

## SEXUAL MEDICINE REVIEWS

## Sexual Recovery Following Prostate Cancer: Recommendations From 2 Established Canadian Sexual Rehabilitation Clinics

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## ABSTRACT

**Introduction:** Supportive sexual health care is much-needed adjuvant care to oncologic management for men with prostate cancer (PCa).

**Aim:** To inspire the initiation of biopsychosocial sexual health programming where it does not exist and to inform program enhancement in existing sexual rehabilitation clinics (SRCs).

**Methods:** This article reviews the combined 30-year experience of 2 well-established Canadian SRCs for men and their partners after PCa treatments, interwoven with empirical evidence.

**Main Outcome Measure:** To comprehensively review the biopsychosocial approach to sexual health assessment of men with PCa and their partners to direct the practicalities of running a successful and sustainable SRC.

**Results:** A full description of the biomedical and psychosocial approaches, inclusive of comprehensive sexual function, the penile rehabilitation controversy, and other medical and relationship issues affecting sexual adjustment, is provided to highlight the relevance of proper assessment and follow-through for sexual adaptation and adjustment. 10 recommendations for a successful SRC are discussed, including the principles behind developing a sustainable business plan, staff acquisition and training, budget, integration of treatment and research priorities, respectful and multidisciplinary approaches to care, and suggestions of visit formats, protocols, and questionnaires. We recommend a phased approach of an SRC into usual care with the option to provide accessible and equitable care to patients not within proximal access of treating institutions.

**Conclusion:** Sexual rehabilitation after treatment for PCa requires a complex treatment process. Providing sustainable sexual rehabilitation programming under the financially strained environment of the Canadian medical system is a challenge; therefore, to provide Canadian patients and their partners with comprehensive cancer care, they deserve a biopsychosocial approach combined with a creative and systematic implementation strategy. **Elliott S, Matthew A. Sexual Recovery Following Prostate Cancer: Recommendations From 2 Established Canadian Sexual Rehabilitation Clinics. *Sex Med Rev* 2017;X:XXX–XXX.**

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**Key Words:** Sexual Rehabilitation; Prostate Cancer; Biopsychosocial; Sexual Dysfunction; Clinic; Penile Rehabilitation

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## INTRODUCTION

Changes to sexual function and sexuality after prostate cancer (PCa) treatment are ubiquitous and distressing. Patients who undergo surgery (open or robotic), radiotherapy (external-beam radiation or brachytherapy), and/or androgen deprivation therapy (ADT) can expect to experience significant long-term impairment in sexual functioning and a substantive decrease in their health-related quality of life.<sup>1,2</sup> Distress is often greater in younger men.<sup>3,4</sup> Similarly, partners of patients experience distress resulting from changes in sexual activity and losses in relationship satisfaction.<sup>5,6</sup>

Given the prevalence of PCa, the pervasiveness of treatment-related sexual dysfunction, and the extent of distress, millions

of people in North America are likely affected.<sup>7</sup> Unfortunately, health care programming successful in alleviating the totality of the physical, psychological, and relational burdens of sexual dysfunction remains elusive. In consequence, this review, guided by empirical evidence, is a Canadian perspective suggesting principles associated with an ideal sexual rehabilitation clinic (SRC) for men treated for PCa and their partners, without outlining specifics of clinic space and time, staffing, and financial support. How these ideas and principles might be incorporated into the various operational and funding styles of various PCa treatment centers is beyond the scope of this review, but it is hoped this review will encourage sexuality care after PCa to go beyond the traditional focus of erectile dysfunction (ED) treatments alone.

This overview is from the perspective of 2 major Canadian sites recognized for their expertise in PCa and might not represent the view of all Canadian experts. However, we believe the biopsychosocial approach to care is necessary for an SRC, and each element is reviewed in this article. Fortunately, the literature is abundant in carefully considered studies and reviews of the individual topics outlined here, so our intent is to outline the major elements of a comprehensive SRC program for other interested parties to consider.

## BACKGROUND

PCa survival rates are as high as 95% at 5 years after treatment, with estimates that suggest most survivors can expect 10 to 12 post-treatment life-years.<sup>8</sup> Fortunately, in recent years, not only survival but also consideration of quality of life has become the zeitgeist. It is well understood from long-term quality-of-life studies that sexual dysfunction is pervasive and enduring in PCa survivorship.<sup>2,9</sup>

Unfortunately, sexual dysfunction after PCa treatment is often marginalized owing to health care practitioner (HCP) and patient variables. Many HCPs spend little or no time discussing sexual health concerns with their patients because of their own discomfort in talking about sex or feeling inadequately trained to do so.<sup>10,11</sup> Similarly, patients can feel ashamed of their sexual dysfunction, avoid talking about their concerns with their oncologists, or assume it is inappropriate to discuss with the oncology team member who is there only to manage cancer treatment or control.<sup>11,12</sup> Men with PCa might have beliefs regarding masculinity that further quell sexual health discussions.<sup>13</sup> With this propensity for discomfort and avoidance by practitioner and patient, it is not surprising that sexual dysfunction after PCa treatment is commonly sidelined, especially in a busy clinic.

Sexual rehabilitation after PCa conventionally focused almost exclusively on erectile functioning. With the advent of penile rehabilitation in 1997 and the introduction of phosphodiesterase type 5 inhibitors (PDE5is) in the late 1990s, erection-focused treatment for patients after PCa treatment proliferated.<sup>14</sup>

Although early evidence for penile rehabilitation to improve spontaneous erectile recovery using PDE5is and other pro-erectile medications looked promising in animal models, empirical evidence has yet to support the effectiveness of penile rehabilitation in humans even with significant effort involving complex trial research.<sup>14–16</sup>

The broader research perspective in PCa sexual rehabilitation underpins the complexity of sexual dysfunction in patients with PCa beyond the well-studied downstream erectile effects of surgical or radiologic intervention. Poor adherence to pro-erectile therapies is believed to be related to a patient's masculinity beliefs that include guilt, depression, loss of confidence, anxiety, and anger associated with dependence on pro-erectile therapies.<sup>13,17</sup> Patients and partners also object to the lack of naturalness and spontaneity associated with these medications and devices.<sup>17</sup> Couples report experiencing grief over the loss of their previous sex lives, struggling with adaptation and acceptance of changes in sexual activity, and describe decreases in overall relationship intimacy.<sup>18</sup> It is apparent that a primary focus on erectile function is not going to solve the significant survivorship concern that patients and couples have after PCa, and that the totality of sexual rehabilitation must be addressed.

Encouragingly, sexual rehabilitation in PCa is transitioning to a biopsychosocial model of care.<sup>19,20</sup> Inclusive in this model of care is the biomedical assessment and treatment of physiologic and functional aspects of sexual functioning including alterations to sexual drive (especially with ADT), ED, ejaculatory and orgasmic changes, penile shortening, bladder and bowel alterations, and motor sensory changes.<sup>21</sup> In addition, assessment and treatment are focused on the psychosocial experience of patients including emotional and relational features of sexual dysfunction including managing expectations, anxiety and normalization, feelings of lack of control, avoidance, pro-erectile treatment decision making and sexual integration, and acknowledgment of the distress secondary to altered ejaculation and orgasm.

