



# npcurrent

Canadian Journal for Nurse Practitioners

2019  
ISSUE 4

## **Light in a Window**

NPs utilizing bedside ultrasound

## **NPs in Outpatient Mental Health Care**

A case series

## **Vaccine Hesitancy**

A Canadian perspective



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## A Canadian Journal for Nurse Practitioners

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## Canada's Journal for Nurse Practitioners

This issue represents an important milestone for us on the NP Current journey; the publication of peer reviewed, original content from Canadian NPs. We are thrilled to have been able to publish 2 original submissions in this issue and a huge thank you to our authors!

Watch for news of more NP-led activities in our next issue when we will cover the upcoming NPAO conference in September. If you are attending the conference and would like to submit a summary of a talk you found useful or are presenting an abstract and would like to be published in the NP Current, our door is open!

We are grateful that so many of you have reached out to participate with the editorial process and to contribute feature ideas as well as original content. Our goal is to deliver content that supports the wide variety of NP roles across Canada. Have an idea for an article, or a suggestion to make NP Current better? Let us know!

Melissa Lamont  
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# Light in a window: nurse practitioners utilizing bedside ultrasound

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## Introduction & Background

Since the 1980s in Canada, the addition of the role of the Nurse Practitioner (NP) to the healthcare system has enhanced and improved the continuity of acute care and patient outcomes (Sangster-Gormley, Martin-Misener, Downe-Wamboldt, and Dicenso, 2011). NPs have helped reduce physician workloads and have assisted in the delivery of complex diagnostic, prescriptive, and procedural care. This trend has been evident at Calgary's South Health Campus (SHC), where I work as a critical care ICU Nurse Practitioner. The facility opened in 2013 and now has 2,400 full-time staff positions and 180 doctors and 25 NPs.

The Department of Critical Care Medicine (DCCM) at SHC supports the implementation of technology in the facility's clinical program, and it promotes the training of ICU NPs to utilize these tools and contribute to the health-care teams' services. For instance, over the past three decades with respect to the application of bedside ultrasonography (U/S), emergency department physicians have traditionally been the personnel designated as the sole implementers of the procedure (Palma, 2015). However, at SHC, as well as in other institutions, NPs have increasingly been delegated to receive specific training in bedside ultrasonography and its application, which has

resulted in: (a) expanding U/S's availability to assist the critical care team in treating patients requiring immediate interventions; (b) aiding in reducing misdiagnoses that had been shown to arise from inaccuracies in the conventional physical examination or from incomplete patient medical histories; and (c) decreasing procedural risks in administering prescribed ICU protocols.

In 2014, DCCM Calgary, provided funding for me to complete an ultrasound course offered by the Society of Critical Care Medicine (SCCM) in Chicago, where I learned theory and application of bedside ultrasound technology. The course provided attendees with interactive presentations, realistic practice at guided skill stations, personalized SCCM faculty mentorship, and hands-on sonogram experience with live models. Upon my return to SHC, I began applying these newly acquired skills, and was also aided by the echo cardiology technologists and Dr. Patrick Champagne from the Department of Cardiology, who provided me with further opportunities to implement my ultrasound knowledge.

## Highlights

Highlights of my application of bedside ultrasound in our ICU, and that of other NPs

Continued on page 5



A study was performed to assess the effects of BLEXTEN® and bilastine 40 mg on real time driving performance compared to placebo and hydroxyzine 50 mg. Bilastine did not affect driving performance differently than placebo following day one or after one week of treatment. However, patients should be informed that very rarely some people experience drowsiness, which may affect their ability to drive or use machines.<sup>1</sup> BLEXTEN® is only indicated for use at 20 mg once daily.<sup>1\*</sup> Note: Hydroxyzine is not indicated for the treatment of allergic rhinitis.

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\* Clinical significance has not been established.

#### **Reference:**

1. Blexten® Product Monograph. Aralez Pharmaceuticals Trading DAC. July 10, 2018.



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# Light in a window: nurse practitioners utilizing bedside ultrasound

Continued from page 3

who received this training, were that we have confidence of indirect visualization in placing central venous catheters in patients; to correctly establish difficult peripheral Intravenous access; to accurately identify important anatomical structures for safe chest tube insertions and pleurocentesis; and to have access to an important adjunctive assessment tool in the determination and differentiation of shock.

A key feature that our ICU team has noted is that the addition of this 2D ultrasound has improved overall patient safety. One sentinel example has been our common use of the internal jugular veins for central venous cannulation for central line placement, dialysis catheter, and plasmapheresis. Traditionally, when anatomical landmarks were used to guide practitioners in placement of lines, complications such as inadvertent puncture of the carotid artery and subsequent hematoma, thrombosis, embolism, pneumothorax, and/or nerve injury especially with repeated attempts to cannulate the vessel were more prevalent (O'Grady, Alexander, Burns, Dellinger, Garland, Heard, Lipsett, Masur, Mermel, Pearson, Raad, Randolph, Rupp, and Saint, 2011).

However, in contrast, with use of ultrasound guidance, we were able to confirm indirect 2D visualization of patient anatomy and were consequently able to reduce the emergence of complications largely because of increased initial success rates. We confirmed that using ultrasound to improve first attempt cannulation of large vessels benefitted both the patient and the ICU team in several ways: by promoting prompt treatment of shock with

rapid fluid/ blood product resuscitation, by providing vasopressor support, by monitoring central venous blood gas, and/or by increasing ease of drawing blood samples frequently needed in the critically ill.

We also observed that using ultrasound guidance reduced stress on ICU team members (RNs/ RTs) who were awaiting the completion of the procedure (cannulation of a central vein) to proceed with further stabilization or advanced resuscitative therapy, including massive transfusion, vasopressor/inotropic support with patients in shock, prompt initiation of dialysis, or plasmapheresis. All of these critical care therapies are based on having accurate central line access. We were gratified that these positive observations we have witnessed over the past years at SHC appear to confirm what previous research had reported regarding the efficacy of bedside ultrasound technology in improving NP clinical decision-making and successful patient care (Brass, Hellmich, Kolodziej, Schick, and Smith, 2015).

## Implementation and Results

### Case 1

I present three cases as examples of how my personal experience with bedside ultrasonography has aided our ICU team to provide clarity in administering appropriate patient care. The first case is illustrated by the accompanying graphic, which is a 2D ultrasound image on an obese patient. The

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# Light in a window: nurse practitioners utilizing bedside ultrasound

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photograph illustrates that if the practitioner were to insert the tube a few millimetres too far, he/she would likely cause an iatrogenic carotid arterial puncture as the needle passed through the jugular into the carotid artery. However, ultrasound technology diminishes the chance of such an error by indirect visualization of the tip of the needle tracking into the desired vessel.

