-up delivered by the patients' treating team (e.g., urologist, prostate cancer specialist nurse, etc.).

## 2.4 | Study setting and population

The study was undertaken in an Australian regional HHS. Study participants comprised: (i) men newly diagnosed with localised prostate cancer who were scheduled to undergo, or had undergone, radical prostatectomy or robotic prostatectomy surgery within the previous 3 months ('men'); and (ii) clinicians and non-clinical

stakeholders involved in the development and/or delivery of the virtual prostate cancer care program ('program stakeholders').

## 2.5 | Recruitment and data collection

Men were recruited from consultant clinics within the HHS and given the option of taking part in the virtual care program (intervention) or receiving post-surgical care face to face (usual care). Men who chose the virtual care program were advised that they could opt in to a semi-structured interview to explore their experiences upon program completion (i.e., completion of all weekly sessions). Men who opted for usual care were not recruited for any study activities in accordance with the scope of the feasibility pilot. The clinical and administrative teams involved in the development and delivery of the project, including the virtual care program clinical nurse and support team, the prostate cancer specialist nurse, urologists and service managers, were also invited to take part in a semi-structured interview to explore program acceptability from the health service perspective.

A question route informed by the TFA and piloted with consumers and service stakeholders guided the semi-structured interviews (Supplementary Material S2). Semi-structured interviews were undertaken within two weeks of completing the program (men), and within one month of program completion by the last man (program stakeholders), between October 2021 and May 2022. All participants provided written informed consent prior to taking part in the semi-structured interviews. Interviews were conducted by a research team member external to the HHS and program delivery (NH) with extensive qualitative interviewing experience. All interviews were undertaken via phone and were audio recorded and professionally transcribed by an external transcription service.

## 2.6 | Data analysis

All transcripts were read in conjunction with the original audio recording to check for accuracy. Data familiarisation was achieved through multiple readings of the transcripts and a combination of deductive and inductive thematic analysis was undertaken.<sup>26</sup> Preliminary coding was guided by the semi-structured interview questions which directly aligned with the seven TFA constructs<sup>22</sup> Preliminary codes and collated data were then examined for potential themes both within the TFA constructs and inductively. To ensure rigour, the preliminary constructs and themes were identified independently (Nicole Heneka, Isabelle Schaefer) and refined through collaborative analysis (Nicole Heneka, Isabelle Schaefer, Suzanne K. Chambers, Jeff Dunn).

## 3 | FINDINGS

Twenty-two participants took part in a semistructured interview comprising men who had completed the program ( $n = 16$ ) and program stakeholders ( $n = 6$ ). All but one man who completed the

program took part in an interview. All men had been diagnosed with localised prostate cancer and had undergone a prostatectomy within 3 months of commencing the program. Men had a mean age of 64 years ( $\pm 5.0$ ) and lived an average of 33.7 km ( $\pm 27.8$ ) from the study hospital. Program stakeholders comprised specialist nursing ( $n = 4$ ) and medical staff ( $n = 1$ ), and service management ( $n = 1$ ), with an average of 10.3 years ( $\pm 6.8$ ; range 5–23) in their respective disciplines and 7.2 years ( $\pm 7.8$ ; range 1–21) at the study site. Interviews averaged 17.8 min ( $\pm 10.8$ ; range: 8–58). Findings are presented for each TFA construct below. Quotes from men who completed the program are represented as (ID\_00). Program stakeholders are identified as (PS\_00).

### 3.1 | Affective attitude

Men were asked to reflect how they felt about taking part in the program both prior to starting and upon completion. Men were generally very positive about the program concept when they first heard about it. The prospect of regular contact with a health professional was appealing as some men reported lengthy wait times between appointments at the hospital previously and valued more regular contact during their recovery period:

Helps us get through days when sometimes you can't talk to somebody else...[and] to talk with [nurse] every fortnight, I will actually look forward to it...

(ID\_09)

Many also viewed the program as an opportunity to easily seek and access information about prostate cancer and their recovery:

I thought it was an absolutely brilliant idea. Being able to get information backwards and forwards - I thought that was really handy.

(ID\_01)

Others were immediately drawn to the convenience of a virtual program which would save them time:

I thought, save me a lot of mucking around going to the hospital. I have organised to have time off work and to try and get to the hospital appointments is really difficult.

