

# A multidisciplinary approach to the evaluation and management of interstitial cystitis/bladder pain syndrome: an ideal model of care

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**Abstract:** Interstitial cystitis/bladder pain syndrome (IC/BPS) is a complex syndrome that has long been treated with bladder directed therapies, which often fail to address the multiple underlying etiologies that can contribute to this disease process. This disease often involves symptoms that extend beyond the bladder and involve the pelvic floor making it crucial for clinicians to approach the patient using a multidisciplinary team. This article will discuss the underlying etiologies for IC/BPS and describe the multidisciplinary approach which we have found to be extremely successful in managing this patient population.

**Keywords:** Chronic pelvic pain; interstitial cystitis (IC); painful bladder syndrome; pelvic floor physical therapy (PFPT), multidisciplinary clinic

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## Background

Interstitial cystitis/bladder pain syndrome (IC/PBS) is a symptom complex that includes urinary urgency, frequency and pelvic pain. However, careful evaluation of these patients will most commonly identify other pelvic organ and non-pelvic organ symptoms. The terminology IC/BPS may incorrectly suggest that the bladder is driving these symptoms. In those patients with Hunner's lesions seen on cystoscopy, bladder-centric disease is confirmed and treatment that focuses on eradication of the lesions is relatively straightforward (1). Medications such as cyclosporine have been shown to reduce the recurrence and symptoms of Hunner's lesions (2,3). The properly selected patient with disease progression to a small, contracted, end-stage bladder can benefit from cystectomy with urinary diversion with high patient satisfaction (4). However, Hunner's lesion patients represent only about 10-15% of patients diagnosed with IC/BPS.

In the past, IC/BPS was thought to be an orphan disease and very few patients were diagnosed. However, for many reasons, including the influence of the pharmaceutical industry around available drug therapy, the diagnosis of IC/BPS was over-simplified. Clinicians were instructed to have their pelvic pain patients complete a "validated questionnaire" and if they reached a threshold score, they were diagnosed with IC/BPS and could be started on bladder directed therapies. In addition, the potassium sensitivity test (PST) was developed as the "gold-standard" to diagnose IC/BPS (5) without adequate data to support its use. This was promoted to gynecologists and urologists as a means to simplify the diagnosis of interstitial cystitis (IC). Unfortunately, it resulted in millions of patients being "labeled" with IC/BPS who were then unsuccessfully treated with bladder directed therapies. Subsequently the PST has shown to have poor specificity and sensitivity and is not recommended in the diagnosis of IC/BPS by the American Urological Association Guidelines on IC/BPS (6).

The lack of understanding of the underlying pathologies contributing to IC/BPS prevents a single true diagnostic test and has limited the development of meaningful treatments. Over 20 years of bladder directed therapy for IC/BPS sponsored by both industry and the National Institutes of Health (NIH) has shown no treatment to be superior to placebo (7) and subsequent studies on pentosan polysulfate has questioned its utility in the treatment of IC/BPS (3,8). It is crucial that we remain astute clinicians in the management of IC/BPS as the bladder may be an “innocent bystander” in a larger pelvic process (9).

### The complexity of the IC/BPS patient

Most patients with the diagnosis of IC/BPS have seen multiple providers and tried many treatments without adequate symptom control. A common mistake is to simply target the bladder. Pain is the hallmark of IC/BPS, however most patients do not have a single pain trigger. A careful history and physical exam is crucial in identifying the location of these triggers as patients frequently report pain in many body areas. A study mapping patterns of body pain in 193 patients showed that 73% of IC/BPS patients reported pain outside the primary IC/BPS site (i.e., vagina, lower abdomen, lower back, pelvis, and buttocks) (10). Because the majority of patients with IC/BPS have a complex pain condition that goes beyond the bladder, a multidisciplinary team approach has the best chance of making a meaningful improvement in the patient's symptoms.