Furthermore, at the time of this writing, the SHC ICU has not had a central line infection in NP-placed CVL lines in over the past year, a fact we attribute to the benefit of sterile procedure during line placement and reduction of multiple attempts at vessel cannulation (O Grady, et al., 2011).

## Case 2

A second example was an 80-year old female who was admitted post-operatively to our ICU for further critical observation, because she had a few critical moments while in the OR. The patient was otherwise well, and in the pre-operative interview she had denied any significant medical /known cardiac history and was not taking any medications. She presented to the Emergency Department with right lower quadrant pain, and the surgical team had proceeded with an incarcerated inguinal hernia repair. In the operating room, after receiving 20 mg of propofol, a sedative/ anesthetic induction agent, she suffered a brief but significant bradycardic and severe hypotensive episode. She received one cycle of CPR and intravenous epinephrine. She quickly rallied and the bowel resection was completed. Afterward, because of her seeming clinical

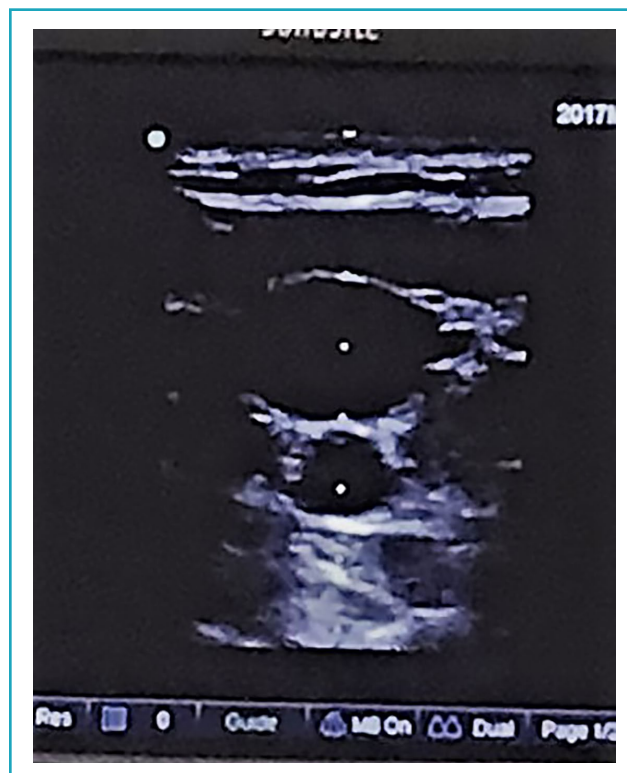


Figure 1. Right internal jugular mm superior to carotid artery

stability, she was extubated and removed from the ventilator, and brought to the ICU for post-operative monitoring.

Her post-op course required several IV crystalloid fluid boluses for decreased urine output and hypotension or “soft” blood pressure. However, after receiving the IV fluid boluses, she again became bradycardic and significantly hypotensive. Our NPs were immediately called to the bedside and detected a loud systolic murmur and obtained bedside ultrasound images to further guide and identify the cause of this shock. The parasternal long/short axis view (PLAX, PSAX) identified a completely stenotic mitral valve. A formal echo was then

ordered, and the echo cardiologist confirmed that the patient had a severe rheumatically diseased mitral valve with elevated left atrial and right heart pressures.

During this episode, a cardiac-specific functional inquiry occurred. The patient divulged that she had rheumatic fever at age 16 but said that she never considered it a medical issue for her, and she did not think it was necessary to disclose that detail in her pre-op surgical interview, because it had not been of any significance for her. Within minutes of this information, our team was able to implement bedside U/S and echo procedures, to form a treatment plan, to guide overall patient management, and to discuss treatment options with the patient and her family.

### Case 3

The third example I present occurred in May 2017, regarding a 64-year old female, who was admitted to the ICU post-operatively with a complex reconstruction of her right femur. Through her OR course, anesthesiologists utilized vasopressors to maintain an adequate blood pressure. The patient later arrested in ICU, and the on-coming ICU bedside MD ran a code blue. However, just prior to the arrest episode, a NP had successfully obtained bedside U/S images. The ultrasound revealed that the right ventricle was markedly dilated and was accompanied by a deviated and flattened intra-ventricular septum with an under-filled left ventricle. These images signaled the acute right ventricular strain and a pulmonary vascular obstruction—a pulmonary embolism, or a fat embolism leading the differential diagnosis. These findings were communicated to the attending intensivist on call with a degree of certainty concerning the etiology of the arrest. As a result, thrombolysis was promptly ordered and delivered, and the patient was resuscitated successfully and fortunately did not suffer post TPA hemorrhage post operation. Of note, a confirmation echo

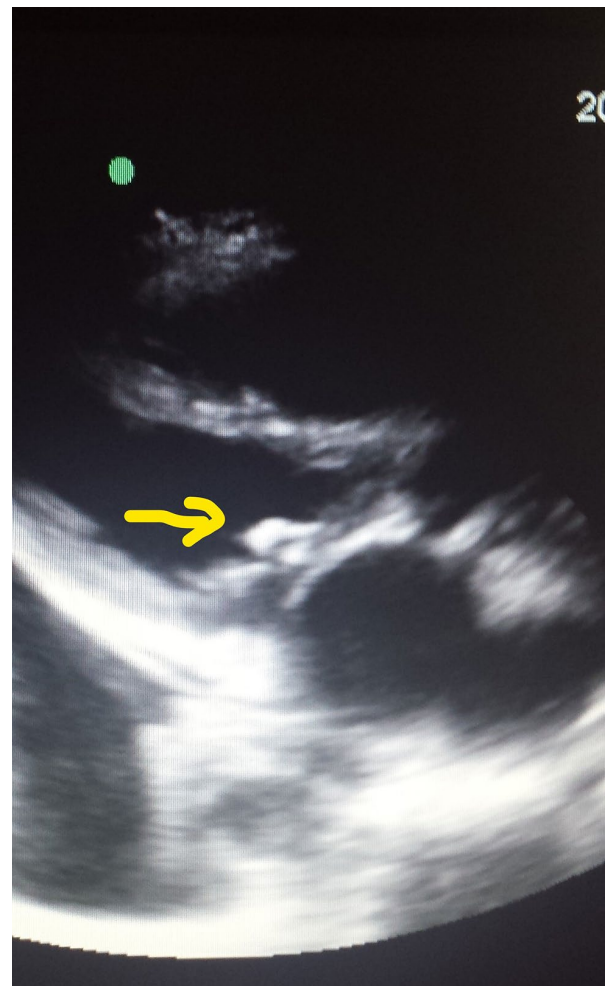


Figure 2. PLAX (Parasternal long axis) view of stenotic mitral valve; arrow indicates the stenotic lesion

was ordered, which subsequently confirmed our bedside U/S findings.