(ID\_14)

Some men had a more neutral opinion prior to starting, but viewed the program more positively as they worked through it:

Before: Well, I didn't really have an opinion one way or the other. I thought it's just another tool to help get through the process of recovery.

(ID\_12)

After: I'm not into groups and all that sort of thing. So this was another resource...I know I'm getting good information and it was a good opportunity each two weeks to vent and get some reassurance. So yeah, I was pretty happy.

(ID\_12)

Upon program completion men reported how beneficial they found the regular contact with the virtual prostate care nurse. These sessions provided an opportunity to ask any questions, and men found it reassuring to have their recovery experiences normalised:

Yeah, it was good in a sense that you had someone to sort of back you up on the experiences you're having, "Oh, this is happening" and you can discuss it. And I suppose one good thing about it, it sort of keeps you a little bit honest. In a sense of where you are at and what you're doing.

(ID\_11)

Men also felt the virtual format allowed them to more easily address sensitive issues which they may have been hesitant to raise face to face:

It was good. [The virtual prostate care nurse] is good, straightforward. And it seems kind of embarrassing, to ask the questions that need to be asked, but it was very easy and pleasant.

(ID\_13)

For program stakeholders, support and enthusiasm for the program was high from the start. Those who were already working within virtual frameworks to manage chronic diseases across the HHS saw this program as an opportunity to expand the scope of the existing virtual care program into survivorship care and better support prostate cancer survivors:

I was really excited for the fact that we've got work in this area that's going to hopefully benefit our gentlemen and expand the way that we use virtual technology, because I think it's a really untapped resource.

(PS\_03)

Clinicians also saw the program as an opportunity to better identify and understand the long-term survivorship care needs of this cohort of men:

I think from a clinician's perspective, working within the HHS, you understand prostate care. But it always tends to be more acutely focused or around the surgery, but I was just really interested to understand more around what did survivorship mean for these

patients and what was their long-term care requirements because I don't think we do that as well.

(PS\_05)

More broadly the strong alignment of the virtual delivery model with core service principles of quality care provision close to home, irrespective of geographical location, drove support for the program:

...so care close to home is one of our fundamental principles, and I actually think this [program] provides a lot of opportunity across a very large geographical spread for people to recover with their families in a place that's familiar, but actually still get a level of support they wouldn't have access to otherwise.

(PS\_01)

### 3.2 | Intervention coherence

Understanding of the program and how the program works was largely high with most men aware of the program targeting post-operative recovery including self-management and education:

I think it's there to help men...to get a grasp of what's happening. To start with I had no grasp at all. As far as prostate cancer, I knew it was there, but not what was involved up until I had the operation. After the operation it [the program] has been nothing but positive.

(ID\_04)

Beyond specific recovery components, men reported the program created a strong sense of support generally: '*...it seems that somebody out there cares...that there's someone out there looking out for you*' (ID\_10), and support for men in the future facing prostate cancer: '*...it's a place to get helpful insight along the journey...and to help and to give hope to others along their journey*' (ID\_13).

Notably, men with lower intervention coherence still reported benefiting from the program. This was largely due to the regular contact with the virtual care nurse and ready access to health professional advice:

I still really don't understand exactly what it's all about. I know that there's support out there for post-op prostate cancer people like myself, but...it's all new to me. There was nothing that I disliked, and there were some good points in there... for advice and that it worked well...it was beneficial to my recovery. It helped me immensely...so I can't complain.

(ID\_06)

After completing the program, men reported feeling confident to share what they had learnt during the program, with many men

actively advocating for testing and the program itself with their family and peers:

I'm not really a person that needs to sit in a big group and tell everybody about what my life's about and what's happening although when I got back to work, I ended up talking to quite a lot of people at once, giving them an idea what prostate cancer's about. Because they were interested and they didn't know anything. So I said, "Well look, we better just sit down and have a talk." I think just having that [program] it boosts your own confidence in talking about it because I could talk with [virtual care nurse] no problem, and my wife, obviously, and even my brothers, I'm ringing them up saying "Hey, You guys need to go and get tested."