### Role of the pelvic floor

Proper function of the pelvic floor muscles is important for normal bladder, bowel and sexual function. Unfortunately, evaluation of the pelvic floor is not routinely taught in medical school or graduate medical training. In normal voiding, one must be able to relax the pelvic floor, sending a signal to the brain for the bladder to contract. Pelvic floor muscle spasm can result in pseudo-dysynergia and obstructed voiding, leading to urinary urgency, frequency, hesitancy and pelvic pain. A tense and tight pelvic floor can result in referred pain to the vulva, rectum and perineum and is one of the most common causes of dyspareunia.

The European Society for the Study of Interstitial Cystitis (ESSIC) published guidelines to help diagnose IC/BPS and a key criterion for diagnosis is to rule out “confusable states” (11). One of the most common

confusable states is pelvic floor dysfunction (PFD). Myofascial pain and PFD are present in as many as 85% of patients with the diagnosis of IC/BPS. In a study of 186 patients with IC/BPS, 78.3% were found to have at least one myofascial trigger point on pelvic examination and 67.9% had six or more trigger points (12). A noxious stimulus may trigger the release of nerve growth factor and substance P in the periphery causing the mast cells in the bladder to release proinflammatory substances, resulting in neurogenic inflammation of the bladder wall. This can result in painful bladder symptoms, vulvar or vaginal pain. There may be a visceromotoric reflex resulting in the pelvic floor muscles being in a hypertonic contracted state. This hypertonic state results in decreased muscle function, increased myofascial pain, and myofascial trigger points. The pelvic floor muscles then become a source of pain even if the bladder is treated (13).

Several studies have shown that pelvic floor physical therapy (PFPT) with intravaginal myofascial release is an effective treatment for pelvic pain, urgency-frequency syndrome, and IC/BPS patients with PFD (14). PFPT works to stretch and elongate the pelvic floor muscles to provide prolonged pain improvement (15). In one of the only National Institutes of Health (NIH)-funded studies that demonstrated success over a sham, Fitzgerald showed that PFPT led to significant improvement in these patients compared to global therapeutic massage. In our practice, patients may receive transvaginal trigger point injections as an adjunct to PFPT. Langford *et al.* reported that 13/18 (72%) improved after the first trigger point injection (16). We perform trigger point injections in the office using local anesthesia that can provide immediate pain relief, and add corticosteroids to allow for more sustained relief. Recent studies have evaluated botulinum toxin for pelvic floor muscle injections for longer term relief. In a recent study, 28 women with IC and vulvodynia underwent electromyography guided pelvic floor injections with up to 300 units of botulinum toxin A. At 24 weeks of follow-up, about 80% of patients had improvement in their global response assessments and dyspareunia (17). This is a modality that warrants further evaluation for use in pelvic pain syndromes.

Along with PFPT we use local intravaginal medications such as diazepam and baclofen. Carrico and Peters evaluated 21 women 1 month after treatment with vaginal diazepam and noted 62% were moderately or markedly improved. Levator exam pain scores and vulvar pain scores improved (18). We emphasize that PFPT is the

foundation for treatment of pelvic floor muscle pain, and with limited data on intravaginal treatments, they are considered adjunctive therapies for treating PFD.

### ***Pudendal neuropathy***

Pudendal neuropathy can be associated with chronic pelvic pain, voiding and bowel dysfunction. A subset of these patients may suffer from persistent genital arousal disorder (PGAD), an under recognized and disabling condition (19). Many of these patients have been diagnosed with IC/BPS. There often is not a clear etiology but examples include compression injury from competitive biking and vaginal prolapse surgeries that place the pudendal nerve at risk. Patients typically have pain in the distribution of the pudendal nerve and may have associated PFD, vaginal pain, perineal or rectal pain, clitorodynia or PGAD. The pain is almost always worse with sitting and is refractory to most treatments. The Nantes criteria can help clinicians to identify pudendal neuropathy (I) pain in the anatomical territory of the pudendal nerve; (II) worsened by sitting; (III) the patient is not woken at night by the pain; (IV) no objective sensory loss on clinical examination; (V) positive anesthetic pudendal nerve block (20). Alternatively, a pudendal nerve block can be both diagnostic and therapeutic. A series of pudendal nerve blocks along with multidisciplinary treatments such as PFPT can significantly improve their symptoms. We have shown that pudendal neuromodulation may improve symptoms in patients with short-term response after pudendal nerve block (21,22).

