The value of laboratory values: A community pharmacy perspective

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AS THE DATE OF MY GRADUATION AND SUBSEQUENT entry into the Ontario pharmacy workforce draws near, I can't help but think the grass is greener on the other side when it comes to the community pharmacy landscape in neighboring provinces. In Alberta, Manitoba, New Brunswick, Nova Scotia and PEI it is within the pharmacist's expanded scope to order and interpret laboratory tests.¹ While similar authority in Ontario is currently pending, change can't come soon enough as I eagerly look forward to entering practice and providing patients with optimal pharmaceutical care.¹ Integrating patient laboratory values has been an important component of developing the pharmaceutical care plan during my experiences on previous co-op placements and in pharmacy school education. My hope is that in the future, the ability to incorporate laboratory values into practice in a community pharmacy will be a reality across Canada.

My most recent co-op placement was at an anticoagulation clinic in a family health team, where I had access to the electronic medical record and patient laboratory values. This information was instrumental to completing my daily tasks. Many of our patients were taking one of the new oral anticoagulants (e.g., rivaroxaban), the dosage of which depends on the patient's renal function. There were certainly multiple occasions during my placement when the dose was decreased or a switch to an alternative agent was necessary due to a patient's renal function. On that same co-op placement, an influenza preparedness project I was involved with consisted of predetermining the dosage of prophylaxis oseltamivir (Tamiflu) for each of the residents of a retirement home. The majority of patients required a dosage adjustment. Another assignment I completed involved compiling a list of

drugs requiring dosage adjustment in renal impairment. This list contained a significant number of commonly prescribed medications: diabetes medications such as glyburide and metformin, antibiotics such as ciprofloxacin, and bisphosphonates such as alendronate. From my limited experience in practice as a pharmacy student, I came across many instances where patient laboratory values were a vital factor in determining the safe dose for a patient.

In school we are taught the pharmaceutical care process of ensuring medications are indicated, effective and safe and that the patient is able to comply with the regimen. The patient cases we work up in class almost always provide laboratory values to aid in assessing the patient. Without key laboratory information, such as a creatinine clearance, it would be difficult to confidently assess the safety of certain medications. Similarly, access to certain laboratory values, such as thyroid function tests or A1C, would be beneficial for a pharmacist to determine the effectiveness of a given medication. Coming from a co-op setting where laboratory information was readily available, it would feel to me as if I were "going in blind" without key information to do my job in a community pharmacy. However, legislative and practice changes are not based on anecdotal stories or feelings; evidence is needed. The available literature does just that and points to the need to support pharmacists in accessing laboratory values in providing pharmaceutical care.

A systematic review evaluating enhanced pharmacist care of patients with dyslipidemia demonstrated a lower mean low-density

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lipoprotein level, lower mean total cholesterol and higher likelihood of achieving lipid targets.² Studies included in the review involved pharmacist care delivered independently or as part of a collaborative setting, and a number of the studies took place in a community pharmacy.² Interventions by the pharmacist included laboratory tests ordered, patient education, adherence assessment and drug therapy recommendations; it could be argued the latter aspects depend on or are enhanced by knowledge of the patient's laboratory test results.²

A study conducted in the community pharmacy setting looking at patients over 65 years with renal impairment (defined as creatine clearance <60 mL/min) and on 3 or more medications found the baseline level of dosing inadequacy and drug-related problems to be significant.³ Pharmacist intervention had a demonstrable effect in improving dosing and addressing drug-related problems.³ The study concluded there is a need to check renal function in the elderly attending community pharmacies.³ The Institute for Safe Medication Practices (ISMP) reports a case in which a patient received dabigatran at a dose too high for the patient's renal function, resulting in a massive gastrointestinal bleed.⁴ The ISMP acknowledges that community pharmacists are at a disadvantage in catching these errors due to the limited sharing of laboratory data between doctors' offices and community pharmacies.⁴ These examples illustrate there is a case to be made for pharmacist access to laboratory values to improve safety and resolving drug-related problems.

A survey of recently graduated family physicians indicated an overall willingness to collaborate with community pharmacists, including acknowledging the importance of pharmacists being aware of changes in patients' creatinine clearance.⁵ Survey respondents were also open to sharing responsibility for adjustment of treatment in certain conditions.⁵ A 2008 report on the sharing of electronic medical records, including laboratory results, between physicians and community pharmacists in Sault Ste. Marie found that patients were quite comfortable with this sharing of health information—many patients had thought pharmacists already had the ability to access such information.⁶

There was once a time in pharmacy, in the 1950s, when pharmacists could only dispense the medication as written by the doctor and provide directions for use.⁷ Discussing the name of the drug, the indication, potential side effects or management of the health condition was forbidden.⁷ As we look back from where the pharmacy profession is now, the concept of not being able to discuss important information regarding medications with the patient seems absurd. I hope we can someday look back to say how absurd it was for community pharmacists to assess the appropriateness and safety of a medication without patient laboratory values. Reports and experiences show that pharmacist access to laboratory values improves patient care, while new physicians and patients are open to the sharing of this information. I think it is time this becomes standard to community pharmacy practice across the country. ■

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