

## Practice Spotlight: Ron Donnelly

Ron Donnelly, BSc(Pharm), MSc(Chem)  
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Ron Donnelly has worked in the Custom Compounding Area at The Ottawa Hospital for almost 20 years. His responsibilities consist of compounding pharmaceutical products for in-hospital use, quality control testing of these products, compounding and packaging supplies for clinical trials, and performing physical compatibility and chemical stability studies. The Custom Compounding Area was created in 1983 and remains one of the few hospital services in Canada in which pharmaceutical products are compounded and subjected to full quality control testing before release.

The Custom Compounding Area was originally started to help reduce hospital drug costs by manufacturing on site products that were also commercially available, such as IV nitroglycerin, silver sulfadiazine cream, and metronidazole in minibags. However, to meet Health Canada's requirements for Good Manufacturing Practices (GMP) for the manufacture of pharmaceuticals, the focus of the service was later changed to compounding for in-hospital use only products that are not commercially available, and was eventually expanded to include physical compatibility and chemical stability research.

About 30 products are compounded and tested regularly by the service, including suppositories, capsules, and parenteral products. Several other products are prepared on request. Quality control testing consists of sterility, pyrogen, pH, and chemical

analysis for parenteral forms and chemical analysis for all other dosage forms.

In support of clinical trials conducted at the hospital, the Custom Compounding Area provides a blinding and packaging service for investigators. When required, placebo forms of the study medication are also prepared by the Custom Compounding Area. Blinding consists primarily of placing the contents of commercial tablets or capsules into opaque capsules and packaging the capsules into containers for use in the clinical trials. Mr Donnelly is a member of the Ottawa Hospital Research Ethics Board, helping to review clinical research proposals.

The cost of purchasing a high-performance liquid chromatography system to conduct chemical stability research in the Custom Compounding Area was justified by the potential for reduction of wastage of IV admixture drugs in the hospital. In addition, with the change to batch production of unit-dose syringes, there was a need for stability information for the more concentrated solutions. Over the years, the expiry dates for many IV admixture drugs have been extended, which has significantly reduced wastage. As new products are introduced, expiry dates are generated using stability-indicating chromatography methods. The Custom Compounding Area has also performed a number of stability studies for outside clients. Several pharmacy residents have completed research projects in the area, and 2 of these residents have gone on to obtain Doctor of Philosophy degrees in related topic areas. To date, Mr Donnelly has published more than 15 articles in various peer-reviewed journals reporting the results of stability studies.

The Custom Compounding Area is funded partly by the hospital and partly by revenues generated from the packaging of clinical supplies and stability research activities. The staff consists of one full-time pharmacist (Mr Donnelly) and one part-time pharmacy technician, who is responsible for packaging and labelling of the final products.

The activities of the Custom Compounding Area represent a unique blend of pharmaceutical compounding and analytical chemistry, which together provide an important pharmacy service in this tertiary care teaching hospital. The challenges of working in this specialty area have pushed Mr Donnelly to remain abreast of changes in both fields. He finds it very rewarding to develop a new product or stability method that ultimately leads to better patient care.

Because of the uniqueness of the work conducted in the Custom Compounding Area, Mr Donnelly is often called upon to act as a resource person, answering questions from within his own hospital as well as from outside hospitals, both locally and nationally.

The Practice Spotlight series highlights the accomplishments of Canadian pharmacists with unique practices in hospitals and related health care settings. If you have a unique or innovative practice, or you know someone else who should be profiled, please submit your contact information to Mary Ensom, Editor of *CJHP* (cjhpedit@cshp.ca), and one of our Associate Editors will be in touch with you.

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