### ***Bowel***

Because of their common embryologic organ, the hindgut, the bladder and bowel have closely related neural pathways and bowel disease can affect the bladder (23,24). Neural crosstalk may explain the interface of different chronic pelvic pain conditions including IC and irritable bowel syndrome (IBS). Neural pathways coordinating smooth and striated muscle activity of the pelvic organs may respond to ongoing, long-term stimulation by negatively impacting the non-irritated pelvic organs. This may lead to neurogenic inflammation and sensitization through the release of neurotrophic factors (25).

For example, in IBS, patients experience abdominal pain and changes in bowel movement frequency and consistency. This is commonly accompanied by lower urinary tract symptoms, such as frequency, urgency, and dysuria.

Inflammatory bowel disease, such as ulcerative colitis, is associated with later development of IC. Constipation and fecal incontinence are also strongly associated with overactive bladder symptoms. Many patients with IC/BPS have chronic constipation caused by their underlying PFD and the impact of medications such as opioids and antimuscarinics on bowel function. Thus, identifying and treating bowel dysfunction may improve bladder symptoms in patients with IC/BPS.

### ***Sexual dysfunction***

The spectrum of female sexual dysfunction is broad and includes sexual pain disorder, hypoactive desire, inadequate lubrication, and orgasmic difficulties. These issues occur more frequently in patients with IC/BPS, and they profoundly affect quality of life by affecting the woman's self-esteem and her interpersonal relationship with her partner. This can potentiate her pain and pelvic floor hypertonicity.

### ***Sexual pain disorder***

The pelvic floor is often a source of pain in IC/BPS. A comparison of 215 IC/BPS patients with 832 controls using the Female Sexual Distress Scale (FSDS) showed a significant increase in dyspareunia in women with IC/BPS versus controls (74.6% vs. 29.9%,  $P \leq 0.001$ ) (26). This pain can be so severe that it leads to abstinence; Gardella *et al.* reported that 23% of women with IC/BPS abstained from intercourse in the year prior to evaluation, mostly due to vaginal pain (27).

The most common form of superficial genital pain is provoked vestibulodynia or vulvar vestibulitis syndrome. Vulvodynia affects up to 48% of patients with IC (28) and is the fourth most common IC-associated syndrome. This causes characteristic pain with penetration localized to the opening of the vagina as well as tenderness to light touch on examination and erythema. Persistent afferent C-fiber activation from the bladder and vulva leads to gradual alteration of normal dorsal horn sensory processing; progressive upregulation leads to hyperalgesia, and a pain loop is created. Histologic exam reveals increased vestibular nerve fiber density as well as a large chronic inflammatory component with a predominance of lymphocytes and plasma cells (29).

Pelvic floor muscle dysfunction is an important cause of dyspareunia and often occurs in concert with vestibulodynia. Vaginismus can occur because of contracted pelvic floor

muscles. Even the anticipation of dyspareunia during intercourse can increase pelvic floor muscle tone, which worsens penetrative pain. This creates a pain cycle, which is difficult to break.

### **Hypoactive sexual desire disorder**

Desire is a complex construct, affected by many variables. Among women with IC/BPS, 64% reported an overall lack of sexual interest versus 31% in the general U.S. population (30). A delicate hormonal balance exists between estrogen, progesterone, and testosterone, and altering this homeostasis can change desire. Oophorectomy leading to surgical menopause is a strong risk factor for decreased sexual desire, increasing by 2 times the risk that a woman reports poor libido versus premenopausal or natural menopausal females ( $P=0.001$ ) (31). Hormone replacement therapy does replete the missing estrogens, but fails to increase testosterone. This imbalance may lead to decreased libido and therefore some surgical menopause patients with low desire are treated with testosterone.

