Discussion points

- 'Three A's' made it easier to conclude antibiotics could be prescribed
- Differing voices and messages across healthcare could work against recovery
- Needs of the patient always the priority

Antimicrobial stewardship:

Did the pandemic set the profession back to square one?

David Westgarth
Editor, *BDJ in Practice*

Introduction

The phrase 'on easy street' is an idiom that some sources believe dates back to the 1700s. Of course, it is used to signify something in comfortable circumstances and done with relative ease.

I start out with this because many a moon ago, this was where I believe every healthcare profession I encountered used to live – an assessment made in hindsight with the value of accrued knowledge – purely based on how often I was prescribed antibiotics. While my parents would absolutely tell you I was a sponge for picking up ailments, it's a scenario that just wouldn't happen now. And then the pandemic arrived, and all of the groundwork done in the fight against antibiotic resistance, and the eventual move to anti-microbial stewardship, disappeared overnight.

Figures from the UK Health Security Agency revealed dentistry was the only part of the NHS in England which experienced an increase in antibiotics prescribed during the first year of the pandemic.[1] By that logic, you'd think we're right back to square one. Or are we? I asked Dr Anwen Cope Senior Clinical Lecturer and Honorary Consultant in Dental Public Health at Cardiff University, Dr Wendy Thompson from the College of General Dentistry and BDA Health and Science Committee spokesperson Dr Susie Sanderson just where dentistry and the fight against antibiotic prescribing is after the turbulence caused by the pandemic.

Cause for concern?

'Despite the events of the last two and a half years, antibiotic resistance remains a significant public health problem', Dr Cope said. 'Every antibiotic carries with it the potential for the emergence of resistant bacteria, whether it's given for coughs and colds, ear infections or dental problems. The risk is greatest in the month immediately following treatment but may last for up to a year. We know that there is evidence that antibiotic prescribing increased in dentistry during the pandemic and so, yes, there are concerns that dental prescribing could have contributed, and continue to contribute, to the emergence of resistant micro-organisms in our communities.'

'I actually think we have reasons to remain optimistic', Dr Thompson suggested. 'During the pandemic, we were where we were. But that's now in the past. We have reduced antibiotic prescribing before, and we can do it again.

'What does concern me is the underlying cause of why antibiotics were prescribed so much more, and that's access to dental procedures. The pandemic shone a light on this significant problem and did nothing to improve the situation. In cases of reduced access to face-to-face dentistry, antibiotic prescribing increased for cases of pain and infection. With reports of worsening access – and in some cases none whatsoever – I would expect to see antibiotic prescribing increasing for people with acute dental conditions – by GPs, pharmacists and in A&E as well as by dentists. For the sake of patient safety, that simply cannot happen.'

'There's no doubt that the pandemic has set us back, but it's also difficult to say where we would have been without it', Dr Sanderson added. 'We've been able to recover it before, and it's clear we can do it again.

'My main concern is the mixed message it gives to patients. Dentists and other healthcare professionals were backed into a corner. Pre-pandemic we'd worked hard to align messages with doctors and pharmacists – predominately that antibiotics aren't always the answer. Now we have a situation where the public has been hearing different messages. If, 24 months ago, a patient in pain attended an urgent dental centre (UDC), they may well already have been prescribed at least one course of antibiotics by their own dentist and would then receive further antibiotics at the UDC rather than the treatment they actually needed. As Wendy has stated in her research,[2] it's the 'revolving door' effect – patient comes in with pain, given antibiotics, and they'd have to come back in a few weeks with the same problem as it hadn't been addressed.

> 'What was universal however, was the need to prioritise patients with the most urgent conditions at a time when the number of patients that could be seen in a practice was greatly reduced'

'That creates expectations, even within the exceptional circumstances we faced. We almost have to say to patients 'forget everything we said, this is how we're going to treat you moving forward'. The principle of do it once, and do it well, simply wasn't something throughout the pandemic UDCs were able to do.'