(ID\_09)

Given all program stakeholders had been involved in program development and/or delivery, intervention coherence was, as expected, already high. Thus, for program stakeholders the focus turned to a more nuanced understanding of a virtual prostate cancer survivorship model and how to best support this patient cohort:

I think around prostate cancer, the immediate needs and the level of support that is required is not immediately known or understood by the person and their family affected. So what [we are] particularly keen on is that iterative approach around support through a virtual consult, remote monitoring, opportunities around education, escalation process, how the family could report in, and if the needs changed around these patients, [how] the model could change to fit that as well... we might think it's the most extraordinary model and it saves bed days, but if the patients say it's an awful experience, then we shouldn't do it.

(PS\_01)

### 3.3 | Self-efficacy

Despite the intervention being tablet based, the majority of men were confident they could manage the technology, even if they had not routinely used it previously:

...it was a new technology for me, but it was nice to experience it...and possibly in the future, I might go down that line myself with general communication. It was all set up on the tablet, as far as that was concerned and it was just so easy. And all this computer stuff is sort of way over my learning scale...being my age and plus not really...having to have anything to do

with it in the past...it was a great experience. I'm not computer savvy, but it was very good for my level...

(ID\_04)

The ease of using the virtual care platform was largely attributed to the simplicity of the user interface which utilised a single tablet for both videoconferencing and access to program resources:

It was good that it was kept simple. The tablet had no other purpose. Switch it on and just follow the prompts and you can't really get lost.

(ID\_13)

In terms of self-efficacy related to their post-operative recovery men were frank about any anticipated difficulties working through the program, but felt safe to open up and seek out the support they needed:

Oh, it was simple. You just had to get through your head that the sensitive questions they ask are for a reason. And once you get that, cause you know what us men are like, we're bloody bulletproof, and we're this and we're that, and it's none of your business sort of thing. But it frees you up. It frees your mind up. I think it's awesome. Oh, I reckon it was great.

(ID\_10)

The main barrier to participation was related to literacy skills with a small number of men stating written resources were difficult for them to engage with, and would prefer more options for audio and/or audio-visual resources. Despite these difficulties, these men persevered with the program and acknowledged improvements:

I'm not that good at reading and writing. I did have a little bit of problems with that part of it. But I did have a look at it and yeah... I told [virtual care nurse] that I wouldn't be able to do it that easy. It's just something new to me and I didn't really know how to go about any of this. I still don't know how to go through some of it, but yeah. I'm doing a lot better than I did.

(ID\_05)

From a program delivery perspective, stakeholders were already familiar with the virtual care platform itself, hence perceived self-efficacy was high. Co-designed manualisation of the program ensured a standardised delivery format tailored to the patient cohort and local service contexts which further supported clinicians in program delivery:

I was confident from a workforce capability perspective because I think our HHS has delivered virtual care, and particularly because we worked alongside our existing [virtual care] program. I was confident that we

had the work force capability to support [clinicians] to deliver the model.

(PS\_05)

In terms of clinical support, stakeholders felt a more formalised partnership with the HHS psychology service would benefit future program iterations given the wait times to access this service. This was especially important when psychosocial care needs escalated beyond low intensity care and the clinicians' own scope of practice:

It would be beneficial to create a formal partnership with a psychologist to include one review per patient where it is ascertained if a referral to the service is required. Some issues require psychology which men were not willing to access separately. The escalation to psychology/social work concerns me as there are long waits to access these services.

(ID\_03)

### 3.4 | Burden

Overwhelmingly, the perceived burden of taking part in the program was very low, with men consistently stating the virtual care model was easier than attending a face to face clinic: '*Well, it cuts out a lot of time of going to any appointment, yeah, it saved me a lot of time and money*' (ID\_05). Being able to receive care from home was also more cost-effective for some men: '*...in the beginning (post-surgery) when I couldn't drive, it saves on taxi fares which are expensive*' (ID\_07).

The vast majority of men reported that having to attend a clinic would have been far more burdensome than the virtual care model, especially for those that resided further from the hospital:

Well it was an hour and a quarter in, and an hour and a quarter back. And you sit there and wait for sometimes three quarters of an hour...but this is just so easy. You can get over and done within 15 minutes and get about your life. Where before you'd have to spend minimum half a day. Which you just couldn't get back.