Many women with IC/BPS require opioids for adequate pain management, which have a known inhibitory effect on sexual behavior. Opioids act centrally, inhibiting the hypothalamus, and can lead to hypogonadotropic hypogonadism. Of 32 women with intrathecal pumps for non-malignant pain, 68% reported decreased or no libido shortly after initiation of opioid therapy; the 18 postmenopausal women in that study experienced a statistically significant decrease in serum luteinizing hormone (LH) and follicle-stimulating hormone (FSH) ( $P<0.001$ ,  $P=0.012$ , respectively) (32). Another study comparing 24 women on chronic oral opioids for non-malignant pain to controls showed evidence of hypothalamic-pituitary axis inhibition with decreased levels of LH and FSH (33).

### **Arousal issues**

Women with arousal issues often present to our multidisciplinary clinic. In fact, 61% of women in the RAND Interstitial Cystitis Epidemiology (RICE) study, reported arousal difficulties (30). The opposite end of the spectrum is also seen in our clinic with increasing frequency, PGAD, and has been discussed previously. This debilitating condition is particularly isolating for the women who suffer from it.

### **Inadequate lubrication**

Poor lubrication can cause dyspareunia, and women with IC are at increased risk of atrophic vaginitis versus controls (27).

These women can benefit from locally applied estrogen in addition to use of a hypoallergenic lubrication.

### **Psychosocial**

Women with IC/BPS can become socially isolated by their symptoms. In one study 94% reported that travel was difficult or impossible and almost 70% stated they were having difficulties in their family relationships and responsibilities (34). Some chronic pain patients are socially isolated because of their maladaptive coping strategies, such as catastrophizing, which is characterized by rumination, feelings of helplessness, and worst-case scenario thinking. IC/BPS patients with increasing levels of catastrophizing were found to have worse social functioning ( $P<0.001$ ) and greater reports of pain ( $P<0.01$ ) (35). IC/BPS also affects a woman's ability to work full-time; when 2,767 working-age women (less than 65 years old) with IC/BPS were queried, 10% of the women who were not working stated their unemployment was due to their symptoms (36).

Many women with IC/BPS report a worsening of pain and urgency with increased stress (37). When patients with IC underwent a laboratory-controlled mental stress challenge with vital sign monitoring, their mean heart rates remained elevated significantly compared to controls ( $P=0.0001$ ) (37). The stress response appears to increase activation of the sympathetic nervous system and mast cell degranulation, which could lead to the increase in symptoms.

Compared to the general population, patients with IC/BPS have a much higher incidence of mental health diagnoses. Twenty-three percent of women with IC screened with a validated questionnaire for anxiety and depression, the Patient Health Questionnaire (PHQ)-9, were found to have a mental health disorder versus 3% of the control patients (OR, 8.2;  $P<0.0001$ ) (38). The more severe the IC/BPS symptoms, the more likely she is to have a mental health disorder (39).

Abuse history is also strongly correlated with IC/BPS. In a study of IC patients, 37.3% reported some type of abuse versus 23.7% of controls ( $P=0.01$ ); 31.6% reported emotional abuse, 17.7% sexual and 17.2% physical abuse ( $P<0.001$ ,  $P=0.001$ , and  $P=0.001$ , respectively) (40). Sexual abuse history can be used to phenotype a patient's symptomatology. Seth reported that 30 of 119 patients with newly-diagnosed IC/BPS had a positive sexual abuse history; and were more likely to have pain-predominant symptoms, such as suprapubic, vulvar, or rectal pain, rather

than urgency/frequency symptoms, and more likely to have impairment in sexual function (40,41).