## BIOMEDICAL APPROACH

### Importance of Preoperative Baseline Sexuality Assessment

Preoperative baseline functioning should be assessed for several reasons: medically it is vitally important, but it also lays the foundation of rapport and trust between patient and HCP, provides an opportunity to set realistic expectations, and identifies the importance of particular sexual acts or needs of the patient for future rehabilitation goals. Identifying whether the man is single or partnered and what sex his partner is eliminates incorrect assumptions made by the HCP that can lead to embarrassment for the 2 parties. The level of sexual desire and frequency of sexual activities alone or with a partner within the previous year should be documented, in addition to any changes to desire or erection that have occurred since the diagnosis of PCa. Clear documentation of erectile capacity by some form of

quantifiable scale of erectile quality, preferably by the International Index of Erectile Function (IIEF) or the Sexual Health Inventory for men (SHIM),<sup>22,23</sup> should be used to compare erectile changes after treatment, inclusive of the existence and quality of erections during rapid eye movement sleep, masturbation, or partnered activities. Pretreatment concerns with the ability to control ejaculatory timing, consistent delayed or premature ejaculation, or ejaculatory fluid issues should be identified. Questions concerning orgasm should include the pretreatment subjective quality of orgasmic sensations, such as orgasmic intensity and duration. Opportune teaching moments can occur when assessing ejaculation and orgasm, such as clarifying the difference between the 2 for future discussion. Providing clear information on such facts not necessarily known or appreciated by the patient, such as an erection is not required for orgasm to occur, that ejaculatory fluid will be lost with prostatectomy and lessened by other treatments such as radiation or ADT, and in general genital sensation remains intact after PCa treatments, can be given (such information also can be given in group educational sessions). Such assessment provides an opportunity to identify the relative sexual importance ejaculatory or orgasmic changes can have for the patient, and whether future fertility is wanted. Further, any pre-existing continence or pain issues noted with high arousal or ejaculation or orgasm should be documented.

General health parameters need to be included in the pretreatment assessment. Age, comorbid diseases, PCa size and grade or stage, and projected cancer treatments allow for better estimation of erectile return. Other relevant pretreatment sexual concerns or dysfunctions of the patient and/or his partner and current sexual frequency and health-related issues (ie, sexual positioning challenges with such conditions as arthritis or altered hand function after stroke limiting pro-erectile options) should be documented. Furthermore, a baseline serum testosterone level and depression screen before PCa treatments should be obtained and correlated with pretreatment sexual functioning.

Testosterone plays a major role in sexual functioning, and hypogonadism can lead to decreased libido, ED, decreased frequency of morning erections, and decreased sexual performance.<sup>24</sup> Regardless of the presence of PCa, the level of testosterone declines with advancing age and chronic illnesses. For example, approximately 90% of men with type 2 diabetes have positive symptom scores for testosterone deficiency syndrome, and 3 fourths of men with type 2 diabetes will have ED.<sup>25</sup> Hypogonadism also has been linked to depression and cognitive function, with some evidence of improvement with testosterone replacement therapy (TRT).<sup>26–29</sup>

Men treated for metastatic PCa will often undergo some form of ADT to lower their testosterone levels intermittently or permanently and will correspondingly suffer sexual side effects. Most men on ADT for PCa will never have a return to baseline levels of sexual function.<sup>30,31</sup> Although a recent study showed ejaculation time was not associated with serum testosterone levels

in a population of hypogonadal men,<sup>32</sup> castrate levels of testosterone are often associated clinically with low libido, ED less responsive to pharmacotherapy, and delayed orgasm.<sup>30</sup> Therefore, hypogonadism might exist before, or from, PCa treatments and the sexual side effects should be acknowledged. Furthermore, an explanation of changes expected with decreasing testosterone levels allows the patient the chance at adaptation before or after ADT is administered.

An analysis of prospective studies has clearly established a lack of association between the risk of PCa and endogenous serum testosterone concentrations.<sup>33</sup> Given the significance of testosterone levels on sexual function and quality of life, the recent Multidisciplinary Canadian Clinical Practice Guideline on the Diagnosis and Management of Testosterone Deficiency Syndrome in Adult Males<sup>34</sup> stated that several investigations have found that TRT is not associated with clinically significant increases in prostate-specific antigen or an increased risk of PCa. They also state that TRT is a relative contraindication in men who have been treated for localized PCa (with surgery or radiotherapy), but those who are currently without evidence of active disease (ie, measurable prostate-specific antigen or its progression, abnormal rectal examination, evidence of bone or visceral metastasis) and who show symptomatic and biochemical testosterone deficiency can be cautiously considered for testosterone therapy if proper monitoring is done. They further state that TRT is absolutely contraindicated in men with metastatic PCa and in men with treated PCa who are at high risk of recurrence.<sup>34</sup>

## Sexual Functioning

In this review, sexual functioning refers to the male physiologic processes of sexual desire (libido), erectile functioning, ejaculation (inclusive of antegrade ejaculation and ejaculatory latency), and orgasmic ability and quality. All these processes are accompanied by the man's personal perception of these functions in addition to any concurrent distress (or lack thereof) within himself and in sexual relationships. Furthermore, if the patient is partnered, assessing his sexual function also is a time to acknowledge the dyadic effects of coping with sexual changes and offer reassurance that the partner will be included in the pathway of sexual rehabilitation. The real impetus for optimum sexual recovery lies with the optimism with which the HCP encourages greater exploration and intimacy.

## Sexual Drive or Sexual Interest

Sexual drive (libido) is the interest and willingness to seek out sexual experiences for physical or emotional gratification. Levine<sup>35</sup> defined 3 components of libido: (i) biological (the urge to seek out sexual activity and/or to be sexually satisfied), (ii) motivational (the psychological recognition of the physical or emotional sexual payoff of being sexual), and (iii) wish, which incorporates the cultural ideals, values, and rules that the person lives in socially. After PCa diagnosis and treatment, all

3 components can be affected and can even result in decreased sexual initiation cues and physical affection. In some cases, loss of affectionate gestures outside the bedroom can be more distressing to the partner than the loss of sexual activity, because intimacy itself becomes challenged. Alternatively, for some couples, PCa diagnosis and treatment grant permission to explore wider options and release past suppressions. For those couples, sexuality can even take on new forms of erogenous pleasure that could increase sexual motivation.

Biologically, the decrease in testosterone levels with age or illness and the neurochemical changes with sexual disappointment and/or depression can weaken the “inner urge” or “want” to be sexual or have sexual release. Decrease in sexual functioning capability and appearance of other treatment issues (ie, urinary incontinence) lead to insecurity and embarrassment, drastically weakening the “motivation” to be sexual. “Wish” can be affected by alterations in financial earning or athletic capacity that can affect masculine roles, and role reversal in the home with partners owing to illness can interfere with the traditional expectation of male sexual initiation. Furthermore, partner reaction and expectations surrounding PCa can impede, interfere, or dampen sexual motivation even if the partner is well meaning and supportive.