(ID\_10)

The benefits of having some agency over time and location of care also reduced stressors related to managing symptoms in the post-operative period:

Yeah in hospital you could sit there for 10 minutes, you could sit there for an hour and a half. You just don't know. Especially with, I think, it was only in the early stages there I was a bit sort of dubious about leaving the house for too long because you never knew what was going to happen [incontinence].

(ID\_14)

Program stakeholders confirmed the burden attending a face to face consultation placed on their patients, and supported a model of care that mitigated this:

We have got patients that are all over the place. They're quite dispersed. And universally they all find it difficult to get into the hospital. And so anything that helps in that regard is a big plus.

(PS\_06)

Similarly, a virtual care model both substantially reduced the time and travel burden for clinicians, and increased service efficiencies:

When I worked in [other service], it was home visits and there was no telehealth or virtual care option. And I would probably average three home visits a day. And if you're travelling out to [rural suburb], then that might be one or two home visits because it's an hour out, an hour for an appointment, then an hour back. So that's three hours. Now, we book half an hour appointments. So in three hours you could potentially do six video calls. You can do the back to back as well because with the video calls, once you finish that one, you can just jump straight into the next one.

(PS\_02)

From a service perspective an anticipated burden of the virtual care model related to the time involved in initial set-up. This was considered the case for any new program and also provided valuable opportunities to streamline service delivery:

Look, you do have to put in a lot of work, I think, at the beginning...it's that redesign process of understanding, well this is the way we currently deliver it, we've got to unpack it all...because you do find lots of waste and inefficiency and...we're not getting people to practise top of scope, and there's skills and abilities that could be utilised better in performing different tasks. It is a great way to make the service more efficient.

(PS\_05)

In retrospect program stakeholders felt there was potential to simplify the platform as men primarily engaged with the videoconferencing and less so with the remote monitoring tools:

So all of the men, they all participated in the video calls without fail...they loved the video calls...and it [platform] works really well for monitoring chronic conditions where we really need to get that biomedical data back about the patient...but it was a very minimal proportion who actually engaged regularly in the [patient monitoring] surveys.

(PS\_03)

Collectively, these findings provided important insights for future program iterations, including better matching of the platform functionality to the patient cohort:

We made the technology we were already utilising try to fit, but I think there's lots of opportunity to give the patients much more options around what the technology could look like...so making something that's more patient friendly or fitting the model of care could be an opportunity.

(PS\_05)

### 3.5 | Opportunity costs

Similar to the construct of burden, opportunity costs were perceived to be negligible compared to in-person care for men in the program:

It was good. I don't think I missed out on anything. That's something from where I come from. As I said, my healing needs, the healing has been really good.

(ID\_13)

Having program sessions in a location of the man's choice created a more comfortable environment for the consultation and again outweighed the process of attending an in-person clinic:

No, not at all...it was actually better. Convenience, time saving and you can sit down, put your feet up and talk about things better than sitting in a clinic or in a room. I don't think you need all this face to face stuff. I think this is a better way.

(ID\_10)

Importantly, none of the men felt they had given up anything in terms of the quality of their care using the virtual model:

No, not at all. Not at all no, care was brilliant. If I had questions for [virtual prostate care nurse] I'd ask her. And she was very, very informative and she was very, very concerned as to how I'm going, what I'm doing, and stuff like this.

(ID\_01)

Even men who stated they preferred face to face health consultations noted that the level of care provision in the virtual program was comparable, and an ideal adjunct, to in-person care:

Well, personally I would rather go into a facility and deal with these things face to face. But given time and cost and all of those other things, it's an acceptable way of doing it. [Interviewer: So did you feel that you

had to give up anything doing it virtually rather than face to face?] Well, no. I think it's an intangible. In terms of the program and its aim no, there was no difference...I'm old school and I like to talk to a person face to face...but that's just me, that shouldn't influence a program.

(ID\_12)

Stakeholders similarly reported negligible opportunity costs related to the program, highlighting instead that the virtual care model facilitated improvements in care co-ordination compared to standard practices:

The other option really is a sort of a shared care with GPs and things. And that just, that's a bit of Swiss cheese right there. You just never know what's happening, and there's follow up, whether that's being done appropriately. So it does really help with the continuity of things.