### **The role of a multidisciplinary center**

Given the complexity of patients who suffer from IC/BPS it is impossible for a single clinician to effectively manage their symptoms. We have failed as a profession to effectively treat this complex patient population. It became clear to us at Beaumont Health that a better model of care was needed and we created a multidisciplinary Women's Urology Center. This is a free-standing center within the hospital that provides a warm and safe environment for patients to be evaluated and treated. All patients begin by completing a comprehensive health questionnaire that queries many components of their complaints including characterizing the pain, voiding dysfunction, sexual dysfunction and psychological profile. Within the center are urologists who are experts in evaluating pelvic pain, gynecologists who manage female sexual dysfunction and sexual pain, expert pelvic floor physical therapists who are trained in internal myofascial release, colorectal surgeons who evaluate and manage bowel dysfunction, integrative medicine who provide alternative therapies such as acupuncture, reiki therapy, guided imagery and medical massage, and pain psychologists who help patients cope with the impact of their pain and provide cognitive behavioral therapy and other management modalities. In addition, we work closely with our anesthesia pain colleagues to provide nerve blocks and naturopathic doctors who evaluate and treat patients using natural healing agents and treatments. At the center of all these specialists is a women's health nurse practitioner that provides the first intake history and physical and coordinates care amongst the various specialists.

### **The role of each specialist**

#### ***Women's Health Nurse Practitioner (WHNP)***

She is the most crucial component of the center and coordinates the care of the patient. Her priority is to coordinate communication between all the specialists in order to share information and tailor the patient's treatment. She is the point person for patient questions and is available to provide support throughout the treatment course. Prior to the first visit, she will review medical records and intake questionnaires in order to better tailor the patient's visit. The WHNP will perform the initial history and physical

exam, often a shared visit with an urologist who is an expert in pelvic pain. A typical first visit is at least 60 minutes. This in itself can be therapeutic for patients, because too often clinicians do not have the luxury of time to invest in the care of the complex pain patient. During this visit she explores their symptoms in detail and allows the patient to discuss her symptoms and the impact they have on her life. She will review her past medical and surgical history and medication history. She will characterize the pain and what makes it better and worse. This often provides clues as to the underlying cause. She will assess life-stressors, social support, history of abuse and impact on quality of life. She will discuss female sexual dysfunction, bowel function and review any history of depression or anxiety. She will review compliance with health screening for PAP smears, colonoscopy, endocrine disorders and cardiac risk factors.

The WHNP will provide self-help therapies and education about chronic pelvic pain and the associated symptoms. She will determine which current medical therapies are beneficial or not. We actively try to wean off medications that do not help, as many are centrally acting agents such as gabapentin, opioids, muscle relaxants and amitriptyline that lead to further depression and fatigue. If the patient is on opioids, we review the dose and if they are compliant. It is our belief that long-term narcotics are not beneficial in patients suffering from IC/BPS symptoms and the patient is made aware that the goal is to wean them once we have improved their symptoms. She will discuss and prioritize the patient goals and agree on realistic expectations.

She will perform a complete exam, including a pelvic exam that will assess for PFD, vulvodynia, lichen sclerosis or other vaginal abnormalities. She will rule out active vaginal infections, vaginal atrophy, urinary tract infections and urinary retention. She will perform procedures such as bladder instillations, tibial nerve stimulation and interstim programming as indicated and works closely with the entire team in the Women's Urology Center.

The WHNP spends a great deal of time providing education and support to the patient. Most importantly, every patient is told they will be better. We truly believe this, too often patients have been told that nothing can help them and they must learn to live with their pain. Investing this extra-time and showing we care is therapeutic.

#### ***Urology female pelvic medicine experts***

The Women's Urology Center has four fellowship-

trained urologists who are experts in pelvic pain and voiding dysfunction. The urologists are actively involved in research to better understand this patient population and to investigate novel therapies to control the symptoms of IC/BPS. The urologist will review the history with the WHNP and will perform a focused exam depending on the findings at the initial intake visit. The urologists assure appropriate work-up for hematuria or recurrent urinary tract infections. They rule out other conditions that can mimic the symptoms of IC/BPS such as urethral diverticulum (commonly missed), active stone disease, PFD or pudendal neuropathy. Depending on the findings they may perform cystoscopy or pelvic floor directed transvaginal trigger point injections using Kenalog and Ropivacaine, sacral or pudendal neuromodulation and other therapies as indicated.