### Lessons Learned

As shown by these examples, the entire ICU team in our facility has benefitted in several pragmatic ways from having interested NPs receive training to apply U/S technology. These benefits are: broadening the accessibility of the U/S devices, strengthening the ease of use of the equipment, enhancing team-members' skill-based competence and confidence, building a spirit of team collaboration, and bolstering overall staff

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# Light in a window: nurse practitioners utilizing bedside ultrasound

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Figure 3. Robert Ralph, ICU NP

morale. These results have helped create what we called a “light in the window” in reference to the U/S anatomical picture window that is visualized by the operator.

## Next Steps

As with any technical skill, bedside U/S requires both practice by personnel and oversight by qualified mentors, as postulated by Benner (2001) in her novice-to-expert conceptual model of clinical development. This theoretical model has implications for training NPs to use bedside U/S in ICU. By providing such experiences as on-the-floor training under the guidance of experts and by offering supportive

professional courses, we believe that healthcare administrators and educators could enhance the building of professional skill, proficiency, and satisfaction among novice NPs. Such initiatives could help ensure that critical ill patients in Canada would have the safety net of the bedside ultrasound procedure during technical invasive treatment. We have learned in our unit that under critical life-threatening circumstances, NPs who have training in bedside U/S can provide critical information to bolster the traditional clinical exam by offering clear diagnostic cues in guiding treatment choices in real time. This indeed would brighten the light in the window.

Benner, P. (2001). *From novice to expert: Excellence and power in clinical nursing practice* (Commemorative ed.). Prentice Hall, Upper Saddle River, NJ.

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**References:** 1. TYLENOL® Prescribing Information. McNeil Consumer Healthcare. May 10, 2017. 2. Instar research, physician analgesic claims, 2015. 3. The Medical Post and Profession Santé 2018 Survey on OTC Counselling and Recommendations.

\* Please note that this content is not intended as professional medical or healthcare advice.

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# The role of nurse practitioners in outpatient mental health care: a case series

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## ABSTRACT

The Canadian mental healthcare system is fragmented, difficult to navigate, and does not fully address the mental, physical, and social needs of people with complex mental illness. Nurse practitioners (NP) have the competencies to address these needs such that their integration into mental healthcare could address service gaps and improve care delivery. This report describes the roles of NPs in three outpatient programs of a tertiary level mental healthcare facility. Despite the unique populations, all NPs provided services to address gaps in the healthcare system by conducting timely assessments, providing holistic care, facilitating transitions, and contributing meaningfully to client recovery. These cases demonstrate that NPs have essential roles within mental health care teams that aim to deliver high quality, accessible and cost-effective care. The advancement of a formal role for NPs in mental health could bridge service gaps and enable clients to receive more comprehensive care than possible in the current healthcare system.

## Introduction

Mental health is a vital component of health and well-being. One in five Canadians will develop a mental illness in their lifetime,<sup>1</sup> but two-thirds of these will not receive the required mental health services.<sup>2,3</sup> In addition to mental health services, people with mental illness often require increased physical health services due to common lifestyle factors and side effects of medications.<sup>4</sup> Those who receive services at psychiatric institutions report that their physical health issues are often not addressed;<sup>5</sup> hence, clients are left on their own to navigate the healthcare system to obtain services to meet their holistic needs. Nurse Practitioners (NPs) have the knowledge and skill to address both physical issues and complex mental illness. Based on the Canadian Nurse Practitioner Core Competency Framework<sup>6</sup> (Table 1), NPs can assess, diagnose, and provide therapeutic management for both mental and physical issues. Since their role includes health promotion, they have the skills to properly educate their clients to live according to a

healthy lifestyle to mitigate the physical side effects of mental illness. Finally, NPs collaborate, consult and refer, enabling them to connect with other health and social care practitioners when needed to ensure all client needs are addressed.

The percentage of NPs working in psychiatric mental health in 2010 was 1.4%,<sup>7</sup> which is inadequate for the number of Canadians requiring these services. Utilization of NPs to their full capacity in mental healthcare has the potential to improve access to more holistic services than currently offered. This case study describes the role of three NPs in three separate outpatient programs at a tertiary level mental healthcare facility in Ontario servicing a provincial catchment. Each NP selected a case to provide an example of their work, and program level demographics were analyzed for the three programs (Table 2, Figures 1&2). The purpose of the case description is to provide a more in depth understanding of the potential role for NPs to contribute to interdisciplinary mental healthcare teams so as to improve

**Table 1.** CNA Core Competency Framework<sup>6</sup>

NP Competency	Categories
Professional role, responsibility and accountability	<ul style="list-style-type: none"> <li>• Clinical practice</li> <li>• Collaboration, consultation and referral</li> <li>• Research</li> <li>• Leadership</li> </ul>
Health assessment and diagnosis	
Therapeutic management	
Health promotion and prevention of illness and injury	

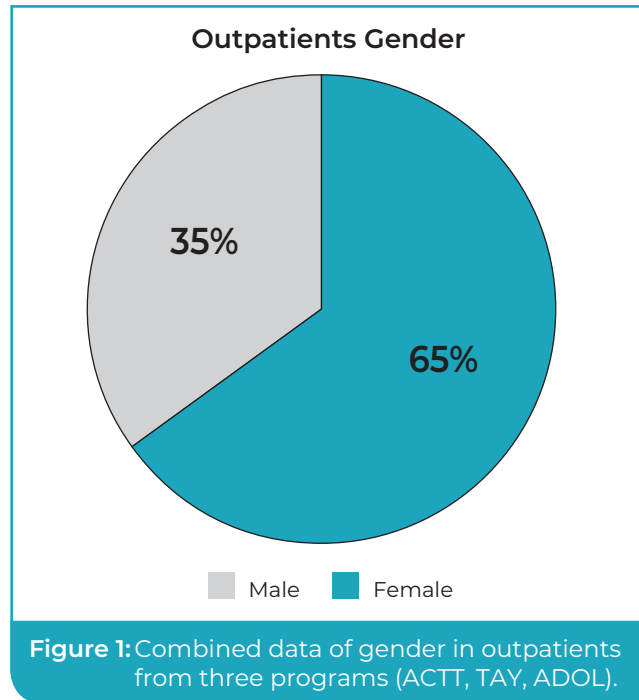
**Table 2.** Minimum, maximum and median age of outpatients from the three programs (ACTT, TAY, ADOL) at admission.