Throughout the undoubted improvement in antibiotic prescribing in the years before the pandemic struck, the phrase 'antibiotics don't

cure toothache' is one that sticks in my memory. It seemed like an easy thing to base prescribing decisions upon, but wasn't that what happened throughout the pandemic? Not necessarily, according to Dr Thompson.

'In March 2020, the Office of the Chief Dental Officer England, issued national guidelines, encouraging a 'Triple A' approach – advice, analgesic, antibiotics, where appropriate. It was described as triage. Triage is the preliminary assessment of patients or casualties in order to determine the urgency of their need for treatment. Triage does not extend to provision of that treatment. Prescribing antibiotics is providing treatment. So AAA is remote management – calling AAA triage misses the point that prescribing antibiotics is a treatment – one which can, on occasions, have severe and life-threatening adverse outcomes for patients.

'Where the process fell down was access. We didn't have – but should have had – enough urgent access centres so patients could have had their problems treated. Our recent study shows that in some parts of the country, referrals to those urgent access centres were rejected unless patients had been given at least one course of antibiotics – irrespective of diagnosis – which is simply ridiculous. Antibiotics won't cure irreversible pulpitis, for example, but in some areas of the UK, that's what was happening. These hubs were set up to deliver the dental procedures required to get patients out of pain – but they don't seem to have had the capacity to do so. Dentists were frustrated, but it's the patients who suffered. And without the ability to do it right first time – that is providing a procedure rather than a prescription – this approach simply added further pressure onto an already creaking system.'

'Yes, I believe it was the case, and it was infuriating', Dr Sanderson replied. 'At the time I took calls when at Dental Protection from members who were concerned – understandably so – that the instructions given to them would result in prescribing antibiotics that simply weren't appropriate, but they had no other choice. As Wendy mentioned, some patients weren't even being accepted by a UDC before they'd had one or two courses of antibiotics, which made me very uncomfortable. There were regional variances – London had better UDC access than many areas of the country so it wasn't happening as much there – but it was happening far too often.'

Dr Cope also pointed to the regional discrepancies.

'The evidence we have is that, in most cases, operative interventions will provide rapid and effective relief for patients experiencing acute dental conditions. From March 2020 there was UK country-specific guidance for dental teams delivering patient care during COVID-19. As a result, there were differences as to whether dental practices provided face-to-face care, the types of treatment able to be provided in different settings, and the speed and nature of the restoration of services.

'What was universal however, was the need to prioritise patients with the most urgent conditions at a time when the number of patients that could be seen in a practice was greatly reduced. Together with the use of remote consultation to an extent that had never before been done in dental services, these factors likely contributed to the increase in antibiotic prescribing observed in dentistry during the two years following March 2020.'

But was this inevitable? Could these scenarios have been avoided?

> 'I think it's important now to reflect on what were the characteristics of systems that were more successful, because pandemic preparedness planning is an ongoing process'

'I think the picture that has emerged is that not only were there differences country-by-country as to how care was organised, there was also local variations in the interpretation of guidance and arrangements for urgent care' Dr Cope added. 'I suspect there are some areas that mobilised an urgent care model that were more effective at managing patients and perhaps these were associated with lower rates of antibiotic prescribing. I think it's important now to reflect on what were the characteristics of systems that were more successful, because pandemic preparedness planning is an ongoing process.'

Dr Thompson was more forthright in her assessment.

'Yes, it could have been avoided', she stated. 'As identified by the House of Commons Select Committee, adequate PPE was required by dental practices to maintain the safety of staff and patients during dental procedures, including aerosol-generating procedures. Without it, they couldn't open. Without being open, patients were given antibiotics for problems that would have been better treated with procedures.

'A report by the House of Commons Health Select Committee about the impact of the COVID-19 pandemic on NHS dental services also drew attention to the fact patients did not have the access they needed, creating a spiralling problem where antibiotics were being prescribed. The root of the problem wasn't addressed, and patients were returning at a later date with the same problem. To me, that seems avoidable.