Men undergoing ADT with castrate levels of testosterone often experience loss of libido.<sup>30,36</sup> The disconnect of low to no libido and pursuing an erection or participating in sexual activities without a biological urge is new for them, but nonetheless they might want to resume sexual activity to please their partner, retain former intimacy, or attempt to normalize their situation by retaining past practices.

For all patients, unnecessary HCP assumptions or inquiry into their rationale for wanting to continue being sexual despite loss of sexual desire only causes unnecessary defensiveness and guilt for the patient. Instead, for men on ADT, psychosocial interventions should be used to help guide the patient through the process of adaptation and acceptance. Providing these patients and partners with psychoeducation on the course of recovery and strategies to avoid singular focus on penetrative sex and challenging negative thinking patterns can serve to restore interest and motivation to engage in sexual activity.

## Erection Dysfunction

A recent review on post-prostatectomy ED<sup>16</sup> corroborated the importance of a thorough preoperative sexual assessment, inclusive of oncologic and functional parameters, to allow for correct estimation of the potential risk of postsurgical ED and for appropriate patient counseling to optimize treatments to match the patient’s wishes and expectations. Spontaneous recovery of baseline erectile function, especially after radical prostatectomy (RP), has been found in only up to 30% to 60% of patients.<sup>37–39</sup> Wittmann et al<sup>40</sup> found that men, despite preoperative counseling, continue to have unrealistic expectations of urinary and sexual functioning after prostatectomy.

Therefore, the preoperative assessment is simply one of the many opportunities to moderate expectations to a realistic level and to de-emphasize the goal of “return to baseline erectile function,” which is rarely obtained.

In fact, sexual function can be expected to be forever changed from very minor to major ways after PCa. To lessen unrealistic expectations, providing information on expected timing and prognostic factors for erectile function recovery is important. Regardless of how aggressive treatment is, it is unrealistic to expect spontaneous and nocturnal erections after RP within the first few months after treatment,<sup>41</sup> although having the ability to have a spontaneous or pharmacologically induced functional erection within 3 months after RP is a good prognostic sign.<sup>38</sup> Most patients will experience some functional recovery within 6 to 36 months, with most having some recovery within 12 to 24 months.<sup>38,41</sup> In 1 study aimed at predicting long-term erectile function after PCa treatments (inclusive of radical prostatectomy, external-beam radiotherapy, and brachytherapy), 37% of all patients and 48% of those with functional erections before treatment reported functional erections 2 years after PCa treatment, and 53% of patients without penile prostheses reported use of medications or other devices for ED.<sup>42</sup> Partners need to be included in the process to prevent divergence in expectations and to decrease anxiety about meeting the partner’s needs.<sup>41</sup>

In an SRC, providing physical and psychological targeted interventions to improve a patient’s health to decrease the incidence and severity of current and future impairments should be considered.<sup>43</sup> 3 aspects affecting future erectile function can be addressed: pre-habilitation, penile rehabilitation, and erection attainment. The former is untested, the middle is controversial, and the latter is standard practice.

Pre-habilitation is the process of optimizing physical functionality preoperatively or before treatment to enable the individual to maintain a normal level of function during and after surgery and in cancer work usually applies to exercise or functional tasks. For sexual rehabilitation, is there an opportunity to use targeted interventions to decrease treatment-related morbidity, increase cancer treatment options, and improve physical and psychological health outcomes<sup>43</sup> using pretreatment sexual vigor through exercise for psychological benefit? To date there have been no controlled studies looking at the effect of pre-habilitation on erectile recovery after PCa treatments, although a protocol for a multicenter pilot randomized controlled trial of pre-habilitation vs usual care after RP to estimate effect sizes to inform future sample size determination in subsequent trials was outlined.<sup>44</sup> Although the use of PDE5is before treatment to maximize the recovery of erections after treatment has not been well studied, this practice is often encouraged by the HCP based on the notion that improved blood flow and oxygenation before surgery might “set up” a maximal healing environment and serve to educate the patient and couple on the appropriate use and incorporation of the medication for sexual activity and lessen uncertainties associated with the physiologic response. However,

it also can set up post-treatment erectile expectations. More research is needed.

Penile rehabilitation is defined as the use of any pharmacologic agent or device after PCa treatment that maximizes erectile function recovery and/or long-term erectile function. The primary goal is preservation of penile tissue by preventing alterations of the smooth muscle, limiting venous leak development, and minimizing penile shortening. The secondary goal is to use fewer invasive erectile interventions after PCa treatment, such as the use of PDE5i vs intracavernosal injection (ICI). Ideal penile rehabilitation should be effective, convenient, not too costly, and have minimal side effects on the patient.<sup>45</sup>

As mentioned earlier, the clinical validity of penile rehabilitation has been under scrutiny. Most studies evaluating the efficacy of PDE5i have relied on self-reported outcomes, which can lead to response bias, overall have not shown that PDE5i contribute to complete restoration of spontaneous return of erectile function.<sup>45</sup> There are data “for” penile rehabilitation, such as recent literature supporting the use of an on-demand approach of PDE5i to treat ED after non-nerve-sparing RP by facilitating PDE5i-assisted erections and preserving some penile length,<sup>46</sup> and “against,” such as not enough clear evidence to support an algorithm for PDE5i use in erectile recovery.<sup>45,46</sup> Other readings address the current controversy more thoroughly.<sup>45</sup> More recently, however, the use of once-daily tadalafil in humans was found to assist with the maintenance of cavernosal tissue integrity and associated short time to erectile function recovery after nerve-sparing RP.<sup>15,47</sup> Avanafil also has shown some improved IIEF erectile function scores after 12 weeks compared with controls in men undergoing nerve-sparing RP.<sup>48</sup>

Although there have not been large trials looking at combination therapy, a recent review noted that PDE5i and ICI together in the context of penile rehabilitation protocols have shown positive results in erectile recovery, but that high patient motivation and adherence to protocol are required for this type of success.<sup>16</sup>

Although controversial, the consensus seems to be that doing something is better than doing nothing, and penile rehabilitation protocols are prevalent, although the actual drug or aid and timing are not clearly identified.<sup>16,38</sup> Current penile rehabilitation programs are labor intensive, lack standardization, and have unclear outcomes, yet for RP, there is evidence that early onset of penile rehabilitation, such as within the first 6 months preoperatively,<sup>49</sup> and long-term compliance<sup>50</sup> appear to improve erectile recovery.

That said, comparing the pros and cons of adding penile rehabilitation to a sexual rehabilitation program is of value. The “pros” to encouraging penile rehabilitation after PCa treatments are empowering the patient by doing something, vs the wait-and-see approach, and providing an erection (often medically generated by a vacuum erection device [VED] or injection) not

only for sexual purposes but also for the visual and psychological confirmation that the erection is still attainable. The “cons” include costs of medications such as PDE5i (that might not generate an erection) started before or soon after treatments, potentially unrealistic expectations that penile rehabilitation treatments will result in better erections than if left to spontaneous recovery alone, and poor compliance and drop out.

