

# Combating the problem of **WASTED MEDICINES**

Wasted medicines have received increasing attention in recent years, being blamed for adding to the economic burden of health systems. Sarah Marshall reports from a session in which the problem and potential solutions were discussed.

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Recycling patients' leftover medicines is not the solution to the problem of wastage according to Eeva Teräsalmi, co-chair of FIP's Working Group on Green Pharmacy Practice. Reusing pharmaceuticals that have left the controlled environment of pharmacies raises ethical and safety issues, risking harm to the patient and the possibility of introducing substandard, spurious, fake, falsified and counterfeit medicines into the supply chain, she said. In addition, recycling unused medicines is unlikely to benefit the environment significantly since the main contributors to environmental problems are the metabolic products of pharmaceuticals taken by patients and animals, she contended.

However, pharmacists can still play a pivotal role in reducing medicines waste by encouraging rational prescribing and adherence, and educating patients about the proper disposal of medicines, including the return of unused medicines to the pharmacy. "[Recycling leftover medicines] is so unsafe and so expensive, that it will never cover the costs incurred or solve the environmental and other problems associated with wastage," she said. She believes that governments seeking to save money by recycling patients' leftover medicines should look for other solutions to reduce drug wastage.

## **Medicines banks**

One such solution could be medicines banks. A medicines bank is an effective, sustainable way of improving access to medicines for people living in poverty while reducing pharmaceutical waste, according to Maria Del Rosario Gómez, director of the Banco de Medicamentos in Colombia. It works with the simple but revolutionary idea that pharmaceutical companies could avoid the environmental and economic impact of destroying good quality drugs by donating them to the medicines bank, which can then distribute them to charities working with people who are unable to afford medicines.

## ***"Recycling patients' leftover medicines is not the solution to the problem of wastage."***

An estimated 125 million people in Latin America do not have permanent access to the medicines that they need. In Colombia, this lack of access may be because patients live in remote areas, are marginalised or vulnerable, or unable to afford the high costs of pharmaceuticals in the private sector, when the public sector supply is inadequate or unreliable. There is a huge need for medicines. Mrs Del Rosario Gómez explained that pharmaceutical manufacturers in Colombia may have good quality but



unusable stock for a number of reasons. For example, stock may be surplus, close to expiry, or the outer packaging may have been damaged. This is expensive to destroy as well as impacting on the environment. Banco de Medicamentos began in 2002, when the charity Misión Salud, partnered with six Colombian pharmaceutical companies and 16 non-governmental organisations (NGOs) to find an innovative solution to these interlinked issues.

Donating industry partners supply Banco de Medicamentos with a list of available pharmaceuticals, which would otherwise be destroyed. The bank requests from them any medicines that are needed and NGOs then place monthly orders at the bank. The medicines are subsequently supplied to patients who have been prescribed them by NGO staff. Careful monitoring of stock levels and usage allows products to be supplied and taken by patients before their expiry. The NGOs contribute to the running costs of the bank by paying a nominal fee. The project has grown in the past 14 years and currently works with more than 140 charities and 16 manufacturers.

Although drug recycling schemes can raise concerns about the quality of reused medicines, the Banco de Medicamentos scheme has sought to address this by tackling drug wastage earlier in the supply chain. The bank is able to guarantee the quality of medicines supplied by working according to World Health Organization Guidelines for Donations and following legal and regulatory frameworks. The bank adheres to strict criteria, accepting only medicines that are “factory fresh”, licensed, and labelled for use in Colombia. Banco de Medicamentos also only accepts medicines that it knows NGOs will need and use before they expire. This avoids costs of destruction simply being passed on to another organisation.

Since the establishment of the partnership, 27 million units of medicines for a range of diseases have been delivered to more than 45,000 people who otherwise would not have been able to afford treatment. In addition, this has avoided the destruction of 26,000 tons of medicines and saved USD 8m, said Mrs Del Rosario Gómez. As industrial efficiency has improved, sustainability of the project has been achieved by widening the list to include diapers and nutritional supplements, for which a small fee is charged. The revenue generated has also enabled the purchase of medicines from manufacturers at substantially reduced prices when needed. This model could be replicated in other countries, said Mrs Del Rosario Gómez.

### Recent findings

Only 7% of patients store their tumour necrosis factor (TNF) alpha inhibitor products at the correct temperature, according to findings of the Dutch Wastage in Health Care

Initiative presented by Helga Gardarsdottir, assistant professor of pharmacoepidemiology at University Medical Centre in Utrecht, Netherlands. This research was only one part of a multifaceted project set up to explore issues around the recycling of medicines returned by patients. Having established that patients and stakeholders were in favour of recycling medicines, provided certain criteria were satisfied, her team began to investigate the practical implications of doing this. In one study they placed temperature recorders in packs of TNF alpha inhibitors dispensed to 255 patients by 10 pharmacies. Readings showed that storage temperatures in patients’ domestic refrigerators varied enormously, making it impossible to guarantee the quality of such medicines for reuse should they be returned. Some 25% of the patients stored their TNF alpha inhibitor preparations below 8°C for more than two hours. And 6% of patients stored their medicines for 24 hours or more at this low temperature. The project findings surprised the team and demonstrated how little is known at present about home storage practices and their effects on medicines quality. “We need to know what happens with drugs when they are not in our environmentally controlled storage facilities,” Dr Gardarsdottir said.

### *“Redispensing is financially unviable.”*

“Wastage occurs at every step of the medicines chain,” Dr Gardarsdottir pointed out. She highlighted that responsibility for waste rests with all those involved, from prescribers and pharmacists to patients. The value of drugs returned unused to pharmacies in the Netherlands is estimated to be 2–4% of the country’s total expenditure on medicines and about a fifth of all returns are theoretically candidates for reuse. This led the Dutch Ministry of Health to establish a National Wastage and Healthcare hotline in 2013 for anyone wishing to contribute ideas on how wastage of medicines could be avoided. The hotline received over 23,000 calls, indicating significant interest in the subject. However, when Dr Gardarsdottir’s group set up simulations in four pharmacies to investigate the financial feasibility of redispensing returned medicines, the results indicated that the implementation costs of such a system would be EUR 200 for each product stored at room temperature and EUR 600 for each medicine requiring storage in a refrigerator. This makes redispensing financially unviable, since many of the medicines returned to community pharmacies had a value below these thresholds. Dr Gardarsdottir concluded that although stakeholders and patients were in favour of recycling unused medicines, there are a number of practical reasons as to why this should not be done. She agreed that waste should be tackled earlier in the prescribing and dispensing process.