Fighting antimicrobial resistance on all fronts

The theme of this year's World Antibiotic Awareness Week (Nov 13-19) is "seek advice". But what if your health professional's advice is not evidence-based? A trial in this month's issue aimed to reduce the shockingly high antibiotic prescribing rate among doctors providing outpatient care in China. In this setting in the rural west of the country, a staggering 80% of children aged between 2 and 14 years who are diagnosed with an upper respiratory tract infection (RTI) in an outpatient clinic receive a prescription for antibiotics. By contrast, the UK's National Institute for Health and Care Excellence (NICE) recommends a no-antibiotic or delayed-antibiotic prescribing strategy for all cases of RTI except those in which the child is systemically very unwell, showing symptoms or signs of a serious illness such as pneumonia, or has a pre-existing disorder that might increase the risk of complications. The reasons for overprescription in China are multiple, but include the need for hospitals to acquire revenue via drug sales, the demand from patients, and poor knowledge on the part of physicians. In line with evidence from studies in high-income countries, the authors attempted to tackle the latter two issues in one intervention.

Doctors in the township hospitals in the intervention group received a 2-hour interactive training session on the use of a bespoke clinical guideline (developed from NICE and Chinese guidelines) and coaching on how to explain the contents to patients, together with monthly peer-review meetings in which prescribing rates were reviewed. At the same time, materials for patients were developed, which included leaflets and a video that was played on a loop in the waiting room. This two-pronged approach halved paediatric antibiotic prescribing for upper RTIs in the intervention group, compared with a drop of only 7% in the control group, and represents a fine example of a practical approach to the first objective in WHO's Global Action Plan on Antimicrobial Resistance—ie, to improve awareness and understanding of antimicrobial resistance through effective communication, education, and training.

Progress on another of the Global Action Plan's strategic objectives—reducing the incidence of infection through effective sanitation, hygiene, and infection prevention measures—is referred to in a Comment by members of the Global Infection Prevention and Control Network. Compared with reducing antibiotic overuse in humans and animals (the latter being the subject of a new set of guidelines released by WHO this week), infection prevention and control is perhaps a neglected aspect of the fight against antimicrobial resistance. Yet reducing the upstream need for antibiotics is an obvious place to start when planning an antimicrobial resistance response. In their Comment, the Network issues a call to action on infection prevention and control for the next 5 years, emphasising the need for coordination, synergy, accountability, and communication.

Surveillance and research—a further Global Action Plan strategic objective—is brought to life in a Correspondence letter by Nguyen Van Kinh and colleagues. These authors describe Vietnam's efforts, supported by the UK Government's Fleming Fund, to act on the country's 2013 antimicrobial resistance action plan and establish a nationwide hospital surveillance network and reference laboratory at the National Hospital of Tropical Diseases in Hanoi.

Finally, this week also sees the third anniversary of the launch of the Longitude Prize—a £10 million challenge to develop an affordable, accurate, rapid, and easy-to-use diagnostic for bacterial infections. The ability to ascertain at the point of care whether or not a patient needs an antibiotic and, if so, whether or not the organism is resistant to any of them is a ridiculously obvious advantage. Yet new diagnostics seem to take the part of the neglected stepchild, perpetually in the shadow of new drugs. The news media regularly resounds to hope stories of new antibiotics, but—as a WHO report released in September made clear—the current antibiotic development pipeline is still dominated by entities that are merely modifications of existing drug classes and is thus "insufficient to mitigate the threat of antimicrobial resistance".

Raising awareness of the looming "antibiotic apocalypse" should include framing the solution as a continuum, from surveillance to infection prevention to diagnosis to treatment. Everyone—patients, researchers, health-care providers, farmers, veterinarians, journalists, and policy makers—must play their part in defeating these tiny but deadly foes. ■ *The Lancet Global Health*

For **World Antibiotic Awareness Week** see http://www.who.int/campaigns/world-antibiotic-awareness-week/en/

See **Articles** page e1258

For the **NICE guideline on prescribing antibiotics for respiratory tract infections** see https://www.nice.org.uk/guidance/CG69/chapter/1-guidance#the-clinical-effectiveness-and-cost-effectiveness-of-antibiotic-management-strategies-for

For the **Global Action Plan on Antimicrobial Resistance** see http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/

See **Comment** page e1178

For the **WHO guidelines on use of medically important antimicrobials in food-producing animals** see http://who.int/foodsafety/areas_work/antimicrobial-resistance/cia_guidelines/en/index.html

See **Correspondence** page e1186

For the **Longitude Prize** see https://longitudeprize.org/

For the **WHO report on antibacterial agents in clinical development** see http://apps.who.int/iris/bitstream/10665/258965/1/WHO-EMP-IAU-2017.11-eng.pdf?ua=1