

## Research Article

# The Anatomy of a Hybrid In-Person and Virtual Sexual Health Clinic in Oncology

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**Abstract**

**Introduction:** Sexual health is compromised by the diagnosis and treatment of virtually all cancer types. Despite the prevalence and negative impact of sexual dysfunction, sexual health clinics are the exception in cancer centers worldwide. Consequently, there is an exigent need for effective, efficient, and inclusive sexual health programming in oncology. This paper describes the newly developed Princess Margaret Cancer Centers (Toronto, Canada) Sexual Health Clinic (SHC) utilizing an innovative, hybrid model of integrated in-person and virtual care. The SHC is dedicated to assisting patients/couples in re-establishing optimal sexual function, satisfaction, and interpersonal intimacy.

**Materials and Methods:** The SHC evolved from a fusion of the Prostate Cancer (Sexual) Rehabilitation Clinic at Princess Margaret (in-person) and the Movember TrueNorth Sexual Health And Rehabilitation e-Clinic (virtual) for prostate cancer patients. This hybrid care model was adapted to include six additional cancer sites (Cervical, Ovarian, Testicular, Bladder, Kidney, and Head and Neck) with plans to expand to all cancer sites. The SHC is theoretically founded in a biopsychosocial framework and emphasizes interdisciplinary intervention teams, active participation by the partner, and a broad-spectrum medical, psychological, and interpersonal approach. The launch of the SHC utilized a Hybrid Type 3 implementation methodology to ensure seamless integration into the patient workflows across the cancer sites of a high-volume cancer center.

**Results and Discussion:** The hybrid model of care has the potential to provide highly personalized care while conserving limited resources. Virtual visits are tailored to patients based on biological sex, cancer type, and treatment type. This process has resulted in 32 unique patient streams. The SHC virtual care is facilitated by highly trained sexual health counselors via chat, telephone, or videoconference. The sexual health counselors provide an additional layer of personalization and a “human touch” to the virtual clinic space. The in-person visits complement virtual care by providing comprehensive sexual health assessment and sexual medicine prescription. To inform quality assurance and evaluate effectiveness, relevant physical, psychological, and interpersonal outcomes will be serially collected via the SHC virtual portal over 12 months post-treatment. Additionally, analysis of 20 stakeholder interviews (HCP, clinic staff, and patients) will guide the SHC implementation into patient workflow.

**Conclusion:** The SHC is an innovative care model which has the potential to close the gap in sexual healthcare during a time of limited healthcare funds/resources. The SHC is designed as a transferable, stand-alone clinic which can be shared with cancer centers across North America.

## INTRODUCTION

Sexual health is compromised by the diagnosis and treatment of virtually all cancer types [1]. The nature of sexual dysfunction (SD) can differ by type of cancer and treatment, but invariably involve biological, psychological, and interpersonal factors that negatively affect the patient's overall health-related quality of life [2]. Despite the gravity of SD and the associated psychosocial sequelae, sexual health clinics are the exception in cancer centers worldwide [3, 4]. This considerable gap in cancer care forms the basis for the need for sexual healthcare that is accessible and affordable without compromising effective personalized care delivery.

### Prevalence and Severity of Impact on Health-Related Quality of Life

**Impact on Physical Wellbeing:** Over 50% of cancers diagnosed in Canada are breast and pelvic cancers [34] of these cancers, 30% of colorectal, 73% of breast, and 90% of prostate/

gynecological cancer survivors experience long-term SD. Additionally, 20% of non-breast/non-pelvic cancer survivors report SD that interferes with their overall quality of life. Ovarian and cervical cancer survivors report hot flashes, low desire, vaginal dryness, vaginal stenosis, atrophy, inflammation, discomfort, and pain during sex [4-6]. Patients undergoing treatment for prostate and testicular cancer can experience erectile dysfunction (ED), loss of desire, fatigue, hot flashes, and loss of satisfaction [2, 7, 8, 9]. In non-genitourinary cancers, such as head and neck cancers, loss of saliva, disfigurement, and fatigue can all have an impact on sexual health and patient quality of life [10].