In a survey of practice of US urologists, penile rehabilitation was commonly used (particularly the regular use of PDE5i for 12 to 18 months after RP),<sup>51</sup> with most (86%) incorporating some form of penile rehabilitation in their practice. An identical percentage of urologists also used penile rehabilitation in a recent German study.<sup>52</sup>

Because it is not realistic in a time-limited clinical visit to review all the controversies presented in numerous publications and conference proceedings, it will remain up to each SRC to make an informed choice about providing penile rehabilitation. However, many patients and their partners have a keen interest in this subject and, understandably, have many questions for the physician. Beyond providing a short written summary of the issues and/or resources and offering the patients a personal choice, the decision to use a penile rehabilitation strategy ends up being the balance between the perceived value to the patient and the potential benefit. Importantly, no significant harm of PDE5i rehabilitative use has been demonstrated provided patients understand the side effects and costs.<sup>45,51</sup>

Therapies for erection attainment after surgery and radiation treatments are similar. Surgical ED is immediate with some potential for recovery based on nerve regeneration in bilateral nerve-sparing RP, whereas brachytherapy and external-beam radiation (especially in combination with other treatments) cause ED over a protracted period as nerve and vessel damage progress. There is even a decrease in erectile function in patients who have not received radical treatment, the etiology of which is believed to be psychologically based.<sup>53</sup> Ongoing erection problems after PCa treatments usually stem from neurogenic or vascular origins. However, when the focus is on medical management of ED, the risk is that psychological variables might be forgotten or downplayed.

When assessing the efficacy of any ED therapy, it is vital to talk about 2 major themes: realistic expectations with respect to the patient’s baseline erectile function and the type of PCa treatment received and the sexual goals of the patient (and his partner).

Remaining nerve function allows the use of PDE5i to be effective, especially over time with nerve regrowth, using the nitric oxide and cyclic guanosine monophosphate (cGMP) second messenger pathway, because PDE5i medications require the release of neuronal nitric oxide through centrally initiated sexual arousal. The use of the smooth muscle relaxant prostaglandin products (not requiring the nitric oxide and cGMP pathway, but the prostaglandin E and cyclic adenosine monophosphate

[cAMP] pathway) are more effective with intracavernosal placement (such as with prostaglandin E<sub>1</sub> alone or in combination with papaverine and phentolamine) than with intraurethral placement through the spongiosum. Various oral drugs using central modulation of dopaminergic pathways also can assist erections but are not as successful as the oral PDE5i.<sup>54</sup> VED therapy after surgical or radiation treatment for PCa is rapidly gaining popularity, because it is not dependent on nerve status or even to some extent on vascular status and theoretically can play a role in corporeal rehabilitation and prevention of veno-occlusive dysfunction after RP by facilitating tissue oxygenation, decreasing cavernosal fibrosis in the absence of nocturnal erections, and preserving penile length.<sup>55</sup>

Combination therapy can be effective for severe ED and salvage cases of failed monotherapy. Combination therapies typically include the use of PDE5i in combination with VED, androgen supplementation, and other miscellaneous pro-erectile medications such as yohimbine. On labeling, combination with PDE5i and other PDE5i or other ED therapies is not recommended, mainly because of the possible decrease in blood pressure but also the theoretical increased risk of priapism. However, most combination therapies have not only proved clinically safe but are needed in more severe ED. Caution should be maintained for the use of PDE5i and ICI, considering their potential benefit from 2 second messenger smooth muscle relaxant pathways (cGMP and cAMP), because 1 study showed an increase in the number of adverse effects per patient compared with monotherapy groups.<sup>56</sup> All physicians should be encouraged to manage ED, including ED beyond the use of PDE5i, and combination use of pharmacologic and mechanical (ie, PDE5i and VED) therapies is generally safe. ICI can be safely instructed by physicians and nurses with minimal training for the HCP, but dosing should be done cautiously. Some of the more difficult ED cases (especially requiring ICI in addition to other erectogenic drugs) might require the expertise of an urologist or sexual medicine specialist. For men with PCa, there is evidence that the combination of PDE5i with VED improves post-RP erectile recovery over VED alone.<sup>57</sup> A good review of the topic of combination therapies can be found elsewhere.<sup>58</sup>

Penile prostheses are used for severe ED when reversible methods to achieve an erection of penetration quality are unsuccessful. They also can be placed concomitantly with artificial urinary sphincter placement for those with severe incontinence.<sup>59</sup> Alternatives for severe ED for those patients not wishing surgery include the use of non-invasive over-the-counter aids that substitute for an erection or assist a flaccid penis for penetration. Such aids include a belted prosthetic phallus, penis sleeves, penile extenders, and external penile support devices. These might or might not include vibratory enhancers and often are adequate for penetrative activities or supplemental stimulation to reach orgasm.<sup>60</sup>

Novel disease-modifying approaches might add or supersede our current penile rehabilitation approach, such as managing the

injured cavernosal nerves intraoperatively. These include the use of drug-eluting stents, regenerative stem cell and platelet-rich plasma therapies aimed at improving oxygenation, and decrease of fibrosis. Erythropoietin has been investigated as a potential therapy for post-RP ED with some success in rat models.<sup>61</sup> Erythropoietin receptor expression has been found in the human urogenital tract, immuno-localized in the prostate, neurovascular bundle, and penis.<sup>61,62</sup> Penile vibratory stimulation, through the stimulation of branches of the pudendal nerves that lie along the penile shaft, causes a reflex parasympathetic erection through the activation of nerve terminal endings that release nitric oxide and, hence, cGMP and cAMP that cause cavernosal smooth muscle dilation.<sup>54,63,64</sup> Rat model experiments using adipose-derived stem cells, which might exert their benefit through a paracrine mechanism<sup>65</sup> for cavernosal nerve repair or regeneration, have been successful. Acellular scaffolds from autologous vein grafts<sup>66</sup> or the use of NanoShuttle magnetic nanoparticles have been developed to try and prevent the “washout” of stem cells from their site of application in the penis.<sup>67</sup> Low-energy shockwave therapy on the rat penis might have a biological effect by upregulating cell proliferation through the activation of integrin receptors and the Rho-ROCK-Src-ERK signaling pathway and promoting multilineage differentiation of mesenchyme stem or progenitor cell lines through the ROCK-Cot-Tpl2-MEK-ERK signaling pathway.<sup>40</sup> Other novel factors to improve the neural-glia interaction and assist with cavernosal nerve repair<sup>68</sup> in the rat model include inhibition of RhoA and Rho-associated protein kinase (ROCK), which mediates the caspase-3-dependent nitrergic neuronal apoptosis after cavernosal nerve injury.<sup>69</sup> Pioglitazone, which increases the expression of endothelial and neuronal nitric oxide synthase, has resulted in improved erectile function in rats with bilateral cavernosal nerve injury,<sup>70</sup> and endothelial mediated dependent anti-inflammatory mechanism of annexin-A1 has been shown to protect the corpus cavernosum against fibrosis.<sup>71</sup>

## Ejaculatory and Orgasmic Changes

Loss of ejaculate occurs with surgical prostatectomy, and loss or decrease in ejaculate volume is seen with brachytherapy, external-beam radiation, and ADT. Ejaculate after brachytherapy might be temporarily discolored or contain blood. For some men, these changes can be distressing if there is sexual value placed on having normal-appearing ejaculate and/or there are fertility concerns. Regardless of age, men should be asked about fertility wishes before PCa treatments begin.