### *Pelvic floor physical therapists*

The Women's Urology Center has full-time physical therapists that are experts in evaluating and treating PFD. They are experts in internal and external myofascial release, biofeedback and cupping techniques.

Our physical therapists perform a detailed evaluation of the patient's pelvic floor and pain complaints at the first visit. Patients complete validated questionnaires including the PFDI-20 and PFIQ. A typical treatment plan may consist of 1-hour sessions, once or twice a week, for 6 to 8 weeks. Patients are prescribed a home stretching exercise regimen and internal vaginal dilators to help stretch and relax the pelvic floor muscles. Our therapists may recommend transvaginal trigger point injections to provide pain relief that will allow more aggressive physical therapy. In our experience the combination of injection therapy with PFPT provides the best results. Our therapists also work globally with patients to employ stress management techniques and dietary modification. At the completion of therapy patients again complete the PFDI-20 and PFIQ to objectively assess improvement.

### *Gynecologist specializing in female sexual dysfunction*

A gynecologist trained in female sexual dysfunction is an important member of the team addressing issues including vulvodynia, vaginal dryness, lichen sclerosis, and hypoactive sexual desire. They evaluate hormonal imbalance, prescribe hormone replacement and ensure patients are adequately monitored while on these therapies. They help address psychosocial issues that may contribute to sexual

dysfunction and provide patients with resources and support groups to help them to overcome these factors.

### *Colorectal surgeon*

Our colorectal surgeon is an invaluable part of the team, as concomitant bowel related issues are often associated with IC/PBS symptoms. They evaluate defecatory dysfunction including constipation, fecal incontinence, IBS or rectal pain. Constipation may be treated with dietary and behavioral modification, colon transit evaluation, etc., whereas hemorrhoids, anal fissures or IBS may need anoscopy/sigmoidoscopy/colonoscopy. If patients are suffering from fecal incontinence our colorectal surgeon may recommend endoanal ultrasound or neuromodulation. Rectovaginal fistula, rectal prolapse or post prolapse surgical symptoms may require imaging including defecography or MRI. The colorectal surgeon allows our team to comprehensively address the patient's pelvic floor.

### *Integrative medicine*

Beaumont Health has an experienced Integrative Medicine department that offers several therapies for pain relief and stress management. Pelvic pain has a strong psychosocial component and evaluating the mind/body connection is an important process. Using techniques that help control emotions of anxiety, depression and stress can help patients to better cope with their disease. In a survey of 1,982 patients with IC, 84.2% reported trying a complimentary and alternative medicine therapy (42). We offer treatments such as reiki, medical massage, acupuncture, yoga therapy, and guided imagery.

Many patients may use various "natural" remedies on their own including a wide variety of supplements. In our Integrative Medicine Center our naturopathic physicians are experts in alternative therapies and naturopathic medicine. Motivated patients are referred for evaluation and counseled on the use of naturopathic therapies and caution them on side effects or interactions they may have with their other treatments. In addition they perform various nutritional assessments and help patients modify their diet and supplementation to address deficiencies and eliminate potential dietary triggers.

Alternative therapies have been studied with randomized controlled trials (RCTs) validating their effectiveness in the IC/PBS population. A total of 99 patients with chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS),

refractory to conventional medical therapy, were enrolled in a double-blind randomized trial with 44 patients receiving acupuncture and 44 receiving a sham treatment for a 10-week period. A total of 32/44 (73%) of acupuncture patients has at least a 6-point improvement in the NIH-CPSI total score (the criterion for clinical response) compared to only 21/45 (47%) of the sham group (43). We reported a RCT on guided imagery for IC/PBS in 50 women. The treatment arm listened to a 25-minute guided imagery CD specifically designed for women with pelvic pain twice daily for 8 weeks and the control arm rested for 25 minutes twice daily for 8 weeks. The women who used guided imagery had statistically significant improvements in the GRA ( $P=0.039$ ) and reductions in their IC-SIPI scores (problem index:  $P=0.006$ , symptom index:  $P=0.004$ ) compared to controls (44). These studies show that integrative medicine therapies can be effective adjunctive treatments.