Program	Minimum Age	Maximum Age	Median Age	Total n
ACTT	19	66	42	100
ADOL	11	24	18	402
TAY	18	25	22	396

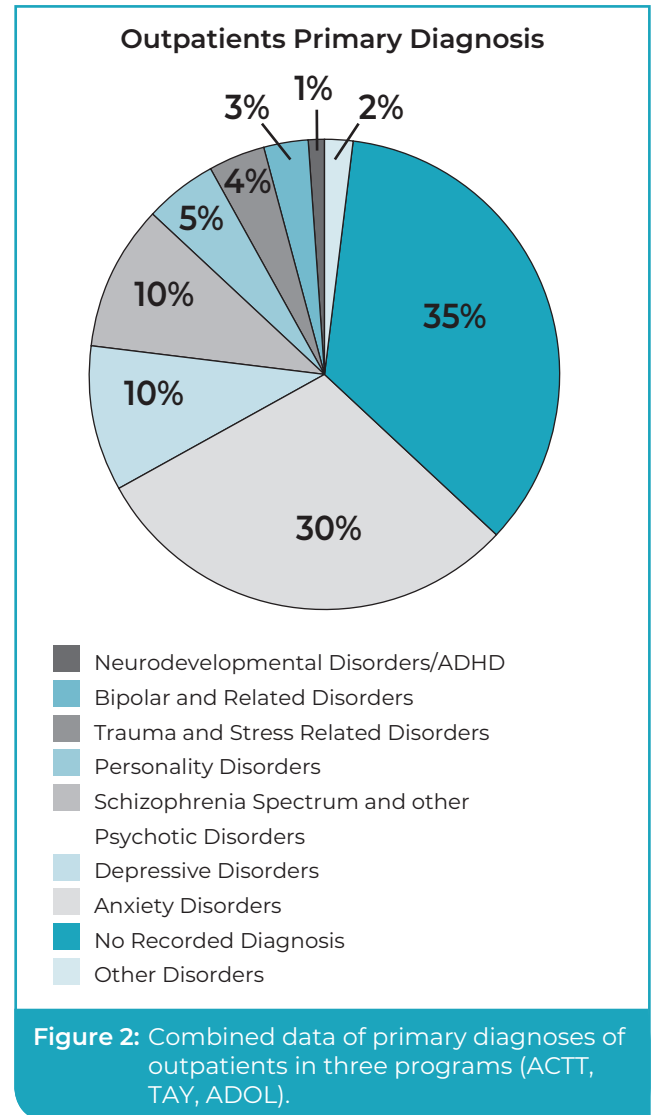


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delivery of services to people with complex and serious mental illness.<sup>†</sup> Ethical review was waived by the local research ethics board and all clients provided voluntary informed consent for publication of their cases. Client information was anonymized and confidentiality was maintained according to organizational policies and legal obligations.



<sup>†</sup> Serious and complex mental illnesses, including but not limited to major depression, bipolar disorder, schizophrenia, anxiety disorders, eating disorders, personality disorders and post-traumatic stress disorder (PTSD), require specialty treatment that cannot be managed in primary care alone.

## CASES

### Case 1: NP working in the community-based Assertive Community Treatment Team (ACTT).

The ACTT program was implemented as an evidence-based practice to manage complex clients in the community and decrease emergency room visits and readmissions to hospital by reducing symptoms, increasing social functioning and promoting improved quality of life.<sup>8</sup> The ACT team serves clients aged 18-65y (average age 41y, 60% male), the majority of whom are diagnosed with schizophrenia or other psychotic disorders (90%), with complexity at a LOCUS (Table 3) level 4 (54%), which indicates medical monitoring in non-residential settings.

**Table 3.** LOCUS/CALOCUS level definitions

Locus Level	Recommended Care
Level 1	Recovery, maintenance, and health management
Level 2	Low-intensity community-based services
Level 3	High-intensity community-based services
Level 4	Medically monitored non-residential services
Level 5	Medically monitored residential services
Level 6	Medically managed residential services

In December 2016, a NP role was introduced as a full time, onsite most responsible provider (MRP). This is a relatively novel role for NPs in mental health care such that research regarding their impact is lacking. Previous to this, a psychiatrist was MRP and available part time via telemedicine to meet with clients and manage their medication regimens. As MRP,

the NP became responsible for completing comprehensive, evidence based psychiatric assessments, follow-up visits, medication prescribing and treatment management, that was holistic, individual and family-centered specific to client's recovery goals. A psychiatrist continued to be available one day per week for consultation on cases outside the NP scope of practice or for physician specific tasks in accordance with the Mental Health Act (e.g. Community Treatment Orders, Consent and Capacity Board Hearings). The NP was able to meet with the clients as frequently as their condition warranted and would assess clients in their homes, shelters or at the ACT office enabling timely access to assessments for clients at risk.

An example case is that of a 64 year-old male with a diagnosis of schizoaffective disorder, bipolar type, from the age of 28yr, and with mild impairment in memory and processing speed. He currently resides in the community with his female partner and is supported financially through long-term income protection from his former employment. From 2010-2016 he had multiple involuntary hospitalizations for manic and psychotic episodes. He has a past history of medication non-adherence as well as limited insight into his psychiatric conditions. In February, 2015, he was accepted to the ACT team and the NP became his MRP in 2016 when she was added to the team. She provided regular follow-up visits 1-2 times/month as well as reassessment as needed during times of decompensation.

The client developed chronic Parkinsonism as a side effect of pharmacological management of his psychiatric disorder, and also suffered from chronic gastroesophageal reflux disease, hyperlipidemia, chronic obstructive pulmonary disease (COPD), and Cluster B personality disorder. The NP expedited a referral for neurology consult for diagnostic clarification and medication management regarding the Parkinsonism, reducing the

# The role of nurse practitioners in outpatient mental health care: a case series

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18-24 month wait time through his general practitioner to 3 months, during which time psychiatric medications were adjusted by the NP to manage symptoms. Additionally, the NP provided health teaching regarding nutrition, physical activity, sleep hygiene, and smoking cessation to help manage his hyperlipidemia and COPD, and to reduce the risk of cardio-metabolic diseases. Since the client has a psychiatric history of lack of insight and medication non-adherence, the NP arranged to have medications blister packed by pharmacy and ordered ACT staff to increase their adherence monitoring and face to face support provided to the client.

To further support the client, the NP facilitated referrals and collaborations with a number of community partners to ensure efficient care and adequate support. For example, the client was provided with an internal referral to psychology in December, 2017 for a cognitive assessment that assisted the client in getting his driver's license reinstated. The NP also collaborated with a community pharmacist on smoking cessation and with the client's primary care provider to ensure co-ordination and continuity of care. The client's psychiatric status remained stable; however he continued to require intensive supports through the ACT team and was not discharged from services by the end of the study period. The NP remains his MRP and continues to provide holistic healthcare to support his complex needs while enabling him to remain in the community and work toward his recovery goals.

