

How much unnecessary prescribing of antibiotics is there in primary care?

Data from private and public sectors

HOW WAS THE STUDY DONE?

We used the standardised patient method to measure the rate of unnecessary antibiotic prescribing in primary care. A standardised patient (SP) is a fieldworker who has been trained to represent consistently a specific clinical case, and is then sent to act as a real patient and visit primary care providers. The SPs are also trained to remember all the details of their consultation which they record immediately after completing the visit.

The SP method is seen as the gold standard method for evaluating the quality of primary care.

SPs portrayed a case of Acute Bronchitis (Box 1). Such an uncomplicated case should not receive antibiotics. The main study outcome was whether SPs were given antibiotics or not. We also recorded other aspects such as waiting times, duration of the consultation, the number of questions asked and examinations performed during the consultation, and the cost of the consultation, and the cost of the medicines given.

After completion of all SP visits, we interviewed participating providers to evaluate their clinical knowledge

Box 1: Acute Bronchitis case portrayed by standardised patients in this study

- Young healthy adult (20–25 years).
- For the last week they have had a normal cold with a runny nose, sore throat and a cough.
- They are feeling a bit better now and the nose and throat symptoms have improved.
- However, the cough has not gone away after 7 days which is why they have come to the clinic or doctor. The cough is only productive of small amounts of clear white mucus.
- They have had no fever, chest pain, shortness of breath, or other significant symptoms.
- They have no other diseases or family history.
- There are no signs to find on examination.

and awareness of antimicrobial resistance.

The study was done in one of the large Metropolitan cities in South

Africa during the cold season in 2018, where the SPs visited 125 private GPs. For the public sector, 102 visits were conducted in 73 municipality clinics, where SPs were mostly seen by nurses. Providers had given prior consent to the study, but they did not know when SPs would visit or what case they would portray. In checking afterwards, less than 1% of SPs were identified as suspicious by the providers, confirming that the results are valid.

WHAT DID THE STUDY FIND?

Unnecessary antibiotic prescribing

Overall 78% of the standardised patients sent to a public clinic and 67% of patients sent to a private general practitioner (GP) received antibiotics even though antibiotics were not clinically indicated (Figure 1).

In the public sector the antibiotic given was mostly amoxicillin (93%). Private GPs chose a wider range of antibiotics: 37% of SPs given antibiotics were given amoxicillin, followed closely by an amoxicillin-clavulanic acid combination (31%), and azithromycin (23%).

Figure 1: Rates of unnecessary antibiotic prescribing



Different packages of medicines given in the public and private sectors

On average the SPs seen by private GPs were given 3.5 drugs compared to 2.3 drugs for those seen in a public clinic.

The most common package of drugs given for the acute bronchitis case in the private sector included antibiotics, analgesics, cough syrup and a short course of high dose steroids.

In the public sector, where cough syrup is not on the national essential drug list, public providers generally gave antibiotics, analgesics, anti-histamines and multi-vitamins.

High cost of medicines given, especially in the private sector

We calculated the cost of the medicines given for each consultation by the public and private providers, using the regulated medicine single exit prices (SEP) for both sectors.

The average cost of the medicine given by public clinics was R35.91 per consultation compared to R156.76 per consultation for patients seen by private GPs.

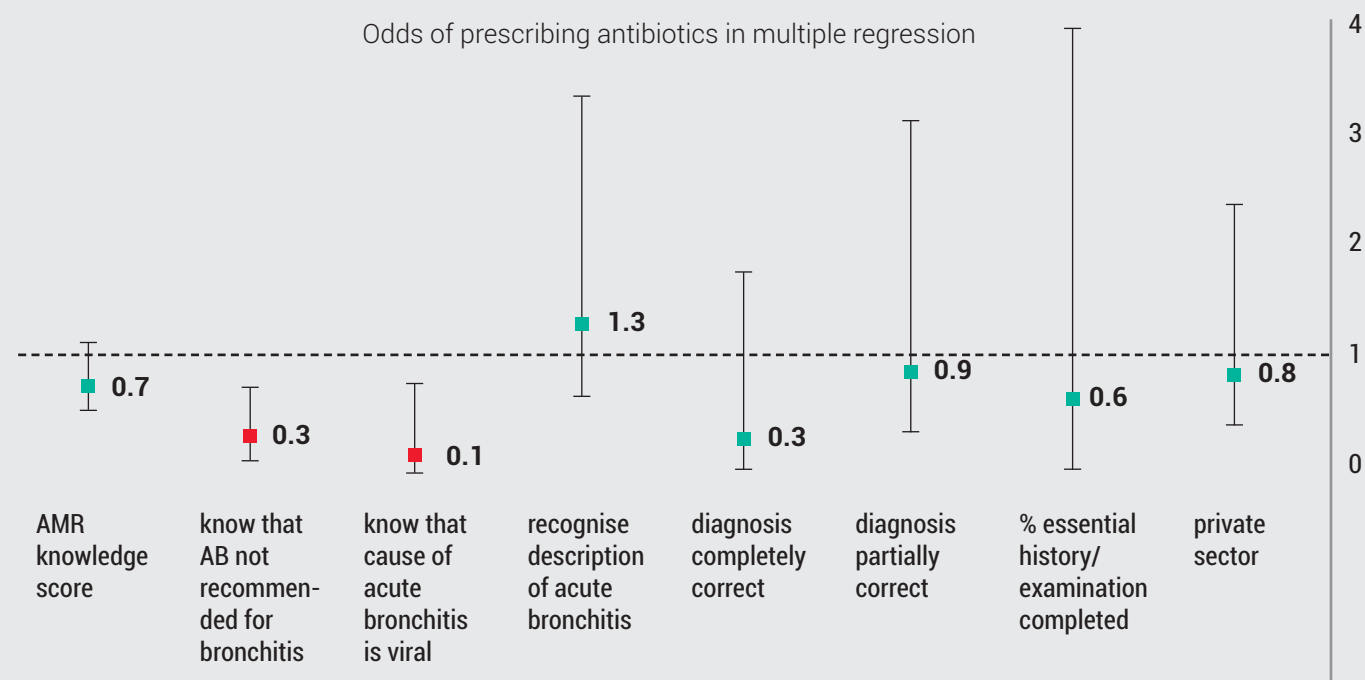
The correct management of our SP case would be symptomatic therapy only which should cost less than R15 per consultation at SEP prices.

Predictors of antibiotic prescribing

Using data from SP consultations and provider interviews we evaluated factors associated with antibiotic prescribing. The difference in between the public and private sectors was not significant when adjusted for other factors.

Being more thorough in the consultation and making the correct diagnosis did not significantly decrease unnecessary antibiotic prescribing. However, providers who knew that acute bronchitis was mostly viral were 10 times less likely to give antibiotics, while those who knew that national treatment guidelines did not recommend antibiotics for acute bronchitis were nearly 4 times less likely to give antibiotics.

Figure 2: Predictors of antibiotic prescribing



■ = statistically significant

WHAT ARE THE CONCLUSIONS OF THE STUDY?

Public and private primary care providers do not follow recognised evidence-based guidelines in managing an uncomplicated case of acute bronchitis.

The study suggests that a large proportion of patients with respiratory tract infections in South

Africa are likely to be receiving antibiotics even though these are mostly caused by viral infections and antibiotics are not clinically indicated. Providers need to be better informed that antibiotics are not required for the management of acute bronchitis.

The unnecessary antibiotic prescribing in primary care in South Africa has not been well documented before. These findings indicate that primary care providers require more attention in national antimicrobial resistance (AMR) strategies.