**Impact on Psychological Wellbeing:** Although selected sexual side-effect profiles are short-term, the majority of survivors experience long-term sexual health concerns. The chronicity of the physical impact leaves patients vulnerable to psychological morbidity, including distress, depression, anxiety, and loss of self-esteem [11]. During cancer treatment, changes in body shape, scars, and hair loss can cause patients to feel less

attractive or desirable and consequently experience less sexual desire themselves [12]. For some prostate cancer survivors, ED has been described as stripping them of their identity, sex life, and relationship [13]. Additionally, patients suffering from ED can experience performance anxiety which can interfere with adherence to pro-erectile therapy [14].

**Impact on Interpersonal Wellbeing:** Patients with SD report reductions in overall relationship intimacy and satisfaction [14]. Physical changes in sexual functioning can cause both male and female cancer survivors to avoid sexual intimacy with their partners. This behavior can lead to decreased relationship satisfaction which in turn can lead to further sexual dysfunction for the couple [14, 15]. In a study with cervical cancer survivors and their partners, many partners described that changes in sexual health after treatment (e.g., vaginal dryness; pain during intercourse; sexual dysfunctions) contributed to interpersonal problems and emotional distancing from their patient-partners [16].

### Barriers to Sexual Healthcare in Oncology

Despite ongoing research and documentation of the physical, psychological and interpersonal burden of sexual dysfunction, the provision of sexual healthcare in oncology is uniformly inadequate. Research shows there are several barriers to sexual healthcare in cancer care including lack of practitioner-patient communication, care inequity, poor accessibility, and limited financial resources within healthcare institutions [17-19].

**Practitioner-Patient Communication:** Although clinicians recognize that sexual health is an important part of their patients' quality of life, many report that they do not discuss sexual health with their patients [17]. Lack of communication between clinician and patient has been consistently identified as a barrier to accessing sexual healthcare [20]. The main barriers to practitioner-initiated conversations about sexual healthcare include a lack of time, resources, and appropriate training [17]. Specifically, it is believed that healthcare practitioners' reluctance to engage in sexual health dialogue is due to their own discomfort in talking about sex, and feeling inadequate to assist patients due to the near absence of sexual health training in most medical schools [21-23]. Additionally, providers note subtle biases associated with patient-specific factors, such as age, cancer type, and curative treatment intent that can influence how or even if they discuss sexual health with their patients [20,17]. The absence of dialogue around sexual health can have a determinantal impact on patients who may interpret the absence as confirmation that SD is a normal part of treatment or something that must be endured [2]. It is important to note that the lack of communication is bidirectional. Patients can also contribute to this absence of practitioner-patient communication. Patients can feel ashamed of their SD and avoid talking about their concerns with their oncologists or assume that their oncology team is responsible solely for cancer-based medical treatment [21,22]. Even if a conversation does occur, the content and timing of the discussion may also influence its potential impact. It appears that brief and general discussions during oncology visits have limited impact on meeting the complex sexual health needs of oncology patients. Moreover, the timing of information and management

provision is also an important factor whereby some patients will benefit from early intervention [24]. While others may experience difficulties processing/retaining information during a time when cancer control is the primary focus [8,16]. Consequently, both early and ongoing inquiry combined with access to personalized care external to oncology visits is likely necessary to optimally treat sexual health concerns in an oncology setting.

**Care Inequity:** In healthcare, in general, marginalized populations are vulnerable to barriers to appropriate care, and these barriers may be amplified in relation to sexual health concerns. For the LGBTQ2+ community, cancer survivors report lower satisfaction with survivorship care [25]. These lower satisfaction rates can likely be explained by the prevalence of a heterosexist bias in medical care in North America combined with the lack of research and practitioner knowledge about the unique care needs of LGBTQ2+ cancer survivors [26]. Relatedly, practitioners can make inaccurate assumptions about a patient's sexual orientation and/or gender identification that may unintentionally deter patients from voicing their sexual health concerns [27, 28]. Similarly, cultural inequities in healthcare are common given the strong cultural influence of Christianity on medical practice in most Western countries. Again, these barriers to appropriate care may be exacerbated in sexual healthcare given that sexual beliefs and practices are shaped by social and cultural factors [18]. Finally, ageism may also worsen barriers to sexual healthcare in the cancer survivorship setting. Practitioners may experience greater discomfort in discussing sexual issues with older patients or make erroneous assumptions about sexual activity in older populations which can result in sexual health concerns not being identified or acknowledged [17]. It is important to note that intersectionality is common and that many patients may identify with multiple marginalized populations, increasing the extent to which they may experience inequities of sexual healthcare treatment.