### *Pelvic pain psychologist*

One of the most important members of our team is our psychologist specializing in pelvic pain. Patients that have significant social issues, history of abuse, or are interested in counseling services are referred to our psychologist. They undergo a comprehensive psychological evaluation on anxiety, depression, and catastrophizing. Depending on their needs a treatment plan is developed with weekly counseling sessions. Patients may be referred to our pelvic pain support group, which meets monthly and is run by our psychologist. Our psychologist works closely with the interdisciplinary team, participates in the development of their overall treatment plan and advises us regarding particular psychosocial issues that may be contributing to the patient's condition.

### *Anesthesia pain service*

We are fortunate to have an interventional radiologist (IR) who specializes in pain. They are able to provide specific nerve blocks to the pudendal nerve, hypogastric nerve, and other pelvic nerves under radiologic guidance. For patients whose pain symptoms follow a particular nerve distribution we will refer them to our IR specialist for a series of nerve blocks. In some patients these blocks can provide long-term relief and in others they may receive treatment in 1 to 3 months intervals. Pudendal nerve blocks specifically can be diagnostic in identifying pudendal neuropathy and in patients who show good response we may consider further

therapy with pudendal neuromodulation.

### *Pelvic pain mini-retreat*

The comprehensive multidisciplinary approach of our Women's Urology Center has attracted many patients who have long suffered a variety of chronic pelvic pain conditions. Women have traveled from more than 30 different states and four countries to attend an individualized "mini-retreat". We ask patients from out of town to spend a minimum of 1 week in Michigan to undergo intensive evaluation and treatment. Their medical records are reviewed and they are interviewed by phone by our nurse practitioner. Based on the findings in their medical history we arrange daily visits in the center with multiple specialists who work in concert to appropriately evaluate the patient and provide care. At the end of the retreat, a care-plan is created and we help find resources in their local region to continue this treatment plan. Patient satisfaction and long-term positive outcomes has been extremely high and many patients choose to return for further treatment. The demand for this service is robust because many patients continue to be treated with bladder directed therapies that do not address the complexities associated with chronic pelvic pain and voiding dysfunction.

### **Impact of a multidisciplinary center for the management of chronic pelvic pain**

The vast majority of patients with chronic pelvic pain do not have a bladder-centric condition that the name IC/PBS would imply. For decades, clinicians have done a poor job managing these patients with bladder directed therapies. It is clear that the bladder may be impacted by the more generalized neuromuscular upregulation of the pelvis and the pelvic organs. Looking outside the bladder and evaluating the entire patient is the first step in making a meaningful impact on their symptoms. For a multidisciplinary center to be effective, it must include clinicians willing to think outside the box, to communicate and work together to identify and address as many of the pain triggers and psychosocial issues impacting patients. The Women's Urology Center at Beaumont Health has a team of dedicated multidisciplinary clinicians who communicate about each patient, review the findings of each clinician and tailor therapy to that individual. We have found this model to be extremely successful in managing the symptoms of IC/BPS with very high patient satisfaction.

## The future

We must improve the education our current and future health care providers on the comprehensive evaluation and management of pelvic pain. This can be done through continuing medical education, peer-reviewed publications and expanded teaching curriculums in the medical field. Clinicians need to learn about PFD, vulvodynia, pudendal neuropathy and female sexual dysfunction and the relationship these may have with bladder symptoms. They must evaluate the entire patient, identify pain triggers and assess psychosocial factors. They need to engage their colleagues to create a multidisciplinary team to evaluate pelvic pain patients, know their limitations and refer patients when their standard therapies are not working. Women and men with IC/BPS symptoms have suffered for years because the medical field has failed them. It is time to look beyond the bladder.

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## Footnote

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