Tackling antimicrobial resistance through education

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Improving understanding of antimicrobial use can help curb inappropriate prescribing and consequently antimicrobial resistance. All levels of healthcare must join forces to combat this problem.

Antimicrobial stewardship is at the forefront of healthcare. With an ageing population, more patients are being treated for infections either in the community or hospital setting. The profile of antimicrobial stewardship and the awareness of prudent antimicrobial use which includes antibiotics has increased in the media, the public, undergraduate courses, as well as in secondary education. Resistance to antimicrobials increases the socio-economic burden and education in this area is of paramount importance.

In addition, the production of new antimicrobials has almost plateaued unlike the 20th century when there was an exponential rise in their production. It is imperative we use the currently available agents prudently before they become redundant.

Current evidence clearly demonstrates that the inappropriate use of antimicrobials and the use of broad spectrum antibiotics adds to the selection pressure for pathogens becoming resistant. This gives rise to resistant bacteria such as extended spectrum beta lactamase (ESBL) producing gram-negative bacteria as well as methicillin-resistant Staphylococcus aureus (MRSA). This in turn can cause alteration to the protective microbial flora of the body as well as increase hospital expenditure when treatment is initiated for resistant organisms. The government has recognised this as a significant health issue and has produced a number of publications including the UK Five Year Antimicrobial Resistance Strategy 2013 to 2018, which sets out actions to slow the development and spread of antimicrobial resistance.

Pharmacists play an important part in influencing antimicrobial prescribing. They have been identified as an underused resource and their value has been recognised and documented in a number of published documents as an integral part of antimicrobial stewardship delivery.

Stewardship programme

There are currently a series of activities that form part of the antimicrobial stewardship programme.

1. Assessment of the Trusts antimicrobial stewardship activities
2. An antimicrobial stewardship management team/committee
3. A ward-focused antimicrobial team is recommended
4. Evidence-based antimicrobial prescribing guidelines
5. Quality assurance measures/audits
6. Education and training.

Antimicrobial stewardship is everyone’s responsibility. The Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) recommends an antimicrobial education and training strategy is in place for all healthcare professionals.
care professionals involved in prescribing and administration of antimicrobials. The primary goal of antimicrobial stewardship is to optimise clinical outcomes while minimising unintended consequences of antimicrobial use. Education is an essential element of this strategy and will enhance and increase the acceptance rate of recommendations. Application of the knowledge can improve patient outcome, improve patient safety, decrease/limit the rate of resistance and decrease healthcare costs.

The antimicrobial team is available as an excellent resource for all healthcare professionals across primary and secondary care. However, many patients prescribed antimicrobials do not require specialist input or may not be seen by the antimicrobial team for a variety of reasons including referrals not being made.

Charts screened by pharmacists
Anecdotally approximately 90 per cent of inpatients charts are screened by pharmacists in secondary care. In the community all antimicrobial prescriptions are screened by a pharmacist when presented for dispensing. Hence, it makes sense to target this set of professionals to increase their knowledge in this area. The greater the number of people that take responsibility for prudent prescribing of these drugs, the more it will limit/decrease the rate of emerging resistant organisms. Limited resources mean it is impossible for the antimicrobial team to assess all prescriptions for antimicrobials.

Engaging pharmacists to be actively involved in recognising potential problems and escalate where necessary for further advice, or make an intervention, can only assist with this global problem.

Antibiotics are the most common class of antimicrobials prescribed and will be the main focus of the remainder of this article.

Many patients receive antibiotics in the community and approximately one-third of patients admitted to an acute care hospital receive antibiotics at some point during their stay. It is essential therefore that pharmacists have a good working knowledge of these drugs with regards to the types of infections they are used to treat as well as the spectrum of activity, choice of appropriate agent and therapeutic monitoring.

Summary
To increase the knowledge and confidence of pharmacists to challenge prescriptions in secondary care, antibiotic clinics such as snapshot teaching clinics can be a useful tool.

While formal teaching requires participants to be fully engaged from anywhere between 45–60 minutes, snapshot teaching involves smaller groups and allows for full engagement and concentration from participants with maximal learning potential.

During such sessions scenarios can be discussed in small groups where everyone can have a voice. Sessions are well received and feedback has stated that participants learn a lot in a short space of time, in a non-stressful environment. The knowledge and key learning points gained could be taken away and applied to their own practice. Participants said they felt more confident when interacting with the medical and surgical teams on the wards with regards to antibiotic prescribing and the suitability of agents for specific conditions.

Utilising this approach has been useful and benefits patients as well as prescribers. Short specific teaching sessions engage participants and gave the facilitator better feedback. Relaying a few key messages was better received than extended sessions. Sessions were easy to deliver and short enough for the facilitator to fit into the confines of a busy workday. This approach of incorporating teaching with practical examples allows pharmacists to be increasingly confident when screening and if necessary challenging prescriptions. They help increase the knowledge of pharmacists and empower them to challenge prescribers to improve prescribing.

Snapshot antibiotic teaching clinics provide continual education with the aid of real examples of prescriptions that pharmacists are faced with. Exposing pharmacists to prescriptions and discussing them in this way means that they begin to build a genuine sense of competence and confidence in this area.

Snapshot teaching is not limited to secondary care and can be adapted to a varying audience and applied to all platforms of healthcare. It can be delivered in person, via e-learning, lecture evenings, study symposiums and practical in-house training. This will help with antimicrobial stewardship which includes prudent prescribing practices.

Pharmacists in the community and hospital setting are well placed to make significant interventions. They have access to patients and are available to educate them on why antibiotics are not always beneficial. Educating community pharmacists and helping them recognise the signs and symptoms which require GP intervention will reduce GP visits and help streamline GP consultations.

Improving understanding of antimicrobial use can help curb inappropriate prescribing and consequently antimicrobial resistance. We need a collaborative multi-faceted approach from all levels of healthcare to combat this problem. Pharmacists have an increasingly important role to play in antimicrobial stewardship.

Further reading

Declaration of interests
None to declare.

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