Changes to orgasmic quality include anorgasmia, decreased intensity of orgasm, dysorgasmia (painful orgasm), and climacturia (loss of urine at orgasm). Greater orgasm preservation is gained with greater nerve sparing but might not be attainable in approximately 1 third of men after RP, with another 1 third noting decreased orgasmic intensity and approximately 15% having pain with orgasm.<sup>72,73</sup> Dysorgasmia is often self-limiting but can take up to 24 months,<sup>74</sup> but tamsulosin has been trialed

to try and decrease what is believed to be pelvic floor spasm.<sup>75</sup> A study of 239 patients demonstrated that after RP 22% had no change in orgasmic intensity, 37% had decreased orgasmic intensity, and 4% reported a more intense orgasm than before.<sup>73</sup> Of almost 1,000 men after robotic-assisted laparoscopic prostatectomy, only 27% had a reliable ability to reach orgasm 3 years after treatment.<sup>76</sup> Poor orgasmic ability was associated with being older, poor erectile function (using erectile aids increased the ability to reach orgasm), and a lower quality of life.<sup>76</sup> Most patients treated by prostate brachytherapy conserve orgasm after treatment, although at least half describe an altered orgasm (weak, difficult, absent).<sup>77</sup>

In men undergoing ADT, orgasm can require a much longer time of stimulation because of impairment of sexual desire and arousability related to central nervous system effects and an increase in the orgasmic threshold due to castrate testosterone levels.<sup>30</sup> Sometimes the use of vibratory stimulation can assist these men. Men who embrace or adapt to their sexual changes with ADT, including any feminization, could find a new way to express their sexuality and arousability.<sup>78</sup>

### Penile Shortening

The perception of penile shortening is a common complaint of men after RP and could be related to the early sympathetic hypertonia and delayed cavernous nerve injury-associated structural alterations in the penis.<sup>79</sup> There is some evidence that the self-perceived finding of penile shortening is dependent on erectile potential,<sup>80</sup> degree of nerve sparing,<sup>81</sup> and abdominal weight gain. There also is some evidence that stretched penile length can revert to the preoperative length by a year, if not sooner.<sup>82</sup> There also is an increased incidence of Peyronie disease (16.7%) in men after RP compared with the general population, which could be related to the pro-fibrotic state, but further studies are needed to elucidate this.<sup>83</sup>

### Bladder and Bowel Alterations

Changes to bladder and bowel function affect sexuality. Embarrassment over incontinence management or control of such functions before, during, or after sexual activities, and associated self-image and hygiene issues, such as continual pad or diaper use or odor, are often noted, especially after RP. Severe incontinence can result in social isolation and even refusal of any genital touch. In general, bowel function is often preserved except for PCa treatments that can affect bowel wall integrity,<sup>9</sup> such as radiation, or metastases that can interfere with nerve function or lead to pain.

Urinary issues after RP are most often due to functional damage of the internal sphincter. They are less common after non-surgical PCa treatments, such as radiation, but postradiation cystitis and urinary tract infections can be significant problems decreasing sexual activity.<sup>9</sup> However, urinary incontinence is bothersome in at least half the patients with treated PCa,<sup>21</sup> can cause avoidance of sexual activity, and is associated with depression, anxiety, and a decreased quality of life.<sup>84</sup>

3 types of urinary incontinence are associated with sexual activity. The immediate release of a small amount of urine with a spontaneous sexual thought or arousal is not within voluntarily control. Sexual incontinence is urinary leakage with high sexual arousal despite usual daytime continence. Climacturia, the involuntary release of urine with orgasm, and sexual incontinence can be somewhat controlled with dedicated pelvic floor therapy and awareness of pelvic floor contraction before certain activities, similar to non-sexual times, and conscious emptying of the bladder before sexual activity. Approximately half the men presenting with climacturia can be managed with penile tension loops designed to compress the urethra,<sup>85</sup> but this technique might be difficult to use if there is concomitant ED.<sup>21</sup> Although small volumes of urine at orgasm can be captured by the use of a condom, condom use is not usually welcomed in older men who might already feel challenged with penile sensitivity in intercourse.

Maximal and submaximal muscle training of the pelvic floor muscles has been shown in the urologic population to alleviate symptoms of stress and urge urinary incontinence, post-micturition dribble, fecal incontinence, and/or ED (especially seen with a weak ischiocavernosus muscle).<sup>86–88</sup> In 1 study, 52 patients selected for RP were prospectively randomized to a treatment group (n = 26) receiving pelvic floor biofeedback once a week for 3 months and home exercises or a control group (n = 26), in which patients received verbal instructions to contract the pelvic floor. Urinary and erectile functions (evaluated with IIEF-5 score) were evaluated at 1, 3, 6, and 12 months postoperatively, with 47.1% of the treatment group showing potency compared with the 12.5% in the control group. A strong association between recovery of potency and urinary continence was observed, with continent patients having a 5.4 higher chance of being potent.<sup>89</sup> Pilates and low-pressure exercises also have been noted as novel approaches to optimizing urinary function after RP.<sup>90</sup>

### Motor and Sensory Changes

Pre-existing forms of motor (arthritis, stroke, etc) and sensory (pain, peripheral neuropathy, multiple sclerosis, etc) problems can affect sexual quality of life by limiting sexual positioning and distracting from arousal and orgasm. Alterations to the sensory and motor system after PCa treatments primarily occur from the spread of the cancer into bone or other organs that generate pain or vertebral collapse. Medications for pain also can complicate sexual function, particularly opioids (which lower testosterone levels) and antidepressants, which can affect drive, erections, and the ability to reach orgasm. The multidisciplinary use of physiatrists, physiotherapists, occupational therapists, and pain specialists can assist with sexual positioning and comfort and improve mobility and hand function for the use of treatments such as ICI. Mindfulness therapies and body mapping can be used to identify and nurture non-painful, pleasant physical touch to provide positive sexual experiences, regardless of erectile or orgasmic potential.

## PSYCHOSOCIAL APPROACH

The psychosocial component of an SRC refers to programming focused on the psychological and relational effects of sexual dysfunction resulting from PCa and its treatment. Undergoing PCa treatment and recovery is a frightening and novel experience for patients and their partners. Specific to the impact on sexual function, many patients and partners have not previously experienced significant changes to their sexual health. The goal of the psychosocial component of an SRC is to assist patients and partners with the process of adaptation to and acceptance of their sexual health changes.

The key to successful sexual adaptation is accepting sexual changes as an optimistic challenge rather than a defeat of manhood or destruction of the sexual relationship. The expertise and respectful approach of the HCP delivering such assistance are critical in the patients' and partners' interpretation of the meaning of the possibilities. Time must be allowed: hurried appointments will not be conducive to receiving information in a positive light. Other strategies assisting patients and partners include a comprehensive conceptualization of the components of what constitutes sexual well-being for any patient and/or couple, support in pro-erectile therapy decision making and incorporation into sexual activity, and reinforcement of resumption or maintenance of sexual activity.