## Case 2:

### NP working in the Transitional Aged Youth (TAY) Outpatient Program.

The TAY program bridges the gap between paediatric and adult psychiatric services and attends specifically to the complex needs of emerging adults. The program serves people aged 18-24y (average age 20y, 30% male, 70% female), the majority of whom have a diagnosis of anxiety (39%) or depressive disorders (23%), and complexity at a LOCUS level 2 (54%), which indicates low intensity community-based services. A NP was introduced to the TAY team as MRP in 2015 to work within an inter-professional team that provides psychotherapy and transition support. Importantly, the NP provides initial psychiatric assessments, diagnosis and treatment of mental health and addiction disorders, which often enables earlier access to services.

An example is the case of a 23 year-old male whose current diagnoses are bipolar II disorder and generalized anxiety disorder. He resides with his parents and two siblings. He completed a Bachelor of Arts, and is employed full-time in a job related to his course of study. The client sustained a concussion while playing hockey in early adolescence, began experiencing symptoms of anxiety and depression in grade 10 and attempted suicide in grade 11. Although mood symptoms improved through high school, once in university, symptoms were exacerbated which significantly impacted his academic, interpersonal and occupational



“

The NP decreased wait time for psychiatric assessment, facilitated treatment, and ensured that the patient had a practitioner for long-term community follow-up.

”

functioning. At age 19y, he started to experience episodes of hypomania followed by depressive episodes. He was assessed by a psychiatrist at age 21y and was diagnosed with bipolar II disorder and generalized anxiety disorder. He was subsequently referred to the TAY outpatient program for psychotherapy and psychiatric management by the NP. He waited approximately 6 months for service.

Upon acceptance into the TAY outpatient program, he was assessed by the NP for an initial psychiatric consult. The NP recommended pharmacological treatment and participation in a 16-week course of individual cognitive behavioural therapy (CBT) which is a form of psychotherapy that focuses on changing negative cognitive distortions through examination of their influence on feelings and behaviours. CBT is an evidence based psycho-social intervention for depression and anxiety disorders.<sup>9</sup> Upon review of his medications, since past trials with escitalopram and lurasidone were unsuccessful, the NP prescribed lithium, titrated the medication to therapeutic dose range and completed monitoring bloodwork, including lithium level, at baseline and regular intervals.

Follow-up was weekly with a clinician for group therapy, every two weeks with the NP until medication stabilized, and every four weeks

with the NP thereafter. The NP completed health teaching regarding risk of lithium toxicity, nutrition, physical activity and sleep hygiene. Metabolic monitoring was completed every four weeks. Psychiatric symptoms were monitored with outcome specific scales.

The client was discharged in June 2017 at the age of 23yr after successfully completing and responding to therapy. Since the client's family physician retired, the NP referred the client to a local community health centre for ongoing follow up and pharmacological treatment and his care was transferred to a primary care physician at the centre. The NP decreased wait time for psychiatric assessment, facilitated treatment, and ensured that the patient had a practitioner for long-term community follow-up.

### Case 3:

#### NP working in the Adolescent Outpatient Program (ADOL).

The ADOL program provides mental health assessment and treatment for young people aged 12-17y (average age, 15y, 35% Male, 65% Female). The majority of clients have a diagnosis of anxiety (74%), and complexity at a CALOCUS (LOCUS modified for children and adolescents) level 2 (59%), which indicates low intensity community-based services. Since 2013, the NP's role as MRP is to provide psychiatric assessments, diagnosis and treatment of mental illness while working with an inter-professional team for individual and group psychotherapy.

An example client is a 13 year-old male with an unremarkable childhood who began to experience symptoms of anxiety and depression in grade 7, which emerged in the context of his best friend moving away and extensive online and in-person bullying by his peers. By the middle of grade 7, the client

# The role of nurse practitioners in outpatient mental health care: a case series

Continued from page 15

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With support of the NP working collaboratively with other ADOL team members the client was able to show significant clinical improvement and was discharged from the ADOL program.

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was refusing to go to school and received an incomplete for grade 7. He began self-harming and developed suicidal ideation. At the end of grade 7, he attempted suicide after an argument with his mother. His mother took him to the local Emergency Room where he was assessed and released. He was referred to a community-based youth service for individual counseling, which was unsuccessful and residential services were recommended; however, his mother refused, so a referral was made to this Adolescent Outpatient program. At the time of referral, the client was experiencing anxiety resulting in difficulties making decisions, poor energy, insomnia, restlessness and irritability occurring daily prior to school. He avoided participating in extracurricular activities for fear of bullying and

judgement by his peers. He reported using marijuana recreationally. He experienced panic attacks at the thought of going to school.

The client met with the NP for psychiatric assessment at the age of 13y. The NP referred the client to a School Day Program that combined mental health and academic programming as well as individual therapy (CBT) with a social worker. While on the wait list for both the School Day Program and CBT, he saw the NP, at first weekly and then monthly, for supportive therapy. The NP encouraged behavioral activation, exposure-based therapy and provided health teaching regarding sleep hygiene, nutrition and physical activity.

The client's family doctor had initiated sertraline; however, the dose had not been titrated to therapeutic levels. The NP increased the dose to therapeutic levels of 125mg QPM, which improved symptoms as measured by the Generalized Anxiety Disorder 7-item scale. Upon completion of individual therapy with a social worker and the School Day Program, the NP, client, and his mother collaboratively developed a discharge plan that included tapering off sertraline. With support of the NP (i.e. ongoing monitoring of psychotropic medications, risk assessments, mood and function) working collaboratively with other ADOL team members (i.e. psychiatrist, social worker and psychologist), the client was able to show significant clinical improvement and was discharged from the ADOL program.