(PS\_06)

Additionally, for post-operative survivorship care specifically, the virtual care program was seen to facilitate very timely identification of survivorship care needs because of the extra time men spent in consultation with the virtual care nurse:

It's not always possible to check in on somebody every couple of days post-surgery...what I found with this [program] is that we got there earlier in the piece and could troubleshoot a lot faster. Sometimes it can take can up to six months before you can get to the bottom of those issues and it was found in less than three. So in survivorship terms that's a major plus. Because then those people weren't struggling for months and months on end.

(PS\_04)

### 3.6 | Ethicality

The virtual care model was a good fit with men's value systems and consistently met their care needs:

I think it would meet anybody's needs. At the end of the day, it is a daunting process to go through. And with this particular program, I really think it fits a purpose.

(ID\_03)

Men were more satisfied with the quality of care as a result of the program compared to previous experiences with face to face care, valuing the both the time spent and detailed information received from the virtual care nurse:

I actually think it was probably better than going to the hospital. Because when you go to the hospital, you only really get to talk to...most of the time it's just one of these understudies type people. And they don't really ask you too much. They don't really tell you too much. They just make sure that you're all right. The whole time I've been, that I went to the hospital appointments, I've only seen the doctor I think twice. Other than that, it was just about a five minute conversation about pretty much nothing.

(ID\_14)

For clinicians, the program facilitated regular, purposeful discussions about difficult topics such as incontinence and erectile dysfunction. This allowed men to come to terms with these issues in their own time, and ensured opportunities to support men's survivorship care were not missed:

Bringing up conversations about incontinence and erectile dysfunction is extremely difficult...but bringing them up purposefully gives the opportunity to discuss it for problem-solving, reassurance and support. Some men saw the doctors and treatment for erectile dysfunction wasn't discussed but [the program meant we could] advocate for them to have discussions with the doctor, get scripts organised, discuss other assistive treatments. If these videoconferences did not happen, there is a potential to miss that opportunity and the patient then misses a vital part of their recovery.

(PS\_03)

A strongly recurring theme was the sense of support the program provided. The regular video-conferences with the virtual care nurse and after-hours access to an emergency number engendered a sense for the men that: '*...someone was aware of what was going on with my health all the time*' (ID\_01). Critically, men felt supported to access high-quality care irrespective of their geographic location, which would not otherwise be available:

But basically, it's great because my wife went through breast cancer, and being out here, there was nothing for her. Absolutely nothing. To country people, that [support] doesn't exist. And this [program] just gives you that confidence to keep going...you can talk to, from Sydney, Brisbane, anywhere, just like a consultation where you can sit on your veranda and talk. I think there should be more of it.

(ID\_10)

The program also directly aligned with the strategic priorities of the service of bringing care closer to home, which, in turn, has the potential to ease the challenges of service demand versus capacity:



So being able to link in via video call means that we can frequently touch base with them and ensure that we are meeting their needs when they require it, rather than waiting until they're booked into the clinic for three weeks time when they might be imminently having a problem and not able to come in...we don't have enough clinicians to be able to provide the care because we have more and more people moving into our health service and that's always a challenge...I think a lot of health services have that same problem.

(PS\_05)

Ultimately, the strong sense of program ethicality was evidenced by men's motivation for joining the program and their subsequent program engagement, with all men attending every scheduled teleconference:

The overwhelming majority took this on because of the possibility of the research helping other men. They were all very forthcoming with information and there were no purposely missed videoconferences as they all genuinely wanted to participate. If they did [have to miss a videoconference] they rescheduled for the [virtual care nurse's] next available day.

(PS\_03)

### 3.7 | Perceived effectiveness

The knowledge, experience and approach of the virtual care nurse was highly praised and regarded as key to program effectiveness. Men consistently reported effective symptom management and resolution, and found the program resources easy to access and apply:

I'm a fairly quick healer anyway, but I think everything flowed really well, just as I say, just having that outside support from home...and knowing that someone else does care. You know? I think just having your nurses out there who are...really good on the experience side, that [Nurse] was just so informative as well. There were some good, interesting things [activities] there that I found comforting. There were some real good things. It was simple to use.