### Psychosocial Assessment and Education

A comprehensive conceptualization of sexual well-being, inclusive of the partner experience, can be used to design a tailored, flexible, and effective biopsychosocial treatment approach.<sup>5</sup> The 1st step in this process is to assess psychosocial functioning as part of a biopsychosocial, comprehensive sexual health assessment. Areas of inquiry should include examination of psychogenic factors affecting sexual desire, arousal, and sexual satisfaction. Known psychosocial phenomena influencing sexual well-being, including performance anxiety, body image concerns, masculinity beliefs, isolation, intimacy issues, and grief and loss, should be assessed.<sup>11,13,17–19,91</sup> Similarly, if the patient has a partner, it is equally important to conduct a full sexual health history and assessment of the partner.<sup>11</sup> Given that psychosocial functioning is likely to change over the course of recovery, ongoing assessment is necessary to hone treatment over time within the SRC.<sup>5</sup>

Psychoeducation on the expected course of recovery and treatment is an important next step in helping patients and partners adapt to the sexual impact of treatment. As part of an SRC, psychoeducation should be comprehensive, ranging from the biological impact (eg, loss of erectile firmness and climacturia) through to the psychological impact of treatment (eg, feelings of embarrassment and feelings of loss) and ongoing, from pretreatment throughout recovery. Early pretreatment psychoeducation can help patients and partners acknowledge potential sexual dysfunction after treatment and manage unrealistic expectations, and ongoing psychoeducation can help to

normalize patients' and partners' experiences, decrease uncertainty, and alleviate overall anxiety. Similarly, providing the patient and partner with an understanding of the planned sexual health care they will receive after treatment is essential in increasing feelings of support and control.<sup>40,92</sup>

By combining the outcome of sexual assessments with the knowledge of treatment impact and course of recovery, potential vulnerabilities and patient and partner strengths can be identified. These vulnerabilities and strengths can create an intervention protocol equipped with pre-empting strategies that can be used in the process of adaptation and acceptance.

### Reinforcement of Resuming or Maintaining Sexual Activity

A key aspect of psychosocial programming in an SRC is the process of motivating, reinforcing, and guiding patients and partners in resuming or maintaining sexual activity, whether non-penetrative or penetrative. One of the strongest predictors of return of erectile functioning after PCa treatment is ongoing and continued sexual activity. Research has shown couples who engage in regular sexual activity shortly after treatment and on an ongoing regular basis are more likely to have return of erectile function.<sup>15</sup> Moreover, continued sexual activity does not necessarily refer to return to penetrative sex.<sup>93</sup> In helping patients and couples achieve sexual satisfaction through non-penetrative methods, patients and partners can be counseled in exercises such as Sensate Focus.<sup>94</sup> Moreover, research suggests that patients and partners who are willing to expand their sexual repertoire (eg, using sexual devices or toys, visual aids, and lubricants) might be more successful in responding to changes in sexual functioning.<sup>36</sup> Acceptance and usage of SRC recommendations require a supportive and encouraging approach by the HCP and information provision to allow for the patient and couple to feel confident in their pro-erectile treatment decision making.

### Pro-Erectile Treatment Decision-Making Support

The approach of an SRC is not to prescribe a pro-erectile therapy to a passive patient but rather to educate patients on treatment options and match patient and couple values, goals, and desires to appropriate treatment.<sup>95</sup> Patient education on pro-erectile treatment should include an in-depth description of each pro-erectile therapy, organizing these therapies into degrees of invasiveness and effectiveness, and personalizing the recommendations by considering the unique sexual health objective of each patient or couple.<sup>66</sup> Recommendations for patients and couples interested in early return or maintenance of penetrative sex should include more invasive but effective penile treatments such as ICI, whereas patients and couples who wish lesser invasiveness might use the VED or PDE5is. As noted earlier, it is important to ensure that patients and partners understand that choice of treatment option is not decided in a "one-off" assessment, but is an ongoing process that can result in change over

time owing to physiologic changes (eg, rechallenging with PDE5is after regular use of ICI after prostatectomy) and psychological changes (eg, initiation of ICI in response to a couple's desire to engage in penetrative sex sooner rather than later). Having the patient and partner involved in the treatment option and planning process can result in patients feeling more confident about their decision.<sup>96</sup>

### Providing Strategies for Incorporating Pro-Erectile Therapy Into Sexual Activity

Patients and couples complain about challenges in terms of naturalness and spontaneity.<sup>97</sup> Even for less invasive pro-erectile therapies such as PDE5is, the process of taking medication can interfere with the sensuality of their sexual experience. The challenge of incorporating pro-erectile therapy can be further exacerbated by losses in naturalness and spontaneity associated with "rehabilitation" vs "passion."<sup>97</sup> Although it can be common for an HCP to encourage patients and partners to engage in ongoing sexual activity with regular use of pro-erectile therapy, this "prescription" of sex is a difficult adjustment for many patients and couples and can cause them to metaphorically experience their bedroom as a laboratory.<sup>98</sup> Further, some men with high masculinity beliefs can struggle with using pro-erectile therapy, believing that it is "unmanly" to rely on medications for a full erection.<sup>17,99</sup> This overall struggle to incorporate pro-erectile agents or devices is evidenced by their lack of ongoing use in this patient population.<sup>100</sup> SRC counseling that provides strategies to overcome the loss of naturalness and spontaneity and a cognitive reframing of the meaning of medication and device use can result in greater uptake and long-term use of pro-erectile therapy.<sup>38,97,101</sup>

### DEVELOPMENT OF 2 SRCS IN CANADA

With the initiation of the PDE5i into the market in 1998 and the explosion of research and available information on erection function, pressure was placed on physicians by patients to take more interest in managing their ED and overall sexual health. Our programs arose from PCa management within the departments of urology at 2 major university-affiliated hospital sites. Although internationally recognized for expertise in the management of PCa, these 2 sites became aware of the need for a supportive care program to deal with sexual rehabilitation, a sensitive and time-consuming process that extended beyond what was being offered through traditional urology appointments.

One site in Ontario received pilot funding through philanthropy through the site's foundation. The keys to acquiring funds under the highly competitive environment of institutional foundation funding included identification of a gap in care as determined by serial collection of quality-of-life patient-reported outcomes<sup>2</sup>; a senior staff site champion (the director of the prostate center); and proposals for the efficient use of resources

encompassing economical human resources (eg, development of a HCP training program providing access to residents, interns, and students) and the exploitation of underused resources (eg, late Friday afternoon clinic space). Additional funding to explore the sexual health experience of patients and couples after PCa treatment<sup>97</sup> was received from the Canadian Institute for Health Research and from an educational grant supported by a pharmacology company (Eli Lilly and Company, Indianapolis, IN, USA). As a cornerstone to the site's overall comprehensive survivorship program and an integral part of usual care, the Prostate Cancer Rehabilitation Clinic has garnered further institutional support to expand to a within-site men's sexual health clinic in cancer care.

