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Our Practice

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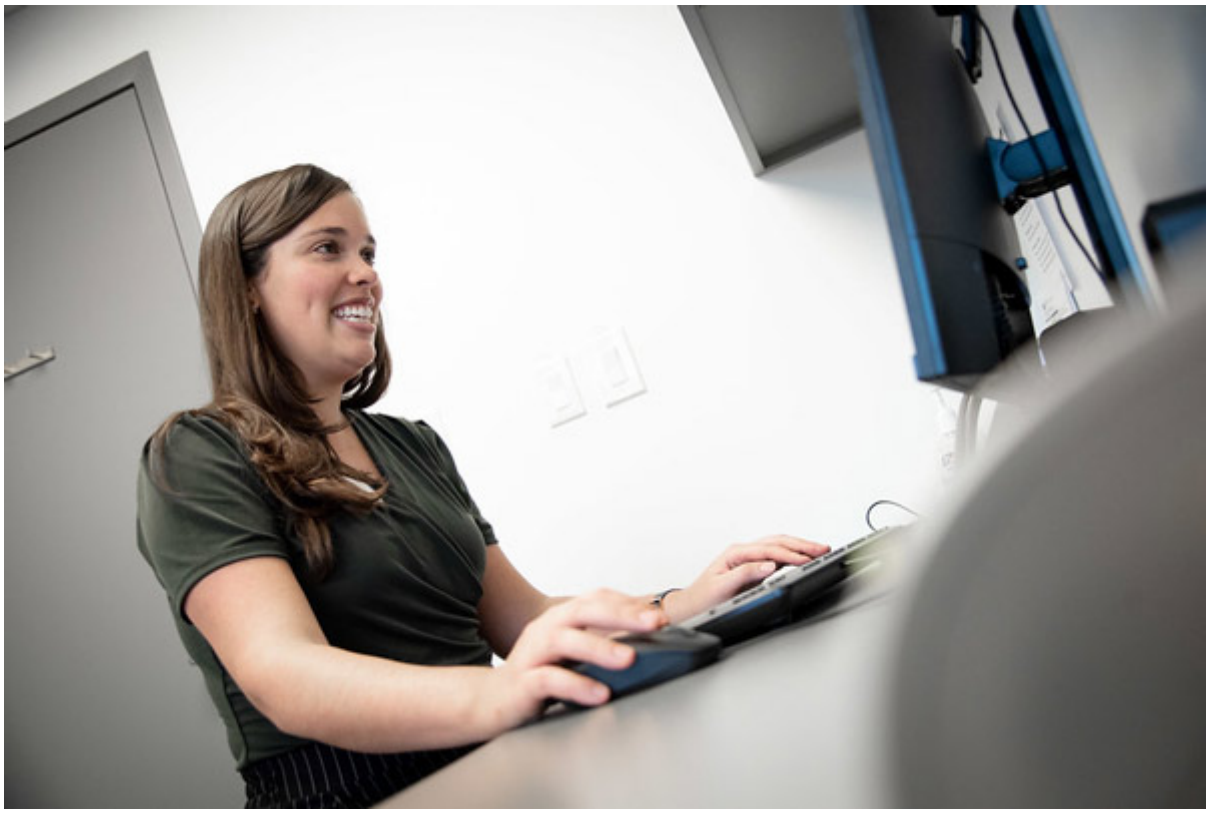
FEATURE ARTICLE

Information is key – utilizing health information systems for better patient care

BY: ADRIAN ZIEMCZONEK, BSC(PHARM), RPH



Gathering relevant patient history is a critical step in providing comprehensive medication management. However, lack of digital integration and access to patient medical records can be a major barrier to providing optimal patient care. Research indicates that pharmacists are committed to using digital health tools to enhance patient outcomes and all we need is access.[1]

Increasingly community-based pharmacists are getting access to health information systems and progress varies by province. The Our Practice (September 2017), feature article describes work-arounds we have used for years to compensate for lack of direct information access in BC. For readers who do not yet have access to provincial databases, this article is still relevant.

In early 2021, the UBC Pharmacists Clinic was a test site for BC's Provincial Health Services Authority (PHSA) to connect community pharmacists to CareConnect, the provincial electronic health record (EHR). Now work is underway to get all BC community pharmacists connected.

Now that we have CareConnect, we can't care for patients without it.

More about CareConnect

CareConnect, BC's secure, view-only EHR, delivers integrated, patient-centric information to healthcare providers to streamline and support patient care. It provides pharmacists valuable access to lab values, immunization records, and clinical documents from a number of health authorities and programs across the province.

CareConnect is accessed via a secure web portal, which we can open directly from within OSCAR, our clinic's EHR. We hope other software vendors will create ways for pharmacists to access CareConnect easily from their own systems.

We check CareConnect before, during and after patient appointments. We no longer have to ask and depend on patients or prescribers for lab test results. We can access current and historical lab values, clinical documents and immunization records with only a few clicks.

Lab Values

CareConnect gives us access to lab values recorded by health authority-run hospitals and clinics, plus community-based lab services (e.g., LifeLabs). We use this data to pro-actively make dose recommendations, dose adjustments and monitor patient progress, especially for patients with renal or hepatic impairment, patients taking medications with additive effects and those on narrow therapeutic index treatments such as digoxin, lithium, and warfarin. Having access to recent results helps us put recommendations into place and reduces problems associated with ordering duplicate tests.

