

# Most prescription labels fail to meet guidelines, risking dosage errors

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Small print and poor printing on prescription labels handed out by pharmacists may be misread and may lead to errors in taking medication, according to new research by the University of Waterloo and CNIB (Canadian National Institute for the Blind).

The study, published recently in the *Canadian Pharmacists Journal*, found that labels on [prescription medications](#) dispensed by pharmacies do not consistently follow professionally recommended guidelines for legibility.

By simply following recommended guidelines for font size, use of bolding, justification, sentence case and spacing, researchers expect pharmacies can improve the legibility of their labels without the need for new technologies or larger labels.

"Surprisingly, there are few guidelines and no regulations for the print on prescription labels in Canada," said Dr. Sue Leat from Waterloo's School of Optometry and Vision Science. "In Ontario, regulations specify only the content of prescription labels, not how they appear."

Health professionals and patients are finding label appearance is more important as a significant number of older Canadians experience vision and reading comprehension problems. Patients also prefer to read their own prescriptions to preserve their privacy and independence.

Researchers asked 45 pharmacies in Kitchener, Waterloo and

Cambridge to print a sample prescription label with the patient's name, drug name and instructions for use. The sample label was then compared with label printing recommendations from pharmaceutical and health organizations, and non-governmental organizations for readability.

The results show that less than half – 44 per cent – of labels met the minimum font size of 12 points. Only half of labels were printed left-justified and few met the recommendations for best use of spacing.

All labels used capital lettering, which is difficult for patients with eye problems to read, instead of the recommended sentence case.

More than 90 per cent of labels followed guidelines for font style, contrast, black print and non-glossy paper.

"The research shows that factors such as [font size](#), sentence alignment, case and contrast can impact the readability of the label," said Professor Carlos H. Rojas-Fernandez from Waterloo's School of Pharmacy and a Schlegel Research Chair in Geriatric Pharmacotherapy. "We expect that addressing these factors together will improve the accessibility of prescription labels. We need to move from a pharmacy-centred labelling standard, to a patient-centred one."

This is the first collaborative research project between Waterloo's School of Pharmacy and School of Optometry and Vision Science and was funded by the CNIB Baker Fund.

"CNIB helps thousands of Canadians with vision loss maintain their independence," said Deborah Gold, a study co-author and national director, research and program development at CNIB. "In order to do this and eliminate potentially dangerous medication accidents, we need to raise this issue amongst our colleagues in the pharmacy community."

Recommended guidelines considered in this study came from the US Pharmacopeia (USP), the American Society for Consultant Pharmacists, the National Patient Safety Agency in the UK, the American Foundation for the Blind (AFB), the Canadian National Institute for the Blind (CNIB), the Royal National Institute of Blind People (RNIB) in the UK, and the American Council of the Blind (ACB).

The researchers plan to develop a prototype pharmaceutical label and test its readability and accuracy and use a questionnaire to survey pharmacists and patients (with and without visual impairments).

Provided by University of Waterloo

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