Initial funding for the pilot work in British Columbia looked at the sexual health needs of the patient population with a pharmacologic unrestricted grant (Pfizer Canada, Kirkland, QC, Canada) and local philanthropy. This resulted in some early publications<sup>102,103</sup> and a groundswell of interest among participating HCPs. Continued funding efforts since this initial work included competitive grant funding from the Specialist Services Committee (SSC), which is 1 of 4 joint collaborative committees that represent a partnership of the Government of British Columbia and the Doctors of British Columbia, and philanthropy to develop the site's Prostate Cancer Supportive Care (PCSC) Program, a comprehensive and multidisciplinary survivorship program to improve patients' and their partners' quality of life after a PCa diagnosis. Currently, the sexual health module is the most heavily used aspect of the PCSC Program. The initial SSC funding was complemented by additional SSC funding based on preliminary results. Prostate Cancer Foundation BC and more recently the Ministry of Health of British Columbia have provided funding to distribute the program in hospital sites across British Columbia. A goal for the PCSC Program is to be ultimately enveloped into hospital programming and supported by government or health authority funding, with accountability done through research and quality improvement.

Most recently, the 2 cancer centers and other centers across Canada developed a PCa-specific, facilitated, online Sexual Health and Rehabilitation e-Clinic (SHAReClinic) funded through Prostate Cancer Canada and Movember. The SHAReClinic is designed to provide accessible and sustainable supportive care across Canada and is currently being evaluated in a multicenter pilot study.

### GENERAL RECOMMENDATIONS FOR AN SRC FOR MEN WITH PCA AND THEIR PARTNERS

The following are practical recommendations for the development, design, and sustainability of a biopsychosocial SRC in Canada. These recommendations are based in part on empirical research and in part on our combined 30 years of experience in helping patients, partners, and couples cope with sexual dysfunction after treatment for PCa. As the process of compassionate and effective sexual health care after PCa treatment

continues to evolve, so do we expect these recommendations to progress. Our hope is that the following recommendations will inspire the initiation of sexual health programming where it does not exist and inform enhancement of programming where it already exists.

### Sustainable Business Plan

At the core of a practical and sustainable SRC is a robust business plan. Critical to any business plan is the establishment of a gap in care, the depiction of corrective empirically based intervention programming, and a vision and mission statement that embodies goals explicit to clinical care, education, and research. Specifically, the business plan should include the results of a needs assessment (involving patients, partners, and clinical staff) and the descriptions of a detailed model of care, care integration processes, education and training opportunities (eg, fellowships and internships), data acquisition and management strategies, an integrated data collection system, research priorities including program evaluation, budget, and required staffing, and a sustainability plan.

In developing an SRC business plan, the initial work is often performed gratis by motivated individuals (“early planning team”). It is recommended that the initial early planning team consist of physicians, psychosocial practitioners (eg, psychologists and/or social workers), nurses, PCa researchers, a program developer, and whenever possible patients and couples. We recommend that guidance is sought from within institution business consultants (eg, hospital-based business plan templates) or from external institutions with charitable interests, such as financial institutions, that might offer free advice and resources.

### Staff Acquisition and Training

In our institutions, the biomedical component is performed by a sexual medicine physician and/or interested urologist, urology residents and fellows, and specially trained sexual health nurses with training in sexual medicine. The psychosocial team is composed of a psychologist, psychology interns, and practicum students with training in sexual health and well-being. Accessible additional external consultations include cardiologists, endocrinologists, internal medicine specialists, psychiatrists, pelvic floor specialists, exercise physiologists, sex and marital therapists, dietitians, and practitioners of mindfulness-based stress reduction.

Overall, comprehensive sexual health care in patients with PCa and their partners involves a large amount of interdisciplinary HCP crossover such that treatment provided by each practitioner in the SRC is understood by all and reinforced with individual patients and partners.

It should be noted that outside major academic hospital settings, in-person training in sexual health medicine is difficult to acquire; however, in Canada there are several established online training courses available.<sup>104–107</sup> In addition, we strongly recommend that graduates of online training programs be

mentored for months with direct supervision in the sensitive interviewing and counseling skills necessary in this area.

### Integration of Treatment and Research Priorities

An overview of the expected research and its integration with the data collection should be done from the outset of the clinic. Following the overall vision, research should be incorporated such that intake forms and databases can be established properly. For screening, assessment, and outcome measurement, electronic data collection (eg, iPads) should be considered, if possible.<sup>108</sup> The savings associated with electronic data capture vs manual entry of paper questionnaires can be substantial. Moreover, the best database platform (eg, REDCap, DART-TECHNA)<sup>109–111</sup> should be carefully determined for services (eg, mainly clinical, mainly research, or a combination). The financial benefits of effective information technology solutions are an important consideration.

Within the development of the model and integration of care, timing of assessment and outcome measurement should be detailed. Baseline and ongoing assessments should reflect patient and partner experience in the domains of physiologic, functional, psychological, and relational well-being. At intake, a sexual health-based clinical interview should be performed inclusive of medical history, current medications, relationship status, sexual orientation, pretreatment sexual and relationship well-being, PCa treatment history including nerve-sparing status (if appropriate), history of pro-erectile agent or device usage, sexually related cultural beliefs and values, and overall goals of treatment. To complement the semistructured clinical intake interview, validated questionnaires should be incorporated into the ongoing assessment. Examples of assessments commonly used in the scientific literature include questionnaires on sexual function (eg, Female Sexual Function Index, Patient-Reported Outcomes Measurement Information System, SHIM-5, IIEF-15),<sup>22,23,112,113</sup> sexual distress and satisfaction (eg, Female Sexual Distress Scale, Sexual Satisfaction Questionnaire),<sup>114,115</sup> intimacy (eg, Personal Assessment of Intimacy in Relationships, Miller Social Intimacy Scale),<sup>116,117</sup> suitable grief and loss questionnaires, and those measuring overall quality of life (eg, Expanded Prostate Cancer Index Composite–26).<sup>118</sup>

We recommend the development of a treatment care plan that is amenable to trial, modification, and effectiveness appraisal. An example of this includes the newly developed Sexual Health Rehabilitation Action Plan (SHRAP), a written tool to guide patients and partners through the sexual rehabilitation process. The SHRAP is about to undergo a randomized trial to assess the efficacy of the using the SHRAP vs usual care in improving sexual adaptation of men with PCa and their partners.<sup>119</sup>

### Funding and Budget Proposal

Included in the business plan is a detailed budget for clinic operation. Budget considerations should include staffing (eg, physician, sexual health counselor, clinic manager, clerical

services, and research support); information technology support (eg, iPads for patient-reported outcome collections and database design and maintenance); clinic space (ie, availability and cost) including equipment and clinic supplies (clinic examination rooms, hardware, software, demonstration models, clinic disposables); expenses for meetings and conference presentations; and consultation fees (ie, exercise or dietary experts, business and fundraising advice). There are a number of avenues to solicit funding for an SRC: institutional (eg, hospital, university or private clinic), foundations (eg, host-hospital foundation, patient group foundations), not-for-profit granting agency (eg, Prostate Cancer Canada), industry grants (eg, unrestricted grants from pharmaceutical companies), philanthropy, and in Canada the potential of provincial and federal funding (often “matched” to other funding sources, an approach that also is common with foundation funding) once the clinic is established. This is a time for some optimism regarding funding because provincial cancer-care agencies are becoming increasingly interested in identifying and providing care for patient distress and impact on patient quality of life. In addition, not only survivorship, but also specifically the impact of sexual dysfunction on patient quality of life, has gradually come to the forefront of comprehensive patient care, attracting the attention of many stakeholders, including patients, clinicians, cancer regulatory bodies, researchers, and funding agencies. Overall, this approach to developing an SRC business plan budget recognizes the aspirations of key stakeholders (ie, hospital and institution administration, patients and partners, and clinicians) and provides a blueprint for operations, funding, and sustainability.