(ID\_09)

For both the men and program stakeholders, the videoconferencing option of the virtual platform was an essential factor driving program effectiveness:

... one of the disadvantages of telehealth is just that, well, it's really the phone calls, to be honest with you, not even telehealth. And seeing our patients, interacting them with them virtually is much, much more

effective from, just being able to see someone. And also for their own personal satisfaction, I think they take it a bit more seriously. Often we call patients and they're sort of standing in the middle of the shopping centre somewhere, or something like that. And you've actually got to be engaged on your phone or on your computer to have a proper consultation, which is good.

(PS\_06)

Another key contributor to program effectiveness for men was the ready access to the virtual care nurse for any questions or information needs that arose. A number of men reported that the program allowed them to process information in smaller increments, and having someone available to answer questions as they arose, rather than having to work through a large amount of information themselves, helped their recovery:

If I did have any questions [Nurse] was always available. And if you had a question before your next appointment, you always had someone there that you could go to. Well, it made the whole process understandable and a lot easier to digest. And, when you actually went in either for the surgery or the radium, you knew exactly what was going to happen prior to the event. And, you're comfortable because everything had been answered.

(ID\_03)

Clinicians confirmed that patients typically receive a large amount of information at their pre-operative appointments and they '*...often don't ask questions because they are overwhelmed or think that their questions are insignificant*' (PS\_03). While men's information seeking needs varied greatly, the program supported men in exploring information when they were ready:

The common theme was that patients sought information when they were ready. Everyone is different in when they reach that point. All men said that they had a large bag full of paperwork from the hospital...most had too much to sort through to find the info they needed at the time.

(PS\_03)

Of note, program effectiveness was perceived as high by all participants, who felt exceptionally well supported throughout the program and valued the men-centred care:

[Effectiveness] Out of what? Out of 10? 11,12! I honestly don't think that as males, that you could get through it without this. Well, look, I had the operation...and once I got onto the program and discussed things, it was just, well, I'm basically 99% dry now and free of it. So the first two months were, or month and a

half were really tough, but once we started this program I just thought it saved my sanity.

(ID\_10)

## 4 | DISCUSSION

Acceptability of this virtual prostate cancer survivorship care program was very high across all constructs of the TFA, from the perspectives of both program recipients and those delivering the program. The program appealed to men with different levels of health literacy and experience using technology, as well as those that reported generally preferring face to face clinical interactions. Prospective program acceptability for men was high, largely due to the anticipated convenience of accessing care from home and the knowledge of regular contact with a health professional throughout their recovery, and grew throughout the program. For men, negligible burden and opportunity costs related to program participation, coupled with a strong sense of program ethicality, were key drivers of program adherence and perceived effectiveness. The quality of care received was seen as superior to what men had experienced previously and engendered a strong sense of supportive care with ready access to information and health professionals. It is worth noting, however, that the men in this study were all in the early phases of prostate cancer care with timely access to the virtual care program (within 3 months post-operatively). Hence, program acceptability may differ for men at a later phase of care and/or with later access to a virtual care program.

For the men in this program having agency over time and location of their care was not only more convenient and cost-saving than attending a clinic in-person, it also provided a focussed environment where men could more easily open up and safely explore their survivorship care needs. The time afforded by the regularly scheduled video-consultations allowed men to come to terms with the recovery process in their own time, and provided an ongoing sense of support and access to care outside the consultation. These findings are consistent with other cancer survivors' experiences of telehealth, albeit limited primarily to telephone and web-based interventions.<sup>27</sup>

Videoconferencing has been shown to be equivalent to in-person visits for prostate cancer survivorship care in terms of patient satisfaction, quality of care and efficiency, with the added benefits of significantly lower patient incurred costs and reduced travel time.<sup>28</sup> Indeed a key tenet of program acceptability for men and stakeholders in this program was the use of videoconferencing for consultations, both in terms of the therapeutic relationship and accessibility to care. Of note, the men in this program were provided with a dedicated tablet for videoconferencing, rather than using their own devices to access the virtual care consultations. This is an important consideration for program implementation at scale as the cost of device provision may not be feasible for services without an established virtual care infrastructure. Additionally, program acceptability may differ for men using their own devices. The men in this study reported that the provision of a dedicated device substantially contributed to program

accessibility, irrespective of current technology use, and enabled men without access to a computer or mobile device to also engage with a virtual care program.