**Accessibility:** It is known that people in rural areas face more difficulties accessing health care than their urban counterparts, and when they do access health care they can experience poorer outcomes [29]. In general, rural residents have direct access to a much smaller number and scope of health services and providers than urban residents, despite the population being predominantly older and, as a consequence, rural residents have more health concerns and unmet needs [30, 31]. (Canadian Institute of Health Information, 2013). Urban areas often consist of hospitals that receive more funding, which can improve access to specialized services, such as sexual healthcare [19]. Thus, geographical inequities can create barriers for patients who have needs that may not be met in a timely manner or by their local hospital.

In summary, the severity of impact of sexual dysfunction combined with the complexity of barriers to care within an already financially strained healthcare system underpins the lack of sexual health clinics in cancer centers worldwide. Consequently, there remains an exigent need for effective, efficient, and inclusive sexual health programming in oncology.

This paper describes the newly developed Princess Margaret Cancer Center (Toronto, Canada) Sexual Health Clinic that utilizes an innovative, hybrid model of integrated in-person and virtual care.

## MATERIALS AND METHODS

### Previous Work

In 2009, our team developed the Prostate Cancer Rehabilitation Clinic (PCRC) which was made available to all men who consented to a radical prostatectomy at the Princess Margaret Cancer Center in Toronto, Canada. The PCRC was a structured, manual-enhanced, sexual rehabilitation clinic for prostate cancer survivors and their partners. In 2012, PCRC was introduced into usual care with a patient “opt-out” option. A PCRC program evaluation revealed significant patient interest and uptake [32]. In a comparison to patient experience before the implementation of PCRC, PCRC patients reported improved biomedical and psychosocial outcomes, and exceptional satisfaction scores in care provision [8]. In 2019, the True North SHAReClinic was introduced as an alternative option to PCRC. The TrueNorth SHAReClinic is a facilitated virtual clinic containing over 200 pages of expert-informed content and 22 videos (physician, patient, and partner) and several specialized, virtual, self-management features. Evaluation of the TrueNorth SHAReClinic revealed 71% patient engagement at 1-year follow-up, substantial patient activity on the platform, and non-inferior sexual health outcomes compared to “best practice” and the scientific literature [33]. Combined, PCRC and the TrueNorth SHAReClinic have provided treatment to over 2500 patients. Currently, TrueNorth SHAReClinic is embedded as usual care in 5 leading Canadian cancer centers.

Overall, the results from PCRC and the TrueNorth SHAReClinic emphasize the importance of sexual healthcare and support the expansion of innovative models of sexual healthcare to other oncology populations. Accordingly, the Princess Margaret Sexual Health Clinic (SHC) evolved from a fusion of the Prostate Cancer (Sexual) Rehabilitation Clinic at Princess Margaret (in-person) and the Movember TrueNorth Sexual Health And Rehabilitation e-Clinic (virtual) for prostate cancer patients. The resultant hybrid care model was adapted to include six additional cancer sites (Cervical, Ovarian, Testicular, Bladder, Kidney, and Head and Neck) with plans to expand to all cancer sites. The SHC is theoretically founded in a biopsychosocial framework and emphasizes interdisciplinary intervention teams, active participation by the partner, and a broad-spectrum medical, psychological, and interpersonal approach. Clinical and Patient Reported Outcome (PRO) measures are serially collected via the SHC virtual portal to assess quality assurance and effectiveness. The launch of the SHC utilized a Hybrid Type 3 implementation methodology to ensure seamless integration into the patient workflows across the cancer sites of a high-volume cancer center.

## RESULTS AND DISCUSSION

### The Sexual Health Clinic (SHC)

**Goal:** The goal of the SHC is to assist patients and their partners achieve optimal sexual function, satisfaction, and interpersonal intimacy post-cancer treatment. A core value of SHC is to provide equitable, inclusive care in an environment that fosters openness and sensitivity to racial, cultural, sexual, and gender diverse populations.