### Patient Visits

For timing of treatment, based on our experience, we recommend a pretreatment clinic visit combined with follow-up programming for a minimum of 2 years after PCa treatment. This recommendation also is based in findings from the scientific literature that erection recovery can continue to occur at least 2 years after PCa treatments.<sup>120</sup>

The pretreatment visit allows for baseline assessment and psychoeducation specific to sexual rehabilitation as part of usual care; SRC orientation; understanding the basics of sexual health; effects of PCa treatment on sexual health; what to expect after PCa treatment; management of expectations of recovery and pro-erectile therapy; and potential impact of urinary dysfunction. This pretreatment visit can occur any time before initiation of PCa treatment, with earlier contact allowing for pre-rehabilitation approaches that could enhance recovery (eg, physical activity intervention).<sup>44</sup>

The follow-up visits are designed to account for the physiologic process of erectile function recovery (after RP) or deterioration (after radiation treatment) that usually occurs during this critical 2-year period. We recommend the SRC contact be frontloaded, with most clinic visits occurring within the first year after PCa treatment, followed by less frequent visits in year 2.

Early visits ensure that surgical patients (and their partners) receive biopsychosocial support during the acute phase of sexual dysfunction and that radiation patients (and their partners) are informed and prepared for latent decreases in sexual functioning. Later visits, in the 2nd year after PCa treatment, serve to assist patients in adhering to the SRC's biopsychosocial recommendations. Unfortunately, we cannot recommend the ideal number of follow-up visits because this requires further empirical investigation and is often limited by existing funding or resources.

For protocol content of follow-up visits, we recommend the following topics: education on pro-erectile therapies, identification of goals aligned to the values and desires of the patient and couple, sexual rehabilitation treatment decision making, strategies to resume sexual activity, strategies for successful use of pro-erectile therapies, coping with sexual health concerns, non-penetrative and penetrative approaches to sexual activity, maintaining intimacy, managing grief and frustration, understanding the impact of age on sexual activity, identification and treatment of performance anxiety, understanding the impact of masculinity beliefs, coping with changes in sexual desire and fantasy, review of barriers and enablers to systematic use of pro-erectile aids, satisfaction with current use of pro-erectile aids and regimen, and adaptation to and acceptance of current sexual functioning.

### Use a Multidisciplinary Approach to Care

The goal is to coordinate multidisciplinary care such that the patient and partner receive physician and non-physician specialist care, at the proper time, in the right quantity, to improve sexual quality of life. The result is effective, efficient, and comprehensive care. Non-physician members of a health care team who can contribute to exceptional care can include registered nurses, psychologists, social workers, sexual health counselors, physiotherapists, pelvic floor physiotherapists, exercise physiologists, occupational therapists, and dietitians. Clinics can be coordinated within the clinic space and can be funded variably, from limited funded clinic sessions to patient-pay independent consultants.

### Individual (Patient or Couple) vs Group Format

An individual (patient or couple) vs group format can be used to enhance provision of personalized and intimate care.<sup>121–123</sup> Despite some advantages of group care (more cost effective, normalization through shared experiences, etc),<sup>124–126</sup> individual sessions allow for tailored care specific to the needs of the patient and partner, especially given the heterogeneity of sexual recovery of individuals over time. This does not preclude patient and partner access to SRC-run groups providing basic information on expected sexual changes and intimacy challenges or an internet-based forum specifically for PCa survivors who are supported, protected, and moderated by an HCP from the SRC.

### Include Expertise With Single and Coupled Patients, Same-Sex and Heterosexual Couples, and Be Sensitive to Cultural and Religious Differences

For single patients, SRC programming specific to issues related to disclosure can be considered. For couples, respectful, explicit efforts should be made to engage partners to participate. Men who have sex with men have different sexual health outcomes and goals compared with heterosexual men. Modification to programming to account for these differences is essential to equitable care.<sup>127</sup> Cultural and religious differences need to be acknowledged in sexual rehabilitation, including a modified approach to offering care and acceptability of sexual practices.<sup>128–130</sup>

### Phased Incorporation of SRC Into Usual Care

We advocate incorporation of the SRC into usual care through a phased approach to implementation to decrease upfront costs and resources. An example of a phased approach is to initially provide programming to patients with apparent localized disease who plan to undergo an RP. Then, programming can be extended to patients treated by other means and who have more advanced disease as the SRC momentum develops. Accordingly, a feasibility trial can be proposed that includes “go forward” metrics such as service uptake, attrition, patient–clinician satisfaction, and preliminary trend analysis of identified primary and secondary outcomes. In response to the feasibility trial, modifications can be made to further hone the SRC model of care in an effort achieve maximal effectiveness and efficiency.

### Provide Wide Access to Care

Face-to-face SRCs require proximal access to treating institutions. Online programming can be considered to provide accessible and equitable care for patients and partners who live at a distance from hubs of care. Although in its infancy, online sexual health programming in PCa is beginning to show promise.<sup>122</sup> Recently, Prostate Cancer Canada in partnership with Movember compiled a group of Canadian experts in sexual health and PCa to develop an online SRC. The resulting SHAReClinic was launched in August 2017 as a multicenter pilot research project using sexual health coaches (nurses, psychologist, or social workers) with outcomes expected in late 2018. Alternatively, satellite programs from the main SRC can be sprung throughout provinces or the country, as done in 1 site through provincial funding.

### CONCLUSION

Given the prevalence of PCa, PCa treatment sexual dysfunction and related distress, and the expected life-years of survival after treatment, the ideal SRC follows a biopsychosocial model of care. This supportive sexual health care is adjuvant to the surgical or oncologic care provided. Components of sexual desire and erectile, ejaculatory, and orgasmic functions must be considered

in the context of other biological functions such as urinary or bowel issues and motor and sensory challenges, while simultaneously acknowledging and incorporating the patient’s and couple’s desires and functional goals. The ideal SRC proposes to alleviate not only individual sexual dysfunctions but also the burden of physical, psychological, functional, and relational concerns stemming from PCa treatments. This philosophy is incorporated in the 10 recommendations, which follow the principles of sexual rehabilitation after PCa treatments, of which each clinic wishing to use a SRC can benefit from.

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