Clinical Documents

The clinical documents we find particularly helpful in CareConnect are discharge reports, consultation notes, and summaries of care received in a hospital or health authority-run clinic. Information gems in these documents include a patient's medical history, past medication trials, specialist recommendations, current or past care plans and a more detailed background of current medical conditions. This information helps us better understand the details and nuances of a patient's history and helps us make more precise, relevant and impactful clinical decisions. It also helps us understand the approach of other providers, reduces the risk that we will inadvertently modify care plans and puts us on the same page as other members of the care team. This is particularly important since our patients tend to have multiple comorbidities and complex health issues, and receive care from multiple providers already.

Immunization Records

We routinely ask all patients in our care about their immunization status. However, most patients don't know, so determining their immunization status and identifying unmet vaccination needs is a challenge. With CareConnect, we can now view a subset of patient-specific immunization information from the Provincial Immunization Registry and PharmaNet. We can identify vaccination needs and offer immunizations during the same appointment. Adverse events following immunization are also reported in CareConnect so we know if a patient has unique history or risks.

Using CareConnect gives our team confidence that we have critical medical information readily available to make patient-care decisions. We are better prepared, we provide more precise, timelier and coordinated recommendations and ultimately, we are more effective clinical pharmacists.

If you are a pharmacist practising in BC and your workplace has not yet registered or shared information on their plans to register for CareConnect access, you can learn more about CareConnect here.

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CASE STUDY

To prescribe or not prescribe: that is the question with serotonin toxicity

BY: TIANA TILLI, PHARMD, RPH, ACPR

S.R. is a 68-year-old female referred to the Pharmacists Clinic by her neurologist for migraine management. She has been experiencing weekly migraines for four months, presenting as right-sided pounding pain at the frontal lobe. The pain starts in the morning at an intensity of 3/10 and worsens throughout the day to an intensity of 8/10. The migraines last 12 hours and are associated with nausea.

She is taking duloxetine 30 mg daily for anxiety, trazodone 100 mg nightly for insomnia, and sumatriptan 100 mg daily as needed for migraines. Her social history is non-contributory and non-pharmacologic options have been optimized. She did not respond to a two month trial of magnesium citrate 300 mg twice daily and riboflavin 400 mg daily. While beta-blockers and tricyclic antidepressants (TCAs) are first-line therapies for migraines, she is averse to beta-blockers given the potential for exercise intolerance.[1] Second-line options include anticonvulsants such as topiramate, but she would prefer to avoid them given the risk of cognitive impairment.[1]

S.R. previously experienced migraines in her 20s that responded to amitriptyline 40 mg nightly which she took for 7 years before her migraines remitted in her 30s. Her mother experiences migraines that respond to TCAs. S.R. is interested in re-starting amitriptyline but her family doctor is worried about serotonin toxicity.

Serotonin toxicity is a dose-related, drug-induced condition resulting from too much serotonin in synapses in the brain.[2-4] While the true incidence of serotonin toxicity is

unknown, one study found an overall incidence of 0.57% in patients taking linezolid with or without an SSRI/SNRI.5,6 Serotonin toxicity presents as a triad of neuromuscular (e.g., tremor, hyperreflexia), autonomic (e.g., mydriasis, diaphoresis, tachycardia), and mental status changes (e.g., agitation, confusion, delirium).[2-4] Symptoms begin within hours to one day of starting or increasing a serotonin-elevating medication.[3] Cases requiring hospitalization almost exclusively involve a monoamine oxidase inhibitor (MAOI).[3]

Serotonin toxicity occurs when serotonin is elevated, often through more than one of the following mechanisms: inhibition of monoamine oxidase (e.g., MAOI), inhibition of serotonin reuptake (e.g., SNRIs), and increased presynaptic release of serotonin (e.g., amphetamines). [2,3,7] While many subgroups of serotonin (5-HT) receptors exist, it's thought that the 5-HT 2A and 5-HT 1A receptor subgroups are those involved in serotonin toxicity.[3,7-9] Confusion exists regarding which medications are implicated in serotonin toxicity.[3,7,9-10]

TCAs inhibit serotonin reuptake with varying degress of affinity for serotonin transportion.[3,7,9] Amitriptyline and nortriptyline have weak reuptake inhibitor potency and are not associated with serotonin toxicity.[3,7,9] Trazodone does not have clinically significant serotonin reuptake inhibition potency.[3,7,9] Triptans have high affinity at serotonin 1B and 1D receptors and low affinity for serotonin 1A receptors.[1,3,7,9,10]

With a goal of reducing S.R.'s migraine frequency and intensity, while minimizing the risk of serotonin toxicity, we discussed re-starting a TCA given her past success. We reviewed that, even with the addition of amitriptyline, S.R.'s only serotonergic medication is low-dose duloxetine.

We recommended a trial of amitriptyline 10 mg nightly at bedtime increasing by 10 mg every two weeks to 40 mg nightly. We educated S.R. on self-monitoring for serotonin toxicity and to contact a healthcare provider if symptoms present or visit a hospital if symptoms are severe or progressing quickly. We explained that non-toxic increases in serotonin, like starting a new antidepressant, can cause anxiety, restlessness, and irritability for one to two weeks. We scheduled follow-up appointments the day after starting and increasing amitriptyline to assess safety and two months later to assess efficacy.

Drug interactions involving risk of serotonin toxicity are commonly misunderstood. While it is important to assess potential clinical risk, it is also important that patients not miss out on clinically beneficial medications.

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Note

Each case study has been peer reviewed and qualifies as a non-accredited learning activity (CE-Plus) within the annual professional development requirement for licensure by the College of Pharmacists of British Columbia.

Your Responsibility

The recommendations in this case are based on the views of our clinicians after careful consideration of the best available evidence and needs of a specific patient. As a health care professional, you will assess each of your cases based on the patient's unique circumstances and in consultation with the patient and their care team.

If you would like to discuss one of your patients with us please contact the Clinic team.