**Patient Population:** The SHC provides care to patients (and

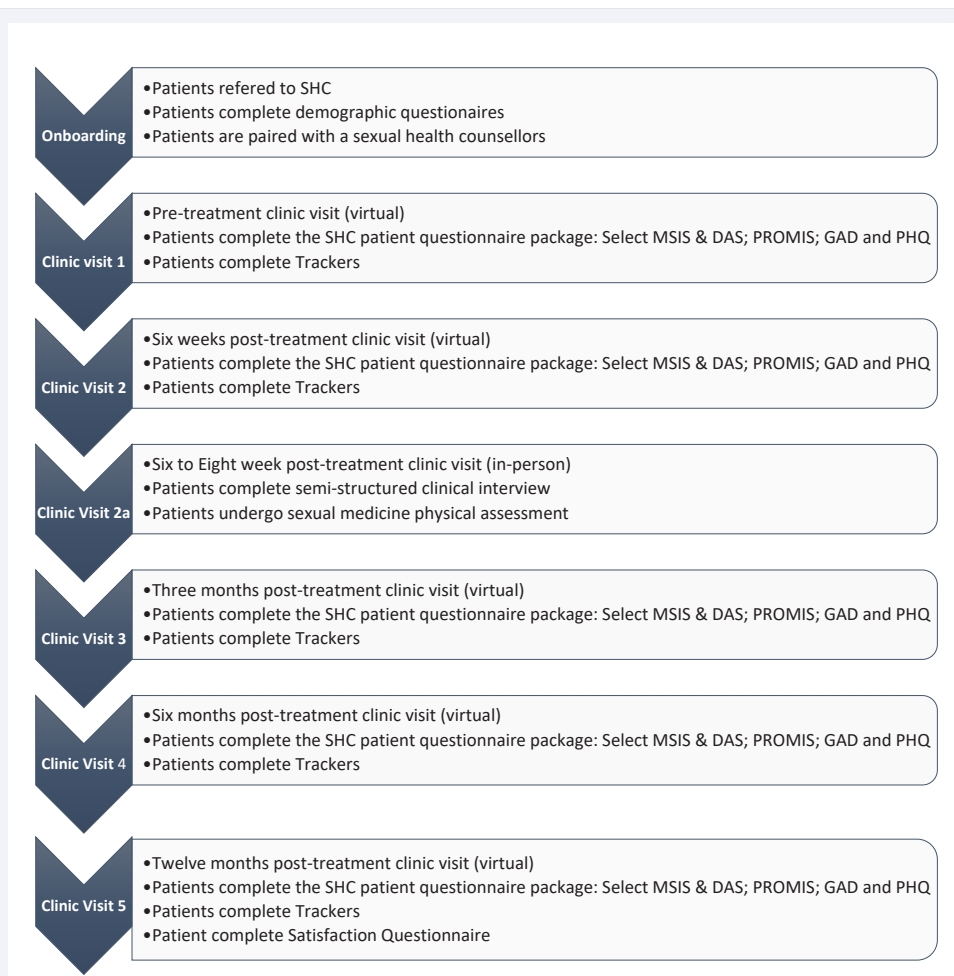
partners) with prostate, testicular, cervical, ovarian, bladder, kidney, and head and neck cancers. These cancer sites were chosen for their diversity in age, biological sex, type of sexual dysfunction, and pelvic and non-pelvic concerns. Successful treatment across these diverse presentations will allow for easy expansion to all cancers in the future.