**Table 4.** Summary of NP cases in each of the three outpatient clinics (ACTT, TAY and ADOL).

Cases	ACTT	TAY	ADOL
Demographics	64 yr Male	23 yr Male	13 yr Male
Psychiatric Diagnoses	Schizoaffective disorder, bipolar type and personality disorders (borderline & antisocial). Onset at age 28 yr.	Bipolar II disorder and generalized anxiety disorder.	Generalized anxiety disorder and social anxiety disorder.
Co-morbid Diagnoses	GERD, hyperlipidemia & COPD	None	None
Relevant History	Past psychiatric history of med non-adherence, limited insight and past hospitalizations for manic & psychotic episodes.	Past psychiatric history of anxiety and depression in adolescence (following a concussion) and one suicide attempt; at age 19 years old, experienced first hypomanic episode.	Past psychiatric history of depression and anxiety and one suicide attempt; at age 13 years old. History of bullying in grade 7 and school avoidance.
Assessment and Treatment	Accepted onto ACTT and seen by staff twice weekly plus phone prompt. Regular follow-up with NP biweekly or as needed in office or client's home/community.  NP provided ongoing psychiatric assessment, clinical risk appraisal, managed pharmacological treatment, metabolic monitoring and psychoeducation (e.g. nutrition, physical activity, sleep hygiene and smoking cessation). Also facilitated timely referrals, blister packed medications to promote adherence and collaborated with community partners.	Referred to TAY program at 22 years old and assessed by NP for initial psychiatric consult, who recommended pharmacological treatment and therapy.  Treatment included weekly individual CBT and TAY clinician and biweekly follow ups with NP for ongoing psychiatric assessment, medication stabilization and psychoeducation (e.g. nutrition, exercise, sleep hygiene and metabolic monitoring).	Referred to adolescent outpatient program at 13 years old and assessed by a child psychiatrist, who recommended pharmacological treatment and therapy.  Client was on a wait list for eight months for a school day treatment program and individual cognitive behavioural therapy (CBT). During this time he saw the NP bi-weekly for supportive therapy and psychiatric care.  Treatment included our school day treatment program (daily for two semesters) and weekly individual CBT with social worker and biweekly follow ups with NP for ongoing psychiatric assessment, medication stabilization and psychoeducation (e.g. nutrition, exercise, and sleep hygiene).
Outcomes	Psychiatric status remained stable, however he continued to require intensive supports through the ACT team.	Successfully completed and responded to treatment, with significant improvement in social, academic and occupational areas of functioning (outcomes monitored using specific scales).	Successfully completed and responded to treatment with significant improvement in social and academic areas of functioning (outcomes monitored using specific scales).

# The role of nurse practitioners in outpatient mental health care: a case series

Continued from page 17

## DISCUSSION

This report described the roles of NPs in three different outpatient programs of a tertiary level mental healthcare facility. These three cases demonstrate the value of including NPs in outpatient mental health teams, which is significant as the mental healthcare system has been identified as fragmented and in need of restructuring to provide more comprehensive care.<sup>3,10-12</sup> Although the clients presented above had different diagnoses and needs, the NP for each was able to provide holistic treatment, medication management and referral to other services as needed in accordance with their Core Competency Framework.<sup>6</sup> All NPs were able to address service gaps by expediting referral to other practitioners, or by providing continuous service and management during the wait period.<sup>11</sup> They were able to address mental, physical, and social health issues directly and provide education in an effort to prevent future declines or concurrent illnesses and to empower clients to be in control of their own health and wellness.

This paper is limited in that it used a case study design to qualitatively describe the roles of three NPs; however, the purpose of these cases is to demonstrate how NPs may contribute to the provision of more comprehensive care in the mental health care system. Once roles become more formalized, fulsome evaluation of their roles is needed to determine the effects on client outcomes. Studies examining long-term system-level metrics, such as wait times, cost-effectiveness, and satisfaction scores for clients, families, and team members are

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NPs working in specialty mental health outpatient programs must maintain their knowledge and skill for primary care, while also independently seeking opportunities to advance their expertise in mental health.

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also warranted to quantify the value of NPs in outpatient mental health programs.

Despite the potential value of NPs in mental health programs, there are a number of barriers to introducing a formal role to adequately address clients' needs. A major barrier is the lack of advanced mental health nursing education available in Canada<sup>13</sup> and lack of recognition of NP mental health specialization. As such, NPs working in specialty mental health outpatient programs must maintain their knowledge and skill for primary care, while also independently seeking opportunities to advance their expertise in mental health. The NPs described in the cases above obtained their knowledge through previous work experience in primary care, consultation with their psychiatrist partners, and continuing education offered by pharmacists and the



medical profession. Another barrier is the lack of funding for the position. NPs cannot directly bill the Ontario Health Insurance Plan (OHIP) for services, so they must have a third-party funding agent, such as a hospital.<sup>14</sup> This limits the ability of NPs to work in private practice or small organizations, where their services may be of particular value. The NP role is cost-effective in primary care,<sup>15</sup> and completion of similar analyses for NPs in mental health could provide evidence to facilitate removal of this barrier. Lack of awareness of the NP scope of practice by medical colleagues and the general public has likely hindered the acceptance of NPs in many mental health settings, though their competencies could potentially add value. More research is needed to provide an evidence-base for best practices in including NPs in interprofessional teams.

In conclusion, the cases above demonstrate the potential for NPs to add value to mental health programs. Future work to redefine the NP role to emphasize advocacy, holistic healthcare, and connection, while increasing access to psychiatric specific advanced nursing education, could expedite the advancement of a formal role for NPs in mental health. This has implications for improvements in the Canadian mental health care system.

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# Vaccine hesitancy in Canada

## Vaccination hesitancy

Vaccine hesitancy (VH) is defined by the WHO SAGE Working Group on VH as a lower than expected vaccine acceptance, given the information provided and services available.<sup>1</sup> Parents and caregivers with VH have varying degrees of concern about vaccines. The term VH generally refers to individuals who may:

- refuse some vaccines but agree to others,
- delay vaccinating their child, or
- accept vaccination with reservations.

Earlier this year, the results of a Quebec-based cross-sectional study were published, which evaluated vaccination knowledge, attitudes, and beliefs among mothers of newborns. The results provide insight into reasons behind vaccine hesitancy in a Canadian population.<sup>2</sup>

## Study demographics

2645 mothers completed the questionnaire in maternity wards in Quebec. Mothers were:

- aged 20-39 years (95%),
- having their first (47%) or second (36%) child,
- living with a partner (54%),
- born in Canada (74%).<sup>2</sup>

## Mothers' intent to vaccinate

Seventy-eight percent of mothers strongly intended to vaccinate their infant at 2 months of age and 84% knew where to access vaccines.<sup>2</sup>

However, this is significantly lower than the WHO's objectives of 95%.

In answer to the question *"To what extent would you say that you specifically know the 8 vaccine-preventable childhood diseases?"*, 70% of mothers described themselves as having a low level of knowledge.<sup>2</sup> Only 4 in 10 mothers reported being sufficiently informed about their child's vaccinations.<sup>2</sup>

Over half of the survey respondents (55%) intended to perform detailed research before deciding whether or not to vaccinate their infant.<sup>2</sup>

Mothers who believed their child to be at high risk for any of the 8 major vaccine-preventable diseases (71%) were more likely to intend on vaccinating their child compared to other subjects (91% vs. 9%).<sup>2</sup> Also, significantly more of those who intended to vaccinate their child considered the risk of vaccination to be low or absent versus mothers who were not intending to vaccinate (90% vs. 75%).<sup>2</sup> Similarly, more mothers intending to vaccinate indicated that they would feel strong remorse if their child fell ill from a vaccine-preventable disease than mothers with a low or no intention to vaccinate (93% vs. 69%).<sup>2</sup>

## Knowledge and attitudes towards vaccination

Study participants received information about vaccination from a wide variety of sources. (Table 1)

Continued on page 22



# Vaccine hesitancy in Canada

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**Table 1.** Information sources reported by mothers on vaccination<sup>7</sup>

