

'Mystery clients' help reveal concerning levels of antibiotic dispensing without prescription in Indonesia

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More than two-thirds of visits to private drug retail outlets in Indonesia resulted in antibiotics being dispensed without a prescription, according to new research in *BMJ Global Health*.

The study was conducted by a team from the London School of Hygiene & Tropical Medicine (LSHTM), the Kirby Institute at UNSW Sydney, Universitas Gadjah Mada, Universitas Sebelas Maret, the Indonesian Ministry of Health, University College London, and The George Institute for Global Health at UNSW Sydney.

The problem of antimicrobial resistance (AMR) is amplified by the incorrect or over-prescribing of antibiotics. It is a major and complex public health concern, as it causes infectious diseases to become resistant to the antibiotics used to treat them.

Study lead Professor Virginia Wiseman, from the Kirby Institute and LSHTM, said: "In Indonesia, community pharmacies and drug stores are often conveniently located, trusted and accessible, providing an important source of essential medicines. But there are growing concerns about inappropriate dispensing practices in the community that drive AMR.

"To address this, we first needed to understand the magnitude of this problem, so in partnership with the AMR National Taskforce led by the Indonesian Ministry of Health, we began a comprehensive program of research to strengthen evidence in this area."

Professor Wiseman and colleagues designed a study that used 'mystery clients' to visit private drug retail outlets in Bekasi city in West Java Province and Tabalong district in South Kalimantan Province. The mystery clients simulated different symptoms and recorded details of the interactions.

Over 495 different outlets were visited, with almost 70% of these visits resulting in the dispensing of antibiotics without a prescription, an act which is prohibited by law.

Professor Wiseman says that "the fact that over two-thirds of visits to outlets in Indonesia resulted in the sale of at least one antibiotic without a prescription and often with no advice, is very concerning. This includes the use of some second-line antibiotics which should only be prescribed in very specific circumstances."

Dr Luh Putu Lila Wulandari, Research Fellow at the Kirby Institute and first author on the paper, said the qualitative component of the research helped to break down some of the reasons why staff were selling antibiotics without a prescription.

She said: "Many felt pressured to by their clients, which highlights the complexity of this work. While there is a profit-making motivation for some dispensers, the reality that providing these medications without a prescription is considered the norm shows the need for both regulatory and cultural change around the dispensing of antibiotics."

There are significant health system pressures in Indonesia, made more complex by the current COVID-19 pandemic, but the researchers say that the largely unregulated dispensing of antibiotics needs to be addressed urgently.

Professor Probandari from the Universitas Sebelas Maret and Gadjah Mada, one of the PINTAR Chief Investigators, said: "In many ways COVID-19 has exacerbated the problem, with more people unwell or fearing they will become unwell, and seeking medical advice and medicines like antibiotics wherever they can find them.

"A multi-faceted approach is needed, taking into account the profit-maximizing motives of drug outlets, the high demand for [antibiotics](#) among clients, and the push from owners to compete with other outlets. The good news is that the Indonesian Ministry of Health is prioritizing this and committing resources to finding practical health solutions."

The authors acknowledge limitations of the study including the fact it was carried out in just two districts in Indonesia, and the mystery client approach itself which meant drug outlet staff were dealing with unfamiliar patients rather than regular patients who they might have treated differently.

This research is conducted as part of the Protecting Indonesia from the Threat of Antibiotic Resistance (PINTAR) and is supported by a grant from the Indo-Pacific Centre for Health Security (DFAT) under the Australian Government's Health Security Initiative. The PINTAR team is working in partnership with the Indonesian Government to develop strategies to improve antibiotic use in the private sector.

More information: Luh Putu Lila Wulandari et al, Prevalence and determinants of inappropriate antibiotic dispensing at private drug retail outlets in urban and rural areas of Indonesia: a mixed methods study, *BMJ Global Health* (2021). [DOI: 10.1136/bmjgh-2021-004993](https://doi.org/10.1136/bmjgh-2021-004993)

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