**Clinic Visit Schedule:** The SHC visit schedule includes a virtual clinic visit at pre-treatment (T1), and 6 weeks (T2), 3 months (T3), 6 months (T4), and 12 months (T5) post-cancer treatment. The virtual visits are facilitated by highly trained sexual health counselors (SC) who provide education, support, and guidance via the SHC platform-based asynchronous and synchronous chat, telephone, and or videoconference. At 6-10 weeks post-cancer treatment (T2a), patients/couples also attend an in-person clinic where they are seen by an interdisciplinary team for sexual medicine assessment and prescription (note: additional in-person follow-up visits are provided as needed). The visit type and schedule are designed to maximize upfront patient education (T1), normalize treatment impact (T2), allow for early medical examination and prescription of sexual medicine (T2a), and provide long-term sexual rehabilitation (T3, T4, T5) (Figure 1)

**Assessment:** The SHC patient sexual health assessment is a three-step process comprising of a semi-structured clinical interview, completion of a standardized questionnaire package, and a physical exam. The semi-structured interview is performed by SCs during the patient’s first in-person visit (T2a). The comprehensive clinical interview documents the patient’s: 1) medical and psychiatric history, cancer type and treatment, gender, and sexual orientation; 2) previous and current use of sexual medicine or devices; 3) patient concerns regarding sexual desire, arousal, plateau, orgasm, body image, pain, satisfaction; and 4) concerns regarding relationship satisfaction and intimacy. The SHC patient questionnaire package includes the Miller Social Intimacy Scale (MSIS)-only 4 items, the Dyadic Adjustment Scale (DAS)-only 1 item, the Patient-Reported Outcomes Measurement Information System (PROMIS)-Full Profile Sexual Function and Satisfaction, the Generalized Anxiety Disorder-7 (GAD-7), the Patient Health Questionnaire-9 (PHQ-9), and satisfaction with SHC questionnaire. Additionally, patients are prompted to regularly complete sexual functioning trackers (Likert scale 1-low to 10-high) including sexual desire/interest, erection firmness (Male), lubrication (Female), sexual activity in the last month, sexual satisfaction, intimacy (couple), and body image concerns. The questionnaires are completed by patients at the end of each virtual care visit, while the trackers are completed per patient preference, with a minimum of once per virtual care visit. Finally, during the first in-person visit, if applicable, the patient will undergo a sexual medicine physical assessment. Combined, the SHC assessment is used to guide the development of a personalized biopsychosocial treatment plan.

**Intervention:** The SHC intervention is theoretically founded in a biopsychosocial framework combined with an interdisciplinary provision of care. The intervention consists of three major components: virtual access to education modules; virtual care facilitation by a sexual health counselor; and in-person clinic visits with an interdisciplinary sexual health team.

**Education Modules:** Patient/couple experience is tailored



**Figure 1** SHC Visit Schedule.

through the assignment of specific education modules based on the patient's cancer type, treatment type, biological sex, and relationship status (single or coupled). A total of eighty-one multi-modal education modules, inclusive of figures, photos, videos, and animations, were created specific to the physical, psychological, and interpersonal impacts of cancer and its treatment on sexual health (Table 1: Education Module Menu). Additionally, patients can further customize their experience by adding "patient preference" modules to their virtual experience (e.g. Unique Needs of LGBTQ2+). All education modules are founded based on internationally recognized guidelines, empirical research, and expert opinion. Combined with the educational modules the virtual platform offers access to symptom trackers and goal-setting strategies to empower participant self-management. Finally, the online clinic also features a professionally curated, digital, health library including electronic books, relevant leading articles, and videos on sexual health and rehabilitation.

Accounting for the seven cancers, the biological sex of the patient, and the cancer treatment options, a total of 32 unique patient streams were determined (e.g. a male bladder cancer surgery patient stream, a female bladder cancer surgery patient stream, a male bladder cancer surgery plus chemotherapy patient stream, etc.). Using the Education Module Menu, education

modules were embedded into each of the 32 unique patient streams based on known relevance to a patient's experience in that particular stream. For example, see Table 2 comparing the stream of a male bladder cancer surgery patient and a testicular cancer surgery patient.

**Virtual Sexual Health Counselors:** In an effort to "humanize the technology" and promote patient engagement [33], the SHC virtual care platform is facilitated by sexual health counselors via chat, telephone, or videoconference. The SHC counselors provide an additional layer of personalization through the provision of psychosexual education/guidance, supportive counseling, and motivational strategies to foster self-management and SHC treatment adherence. Training for our SHC counselors involves successful completion of the Sexual Health in Cancer Part 1 and Sex Counselling in Cancer Part II courses offered through the de Sousa Institute (<https://www.desouzainstitute.com>). The SHC counselors must also complete specialized training in virtual-based communication and documentation, and platform-based features designed to enhance participant-counselor interaction (e.g. participant engagement and tracker monitoring). Additionally, the SHC counselors receive applied clinical training through SHC Case Rounds and direct supervisor-counselor shadowing during in-person clinic patient encounters.