- |  |
|--|
| • healthcare professionals (62%)       |
| • official sources (62%)               |
| • family and friends                   |
| • unofficial websites                  |
| • social media                         |
| • alternative healthcare practitioners |

The vast majority of mothers recognized the efficacy of vaccines (96%).<sup>2</sup> Almost every subject with a strong intention to vaccinate their child understood the importance of doing so at 2 months of age.<sup>2</sup>

To assess VH, a series of 13 questions were presented to participating mothers in order to gauge their overall positioning on vaccination. Although generally in favour of vaccines, there were two major concerns expressed by the mothers in the study:<sup>2</sup>

1. immunization may result in a serious adverse effect (61%)
2. childhood vaccines might be unsafe (53%)

High, moderate, and low VH was seen in 15%, 29%, and 56% of subjects, respectively. The more VH seen in mothers, the less likely they were to intend on vaccinating their child.<sup>2</sup>

Upon analysis of the study data using a multivariable logistic regression model, researchers were able to pinpoint exactly which factors contributed the most towards VH in new mothers. The three major determinants of vaccination intention, aside from a low VH score, were whether the mother:

- a) perceived vaccination to be important at 2 months of age,
- b) thought she would feel guilty if her child contracted a vaccine-preventable disease, and
- c) believed she was knowledgeable about vaccines.<sup>2</sup>

## Major takeaways

Generally, mothers in Quebec hold positive attitudes towards vaccination with 90% considering vaccines to be effective and vaccine-preventable diseases to be severe.<sup>2</sup> However, almost half of all mothers (44%) have moderate or high VH, highlighting the importance of this issue in Canada.<sup>2</sup>

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# In the News

## Current healthcare research

### Lower risk of gestational diabetes mellitus associated with pre-pregnancy folate supplementation

Health Canada prenatal nutrition guidelines recommend a daily folic acid supplement of 400 mcg to reduce the risk of a neural tube defect.<sup>1</sup> A recently published report suggests a benefit for the pregnant woman as well, with pre-pregnancy folate supplementation associated with a reduced risk of gestational diabetes mellitus (GDM).<sup>2</sup>

The Nurses' Health Study II (NHSII) followed 14,533 women who reported at least one pregnancy between 1991 and 2001, with questionnaires that assessed, among other things, pre-pregnancy intakes of total folate, supplemental folate, and food folate. The incidence of GDM was determined from self-reported physician diagnosis. 824 diagnoses of GDM were reported over the study period. The relative risk of GDM was 0.83 (95% CI 0.72,0.95,  $P=0.007$ ) in women with adequate folate intake compared to those with an inadequate intake. The risk reduction was driven by supplemental folate, and not the less-available folate in foods. Women taking >600 mcg of supplemental folate per day had a 30% lower GDM risk than women not taking supplemental folate. The minimum recommended folate supplementation is 400 mcg per day, and the maximum is 1000 mcg per day.

Further research can identify the optimal folate supplement dose, but the key takeaway is a routine pre-pregnancy folate supplement at the current recommended dose has benefits



for the pregnant woman in terms of GDM risk and decreased risk of neural tube defects in the developing fetus.

### Is chlorhexidine decolonization and nasal mupirocin more effective than regular bathing to prevent hospital-acquired infections?

A large, randomized controlled trial of bathing with regular soap and water versus chlorhexidine (CHG), and added nasal mupirocin in MRSA-affected patients, showed no difference in infection rates between the two groups – except for a subgroup of patients with medical devices such as central venous catheters or lumbar drains.<sup>3</sup> In these patients, a 32% reduction in bloodstream infections was seen compared to the regular bathing arm. A 37% decrease was also seen this group in antibiotic-resistant bacteria, including MRSA and vancomycin-resistant enterococcus.

The ABATE Infection trial looked at patients in the non-ICU setting. The investigators established a baseline infection level with

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# In the News

## Current healthcare research

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almost 190,000 patients in a baseline period and nearly 340,000 patients in the intervention period (157,000 with routine bathing and 183,000 with CHG and mupirocin). The hazard ratio with regular soap and water bathing was 0.87 versus 0.79 in the CHG and mupirocin group, with no difference seen between the groups ( $p=0.17$ ).

A post-hoc analysis of the subgroup of patients with devices including central lines and lumbar drains showed them to benefit from the CHG and mupirocin intervention versus regular bathing. The trial was not originally powered to examine this subgroup, but the outcome aligns with recommendations in place for patients with medical devices in the ICU setting.

### Stepping on the scale every day may control holiday weight gain

Holiday weight gain can be a contributing factor for the one in four Canadians who are obese.<sup>4</sup> A new study in the journal *Obesity* showed that daily self-weighing and graphical feedback may help to prevent holiday weight gain.<sup>5</sup>

Researchers randomized 111 adults into a control group or one that undertook daily weight checks with a graphical display of weight change versus a four-day baseline. Weight was evaluated before US Thanksgiving in November, after the New Year, and again 14 weeks later. 104 participants completed all three visits. The control group gained weight over the holiday period and lost weight in the 14 weeks afterwards, but still showed a statistically significant weight gain over the entire study period. The treatment group did not see a weight gain over the study period.

Holiday weight gain can be a significant factor in overall annual weight gain. This study shows that using daily self-weighing and graphical feedback may be a useful approach to control holiday weight gain. Further investigations will help to determine the potential for this approach in public health recommendations.

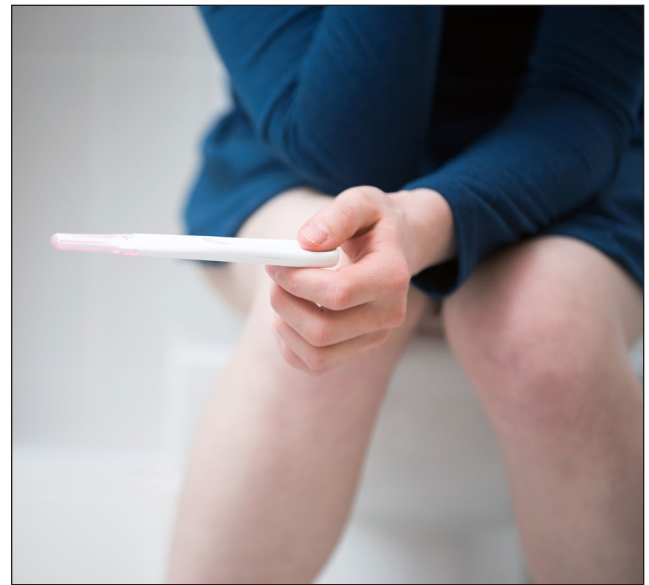
### Canadian Pediatric Society advocates for universal access to no-cost contraception for Canadian youth

Since cost is a significant barrier to contraception access, on May 9<sup>th</sup> the Canadian Pediatric Society took the position that there should be free universal access to contraception until the age of 25.<sup>6</sup> Personal and societal costs of unintended pregnancies are high. Direct medical costs associated with an unintended pregnancy are estimated to be \$2,129, with the direct costs of unintended pregnancies in Canadian youth exceeding \$125 million per year.<sup>6</sup> The CPS takes the position that the direct and indirect costs of



unintended pregnancies far outweighs the costs of providing no-cost contraception. To achieve this goal, the CPS proposes:

1. All contraceptives (including condoms) should be covered under provincial/territorial or federal health plans at no cost, until age 25.
2. Health ministries should also provide contraceptives at no cost to community-based health care services for youth, to support point-of-care dispensing and simplify access.
3. Health ministries that adopt public-private models to cover contraceptives must ensure that privately insured youth have equal access to no-cost, confidential contraception.



