

# The Need to be Quick

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One of the recurrent challenges of pharmacy practice in acute care settings is the need to respond quickly to patients' drug therapy needs. Pharmacy departments and individual pharmacists are frequently criticized for tardiness in the provision of medications or the application of professional services. Every pharmacy administrator, pharmacist, and technician can appreciate the humanistic value of providing certain medications quickly, as in the case of analgesics for a patient in pain. However, in other situations, pharmacy departments and individual staff members may not appreciate the importance of rapid provision of drug therapy. As a profession of care providers, we need to organize our workflow patterns and systems in a manner that meets the needs of our patients. Data are accumulating to indicate that if we fail to meet this standard, patients will suffer.

The need for rapid provision and administration of the appropriate amount of the correct drug is intuitively of greatest value for conditions that lead rapidly to morbidity or mortality. Pharmacy departments and health care institutions as a whole have developed methods for rapid provision of drugs to patients experiencing cardiac or respiratory arrest. However, other imminently lethal conditions require similar planning. For example, the morbidity and mortality associated with bacterial meningitis is directly related to the rapidity of treatment. Researchers in Minnesota found that the outcomes of meningitis were better for patients who were treated quickly in the emergency department than for those who received their treatment as inpatients, with a mean time to initial antibiotic administration of 1 h versus 6 h, respectively<sup>1</sup>. More recently, French investigators found a difference in outcome of pneumococcal meningitis for patients who received the first antibiotic dose within 3 h of presentation at the hospital and those whose therapy was delayed.<sup>2</sup>

Septic shock is another condition associated with significant morbidity and mortality. Current recommen-

dations call for antibiotic therapy to be administered within the first hour after recognition of severe sepsis.<sup>3</sup> This recommendation has recently been validated by Canadian investigators, who looked at the impact of treatment delay on survival among patients with this condition.<sup>4</sup> These investigators evaluated the time of administration of initial antibiotic therapy for 2731 patients with septic shock (defined as persistent hypotension, with mean diastolic blood pressure below 65 mm Hg or mean systolic blood pressure below 90 mm Hg or a decrease in systolic blood pressure of more than 40 mm Hg from baseline, despite adequate fluid resuscitation). For each hour of delay from onset of hypotension to administration of antibiotic, average survival decreased by 7.6%. This pattern held for delays of up to 6 h. The consequences of any delay in administration of antibiotics appear staggering, with a delay of as little as 3 h resulting in an increase in mortality of 20% or more.

Providing safe drug therapy to patients in such a short time frame presents challenges. It might be easy to have all medications available at the site of care at all times (i.e., a large ward stock).<sup>3</sup> However, this solution bypasses the pharmacist and hence the opportunity to evaluate potential contraindications (such as known allergies or drug interactions with concurrent drug therapy or medical conditions) and ensure the appropriateness of therapy, in relation to site of infection, patient characteristics, and pathogen susceptibility within the particular institution. A growing body of literature suggests that provision of an appropriate spectrum of antibiotic therapy for treatment of critically ill patients is an important determinant of outcome.<sup>5,6</sup> Similarly, the pharmacist can help to ensure that the initial dosage of the antibiotic is adequate to provide sufficient tissue concentrations.

A further challenge is to organize pharmacy services in a manner that allows patients to receive care at any time of the day, 365 days a year. I doubt there is any institutional pharmacy department in Canada that can



assure patients that a pharmacist will always be available to review medications within 15 min (as for a “stat” medication). To provide such a breadth of service would require creative ways of involving pharmacists prospectively and concurrently with the initiation of critical drug therapies. Many of our pharmacy colleagues are accepting these challenges and are investigating barriers causing delays and solutions to these delays in care provision.<sup>7,8</sup>

I challenge you to discuss at your next departmental meeting whether your pharmacy can provide critical therapies to acutely ill patients within a time frame that offers optimum outcomes. If not, work needs to be done. It could well be a matter of life and death.

### References

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