**Table 1:** SHC Education Modules.

<b>ALL PATIENTS</b>		<b>URINARY AND BOWEL</b>	
<b>Introduction</b> <ul style="list-style-type: none"> <li>➤ Sexual Health And Wellbeing As An Important Part Of Cancer Care</li> <li>➤ About The SHC</li> <li>➤ Understanding The Sexual Response Cycle</li> <li>➤ The Sexual Response Cycle And The Impact Of “Xxx” Cancer Treatment</li> <li>➤ Fear Of Passing Cancer To Partner</li> </ul> <b>Resuming Sexual Activity</b> <ul style="list-style-type: none"> <li>➤ Managing Your Expectations Of Recovery</li> <li>➤ Process Of Recovery And Anxiety About Sex</li> <li>➤ Physical Affection (Holding Hands, Hugs, Touch, Kissing)</li> <li>➤ Learn About Sexual Desire And Sexual Fantasy</li> <li>➤ Sensate Focus</li> <li>➤ Feel Good Look Good</li> </ul>		<ul style="list-style-type: none"> <li>➤ Urinary Leaks And Incontinence</li> <li>➤ Bowel Problems And Treatment Recommendations</li> <li>➤ Urinary Diversions</li> <li>➤ Neo-Bladder Leakage/Discharge</li> <li>➤ Sexual Activity And An Ostomy Pouch</li> <li>➤ Kegel Exercises</li> </ul>	
<b>Male Sexual Function - Physical</b> <ul style="list-style-type: none"> <li>➤ Erectile Dysfunction</li> <li>➤ Review Course Of Erectile Function Recovery</li> <li>➤ Overview Of Dry Orgasms</li> <li>➤ Overview Of Pro-Erectile Treatment</li> <li>➤ Pro-Erectile Treatment Decision-Making</li> <li>➤ Review Your Pro-Erectile Therapy...Again</li> <li>➤ “Re-Challenging” With Pro-Erectile Therapy</li> <li>➤ Orgasmic Dysfunction</li> <li>➤ Ejaculatory Dysfunction</li> <li>➤ Decreased Sex Drive</li> <li>➤ Hormonal Changes – ADT</li> </ul>		<b>Female Sexual Function - Physical</b> <ul style="list-style-type: none"> <li>➤ Vaginal Health</li> <li>➤ Overview Of Vaginal Reconstruction</li> <li>➤ Overview Of Vaginal Changes</li> <li>➤ Dilation</li> <li>➤ Lubrication</li> <li>➤ Dyspareunia</li> <li>➤ Orgasmic Dysfunction</li> <li>➤ Decreased Sex Drive</li> <li>➤ Hormonal Changes – Premature Menopause</li> <li>➤ Having Children During Treatment</li> </ul>	
<b>Male Sexual Function - Psychological</b> <ul style="list-style-type: none"> <li>➤ Increased Sexual Distress/Decreased Sexual Satisfaction</li> <li>➤ Distress Related To Body Image</li> <li>➤ RPLND Scar, Testicular Prosthesis, H&amp;N,</li> <li>➤ Sexual Performance Anxiety</li> <li>➤ Impact On Masculinity Beliefs</li> <li>➤ Disclosure And Starting New Relationships</li> <li>➤ What Is Good Sex?</li> <li>➤ Why Do I Engage In Sex?</li> <li>➤ Loss And Grief</li> </ul>		<b>Female Sexual Function - Psychological</b> <ul style="list-style-type: none"> <li>➤ Increased Sexual Distress/Decreased Sexual Satisfaction</li> <li>➤ Distress Related To Body Image</li> <li>➤ Impact On Femininity Beliefs</li> <li>➤ Disclosure And Starting New Relationships</li> <li>➤ Loss And Grief</li> </ul>	
<b>Sexual Wellbeing And Age</b> <ul style="list-style-type: none"> <li>➤ Critical Period In Development Of Sexual Identity</li> <li>➤ Sexual Wellbeing And Identity</li> <li>➤ Physical Changes Due To Aging That Affect Sexual Activity</li> </ul>		<b>Head &amp; Neck</b> <ul style="list-style-type: none"> <li>➤ Fear For Transmitting HPV</li> <li>➤ Pituitary Gland Dysfunction</li> <li>➤ Tracheostomy</li> <li>➤ Needing To Clear Trach</li> <li>➤ G-Tube</li> </ul>	
<b>Fertility</b> <ul style="list-style-type: none"> <li>➤ How Does Cancer Treatment Affect Your Fertility – Male</li> <li>➤ Fertility Preservation Options - Male</li> <li>➤ How Does Cancer Treatment Affect Your Fertility – Female</li> <li>➤ Fertility Preservation Options - Female</li> </ul>		<b>Social Support</b> <ul style="list-style-type: none"> <li>➤ Understand The Role Of Social Support</li> </ul>	
<b>All Patients</b> <ul style="list-style-type: none"> <li>➤ Acceptance, Adaptation, And Continued Support</li> <li>➤ Adaption To Changes In Your Sex Life</li> <li>➤ Continued Communication With Your Health Coach</li> <li>➤ SHC Is Not Going Anywhere</li> </ul>		<b>FATIGUE</b> <ul style="list-style-type: none"> <li>➤ Exercise, Fatigue, And Sexual Health</li> </ul>	
<b>Impact On Partner</b> <ul style="list-style-type: none"> <li>➤ Changes As A Partner</li> <li>➤ Changes Due To Age That Affect Sexual Activity As A Partner</li> <li>➤ Worry About Satisfying Your Partner</li> <li>➤ Worry About Hurting Partner</li> </ul>		<b>Impact On Couple</b> <ul style="list-style-type: none"> <li>➤ Intimacy</li> <li>➤ Intimacy As A Foundation</li> <li>➤ Prism</li> <li>➤ Challenging Common Interpersonal Misunderstandings</li> <li>➤ Fundamental Kindness</li> <li>➤ Loss Of Naturalness And Spontaneity</li> <li>➤ Worry About Satisfying Your Partner</li> </ul>	