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## Call for Contributions

At NP Current we want to reflect the needs and interests of nurse practitioners across Canada. We are seeking your ideas and contributions on any topics that would be of interest to the NP community. In each issue we will strive for a mix of content that addresses diagnosis, treatment, prevention and management of patients from the NP perspective.

We invite you to submit your ideas for new articles such as case studies, research, reports or newsworthy information from your practice or area of expertise or interest. Contact NP Current at [info@npcurrent.ca](mailto:info@npcurrent.ca) and your contributions can help to inform and educate your peers.



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We welcome all contributions that are of potential interest to nurse practitioners, including but not limited to the following categories:

**Original Research** – Please follow the standard format of scientific manuscripts with the inclusion of an abstract, introduction, methods, results, discussion and conclusion. Tables and figures must be submitted in an editable word file.

**Key Concepts** – Brief contributions on topics of interest to nurse practitioners, such as new therapeutic approaches or frequently encountered clinical conditions.

**Practice Perspectives** – An article that illustrates diagnosis, treatment or management concepts, including innovative NP-led initiatives.

### Peer Review

Submissions are subject to a blind peer review. After initial review by the editor, submitted articles will generally be sent to two reviewers who will provide comments on the scientific rigor of the content and its suitability for our audience. The final decision on the acceptance of the submission rests with the editor of NP Current.

### Submission Length

All articles should be a maximum of 3000 words unless there is a prior discussion with the editor.

### Funding and Conflict of Interest Reporting

All authors must complete a funding disclosure and conflict of interest form.

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Any studies involving human or animal subjects must have obtained appropriate approvals and consent.

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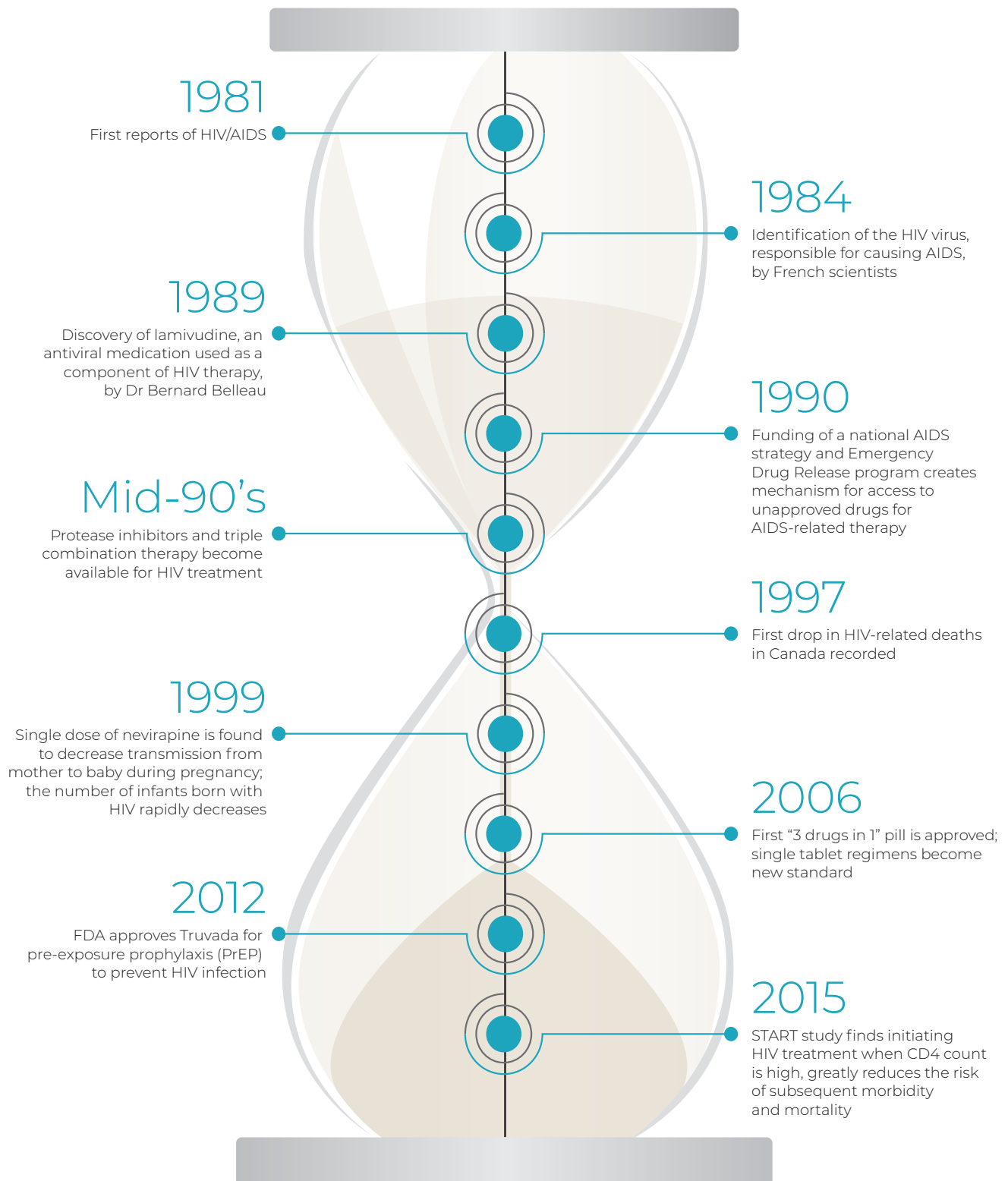
Submitted articles must not have been previously published (abstracts and theses excluded) or under consideration for publication in the same format elsewhere.

### Authorship

All authors must have made substantial contributions to the development of the article.



## Milestones in HIV



Sources: CATIE, Canada's source for HIV and hepatitis C information, [www.catie.ca](http://www.catie.ca)  
Canadian Health Research Institutes, Medical milestones available at <http://www.cihr-irsc.gc.ca/e/35216.html>

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