

Inequities in medicines use are probably much worse than we thought

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In 2006–2007, Metcalfe *et al.*¹ estimated that Māori are missing out on nearly a million prescription items per year. A subsequent report suggested the situation in 2012–13 might have been worse than this.² Parallel work adjusting for burden of disease has not been conducted for Pacific peoples, but age-standardised rates show lower-than-expected prescription numbers. These inequities are likely to be the result of many things, such as general practitioner (GP) fees, transport, acceptability of services, and prescription charges.^{3–5}

All of these estimates are based on Pharms data. This is the large routinely collected dataset of publicly funded medicines dispensed in community pharmacies. But in this setting, what does ‘dispensed’ mean? Like other researchers, we have always assumed that ‘dispensed’ meant that the patient (or whānau) have left the pharmacy with the medicine in their hand. But it turns out that this assumption is wrong, and this casts doubt on previous estimates of ethnic and other inequities.

The reality of working life in a busy community pharmacy, significant workforce shortages⁶ and the need for an efficient workflow can mean that some prescriptions are processed though the pharmacy computer system and therefore recorded in Pharms, but do not end up in the patient’s hands. In the past, prescriptions arrived at pharmacies in customers’ hands; now, many arrive electronically, through e-prescribing. Some pharmacies do not prepare these prescriptions until a patient has arrived or when it is otherwise indicated that they want to pick it up. In this situation, the prescription details are not entered into the pharmacy computer system, so no funding claim is generated for that prescription until the patient indicates they want the medicine. Other pharmacies find this results in too much patient frustration. Conversations with pharmacists suggest that most pharmacies prepare prescriptions, enter them into their computer and therefore make a claim for them as the prescriptions arrive in the pharmacy, which might be before the patient picks them up.

Most pharmacies have a substantial shelf full of medicines that people have not picked up. Until July 2023, when the government eliminated the usual \$5 prescription copayment,⁷ cost was an important reason for this. There are, of course, other reasons.⁸ If the patient does not pick up the prescription, dispensings are sometimes cancelled, which reverses the claim and removes the record from the Pharms database; however, there is no consistent time-point at which this would be done, and it might not always occur.

Procedures vary widely between pharmacies, and it is impossible to know what proportion of claims are reversed when prescriptions are uncollected. There are multiple reasons why a claim might not be reversed; for example, when a prescription is dispensed by a pharmacy and then sent to a depot, if it has sat on a shelf for weeks waiting to be picked up, it cannot be reused, because its quality can no longer be assured. The pharmacy might not even know that the patient has not picked up the medicine.

Some pharmacies use a bar code system, which only submits claims when medicines are picked up, but others feel that the delay between doing the work of dispensing and being paid for the (possibly expensive) medicine that has sat on the pharmacy shelf, can be too great, so some do not use this system. Also, the pharmacy is not paid at all for the time it has taken to prepare and then undo the prescription.

Procedures might also vary by the type of medicine. Those with visible expiry dates (on packages) can be returned to the stock and re-used, but those counted into bottles cannot. Claims are more likely to be reversed for the former than the latter.

Medicines packed into compliance packs have been mixed together, so cannot be re-used. In one pharmacy we know of, liquid antibiotics are prepared up to the point of adding liquid, and claims are deferred until the patient arrives, liquid is added and the medicine is handed over.

In our experience, e-prescribing has significantly increased the number of medicines sitting waiting to be picked up. In the past, if a person left the medical centre with a paper prescription that they did not want, they did not take it to the pharmacy. Now, prescriptions are automatically sent to a pharmacy (whether or not the patient has any intention of picking them up).

So why should we care about the intricacies of internal processes within pharmacies? For two important reasons:

First, these mean that Pharms is likely to over-estimate medicines use, particularly for people who do not pick up their prescriptions for cost or other reasons. The New Zealand Health Survey shows that Māori, Pacific, people with disabilities, and people living in highly deprived areas are more likely to go without prescription medicines because of cost;⁴ therefore, we are likely to have been over-estimating how many medicines people in these groups receive, and under-estimating the extent of inequities.

Second, it is going to be difficult to use Pharms data to evaluate the impact of eliminating the \$5 prescription charge in July 2023. Although it is an excellent data source

for the general population, and we are fortunate to have such a comprehensive dataset, it might not be accurate enough to detect changes in behaviour among people who previously struggled to afford their prescriptions.

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Data availability. The paper is based on published literature along with the authors' personal experiences, and those of their colleagues.

Conflicts of interest. Pauline Norris has performed contract work for Green Cross Health. Gemma Waterhouse-Perry owns Sanders Pharmacy Te Awamutu. She is a Director of Pharmacy Wholesalers BOP Ltd, and a founding member of the Prescription Access Initiative.

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