Patient Preference Module
Unique Needs Of LGBTQ2+ Unique Needs Of Marginalized Minorities Cultural Factors And Sexual Health Mindfulness And Sexual Wellbeing Exercise And Sexual Health Sexual Health And Loss More on Pelvic Health Physiotherapy Pre-mature Menopause

**Table 2:** Example of Unique Patient Streams.

BLADDER CANCER	TESTICULAR CANCER
Pre-Tx	Pre-Tx
Sexual Health and Wellbeing as an Important Part of Cancer Care	Sexual Health and Wellbeing as an Important Part of Cancer Care
About the SHC	About the SHC
Understanding the Sexual Response Cycle	Understanding the Sexual Response Cycle
The Sexual Response Cycle and the Impact of Bladder Cancer Treatment	The Sexual Response Cycle and the Impact of Testicular Cancer Treatment
Fertility and Sperm-banking	Fertility and Sperm-Banking
Urinary Diversions	Scar and Testicular Prosthesis
Potential Changes In Your Erectile Function	Potential Changes In Your Erectile Function
Frequently Asked Questions	Frequently Asked Questions
Managing Your Expectations of Erectile Recovery	
6 wks Post tx	6 wks post tx
Revisiting Managing Your Expectations	
Overview of Pro-Erectile Therapy	Erectile Dysfunction and Erection Pills
Pro-erectile Treatment Decision-making	
Resuming Sexual Activity	Resuming Sexual Activity
Exploring And Expanding Your Sexual Repertoire	Exploring And Expanding Your Sexual Repertoire
Body Image – Adapting To Your Ostomy	Body Image – Adapting To The Removal Of A Testicle
	More on Fertility
3 mos post tx	3 mos post tx
Potential Changes In Your Desire	Potential Changes In Your Desire
Potential Changes In Your Orgasm	Potential Changes In Your Orgasm
Male Sexual Performance Anxiety	Male Sexual Performance Anxiety
Impact on Your Masculinity	Impact On Your Masculinity
Impact On Your Sexual Partner (Female)	Impact On Your Sexual Partner (Female)
If You Are Single...The Issue of Disclosure	If You Are Single...The Issue of Disclosure
Maintain Intimacy – understanding intimacy and passion	Maintain Intimacy – understanding intimacy and passion
Sensate Focus	Sensate Focus
6 months post tx	6 months post tx
Re-visiting Your Pro-Erectile Therapy	Re-challenging pro-erectile pills
Age and Sexual Health (Female Partner)	Age, Sexual Health, and Sexual Identity
Age and Sexual Health (Patient)	Grief as a Normal Emotional Response
Grief as a Normal Emotional Response	What is Good Sex?
What is Good Sex?	Why do I Engage In Sex?
Why do I Engage In Sex?	Common Interpersonal Misunderstandings
Common Interpersonal Misunderstandings	The Big Picture: Adapting to the Diagnosis and Treatment of Cancer
	Adaptation to Changes in Your Sex Life
	Understanding Your Social Support