Overall men in this program felt they were active participants in their recovery rather than passive recipients of care, with many empowered after the program to initiate discussions about prostate cancer with their peers and advocate for prostate cancer screening. The skills of the virtual care nurse were highly praised by all men and were an important conduit to normalising perceived sensitive issues such as incontinence and erectile dysfunction. For clinicians, this translated to much more rapid recognition of post-surgical survivorship issues and timely provision of appropriate interventions. Given more than 80% of men report severe erectile dysfunction following prostate cancer treatment, but only one-third will seek help,<sup>29</sup> health care providers are uniquely positioned to initiate conversations about sexual concerns and facilitate timely and appropriate care. More broadly prostate cancer survivors experience a multitude of unmet supportive care needs, both short and long-term, related to treatment side-effects, informational needs, psychosocial care, care co-ordination and accessibility to care.<sup>30,31</sup> Again, timely identification of care needs is critical to reducing the prostate cancer disease burden and an essential component of quality survivorship care.<sup>6</sup>

For stakeholders this program was a valuable addition to the service's current scope of virtual care offerings and facilitated a better understanding of prostate cancer survivorship care needs. Clinically the program improved care co-ordination and expedited identification of survivorship care needs, addressing service priorities of providing quality care close to home. This is consistent with findings from larger studies which show virtual postoperative care models expedite identification and treatment of early complications and enhance the quality of postoperative recovery.<sup>32</sup>

Key considerations for future program iterations centred on a simplified virtual care platform which retained the ease of access to videoconferencing but had a lesser focus on biomedical data. This was seen as a better fit for this particular cohort of men with localised disease and relatively straightforward recovery from surgical treatment, compared to, for example, men with prostate cancer receiving hormone therapy whose treatment side effects and metabolic changes can be significant.

### 4.1 | Study limitations

This study had a small sample and findings may not be generalisable to other health services in similar geographic regions. Internet access in this region met the needs of study but this may not be the case in other regional/remote settings, and is a critical factor in the implementation of a virtual care model. The participating HHS in this study had a well-established virtual care platform and supporting infrastructure to deliver this program, including provision of a dedicated tablet to facilitate videoconferencing, which may not be the case for similar regional services. Despite these limitations, this study has

provided valuable insights into the acceptability of a virtual model of post-operative care for men with prostate cancer in regional and rural settings.

## 4.2 | Clinical implications

Successful implementation of any health care intervention is highly contingent on acceptability, from both a patient perspective, and from those delivering the program. For patients, acceptability positively correlates with treatment adherence and subsequent treatment outcomes. Intervention fidelity and effectiveness are also conditional upon health professionals' perceived intervention acceptability.<sup>22</sup> Hence, the high acceptability of this program suggests great potential for effective implementation of a virtual care program for men in the early phase of prostate cancer care following surgery.

This, in turn, will have substantial implications for the health care system including: improving access to quality survivorship care for men in regional and rural areas thus reducing urban/rural disparities; and easing the burden on an already stretched healthcare system by supporting care close to home and facilitating timely identification of survivorship care needs. For patients there are also potential benefits related to time and cost savings, as well as improved quality of care. Additionally, this virtual model of care strongly aligns with the key principles of the Survivorship Essentials Framework including: improved care co-ordination; greater access to evidence-based survivorship interventions; and supporting personal agency to help men identify their survivorship care needs.<sup>6</sup>

## 5 | CONCLUSIONS

For many men with prostate cancer geographic disparities limit access to timely, quality survivorship care. This study has provided important insights into the acceptability of a virtual care program for men with prostate cancer following surgery. Our findings suggest virtual post-surgical care delivered via videoconferencing is highly acceptable to prostate cancer survivors in regional Australia and strongly aligns with regional HHS priorities of delivering care close to home. Future research exploring virtual program implementation at scale and long-term patient and service outcomes is warranted.

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### CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

### DATA AVAILABILITY STATEMENT

Research data are not shared due to privacy and ethical restrictions. The data that support the findings of this study are reported within the manuscript.

### ORCID

Nicole Heneka  <https://orcid.org/0000-0001-8102-1871>

Suzanne K. Chambers  <https://orcid.org/0000-0003-2369-6111>

Isabelle Schaefer  <https://orcid.org/0000-0001-9941-7671>

Jeff Dunn  <https://orcid.org/0000-0002-1180-3381>

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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