	Continued Communication with Your Sexual Health Coach
	SHC is Not Going Anywhere
12 months post tx	
"Re-challenging" with pro-erectile therapy	
The Big Picture: Adapting to the Diagnosis and Treatment of Cancer	
Adaption to changes in your sex life	
Understand Your Social Support	
Continued Communication with Your Sexual Health Coach	
SHC is Not Going Anywhere	

**In-person Clinic Visits:** Patients/couples attend an in-person clinic where they are seen by an interdisciplinary team inclusive of urologists, psychologists, nurses, and SCs. During their clinic visit, patients undergo both a physical examination for presenting sexual dysfunction, and a psychosexual assessment for related psychosocial concerns. Where appropriate, clinic visits can also be used for in-person training in sexual medicine prescription such as intracavernosal injection training or vaginal dilator therapy. As well, the SC can schedule additional in-person follow-ups for patients requiring changes to their sexual medicine regimen, medical examination, and sexual medicine prescription.

**Quality Assurance and Research Program:** Embedded in the SHC is a quality assurance, improvement, and research program. At the core of this program is the SHC database (SHC-DB), an active database in which PRO data is serially collected, scored, and uploaded directly from the SHC platform. The SHC-DB includes data fields specific to patient demographics, patient engagement (e.g. rates of enrolment, attrition, completion), and clinic evaluation (sexual health questionnaires/trackers). The research program is designed to measure patient engagement, evaluate the effectiveness of SHC, and provide a 'real-world laboratory' for conducting biomedical and psychosocial research in sexual medicine.

## SHC Implementation

Implementation of SHC is guided by the Quality Implementation Framework and includes 1) identification of unique implementation factors within host sites, 2) creation of a systematic structure for implementation, 3) allowance for ongoing structure evolution, and 4) development of improvement strategies for future applications. In this regard, our team identified "site champions" for each of the seven cancer sites. The site champions participated in three brainstorming sessions designed to tailor integration of the SHC into patient workflow and clinic protocol. Additional key site group/clinic personnel were also interviewed to further explicate approaches to SHC integration into patient and practitioner experience. In total, 20 interviews were performed and a pragmatic qualitative analysis of the interview transcripts is currently proceeding. To further enhance the interview data, a clinic-embedded research assistant is also documenting clinic-based enablers and barriers to successful implementation. The SHC will employ known patient-based engagement approaches for online healthcare services including: establishing product legitimacy and security; usability

testing and enhanced functionality; participant and SC platform training; SC facilitation; information tailoring and guided usage; patient and HCP feedback; and automated reminder features. Combined, this data collection process is helping to inform the evolution of successful SHC integration strategies that serve to close gaps in sexual healthcare across cancer sites and within patient experience.

## CONCLUSION

The SHC is an innovative care model which has the potential to close the gap in sexual healthcare during a time of limited healthcare funds/resources. The SHC is designed as a transferable, stand-alone clinic which can be efficiently shared with cancer centers and other institutions providing care to cancer patients.

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