'You also need to consider the very nature of dental pain and infection. These are non-communicable diseases (NCDs). The rate of NCDs was unaffected during the pandemic. By contrast, the rate of communicable diseases dropped. The world was trying its best to shield from a contagious disease – i.e. COVID-19. As a consequence, the rate of other respiratory tract infections also dropped significantly. Most antibiotics across the NHS are for respiratory tract infections, so it's no surprise that the amount of antibiotics prescribed across the NHS dropped. That was not the case with dentistry. Dentistry was the only part of the NHS to experience an increase in antibiotic prescribing during 2020. But NCDs, by their very nature, remained – and in the absence of routine, preventative dentistry, progressed from caries, for example, to conditions causing pain and/or infection. So poor access to routine dentistry also results in increased antibiotic prescribing by dentists, GPs, pharmacists and A&E staff for people with acute dental conditions. It was far from ideal.'

Dr Sanderson pointed to a potential lack of foresight, and the implications it has.

'We were told that there had been pandemic planning, and I struggle to believe the prescribing of antibiotics was not a topic discussed in great detail. Are we in a better place? Have we learned from the pandemic? You would hope so.

'I think we've been swayed into forgetting how scary the early days of the pandemic really were. We knew very little about COVID-19, how it was spread and the implications for dentistry. There wasn't much logic to anything, and dentistry sort of faded into the background. I was astonished at how many doctors and nurses worked without the correct PPE, and its availability hampered the efforts of the profession to get as many UDCs set up as possible. We also had a situation where some instructions to practices on how to manage their patients and premises were difficult to assimilate. The general feeling of anxiety and lack of preparation meant all the difficulties couldn't have been avoided, and we need to be better prepared when we face a similar situation

again. Dental practices will now certainly understand what's needed but the infrastructure needs to be in place to support them.'

A permanent change?

I recall having an informal conversation with the head of one of the largest dental corporates in 2020, where this individual said technological advances that may have taken four or five years to develop, let alone implement, had to be done in a matter of weeks simply for dentistry to survive. And survive it did, although many are still feeling the ripple effects of the pandemic today. What it has done is precipitate a change from many organisations, including the introduction of a hybrid approach. Dentistry is no different, but are there concerns antibiotics could be prescribed more frequently to help clear in-practice backlogs?

'Yes, the pandemic has been used as a tool to move towards a hybrid approach in more than just healthcare, but it's the associated potential change in attitude that concerns me', Dr Sanderson explained. 'Every healthcare sector is still in recovery mode to some extent, and I would hate to think some are saying they're too busy to see patients and prescribing antibiotics as a result. However, with the right training, awareness of effective antibiotic stewardship and audits in place, it is probably the only way forward. Dentistry has, after all, been utilising a skill mix model for some time. That's correct in my view but, in medical practice, the skill mix model means that clinicians other than doctors can prescribe antibiotics. Consequently, the aetiology of dental pain needs to be properly understood by all.

'I do have concerns that patients who find it difficult to get a toothache appointment with a dentist are having to look elsewhere for pain relief. If, for example, a patient visits a pharmacy, is a pharmacist with prescribing rights going to feel able to resist intense pressure of a demand for inappropriate antibiotics? I see the role of pharmacists and other healthcare providers as a gateway to referrals; they should be saying 'you really need to visit a dentist'. If that doesn't happen, we'll see regression. It comes back to my earlier point about mixed messages and all areas of healthcare getting back on the same page.'

Dr Thompson added: 'I think, like in most areas of dentistry, there are going to be variations. There are too many reports of antibiotics being prescribed without the patient being seen in practice to alleviate long waiting lists and backlogs. Likewise, there are plenty of reports of practices finding ways to strike the right balance. In my practice, patients presenting with pain are our priority ahead of routine appointments. It's our approach that we make time for these patients, and we've found that most – not all – patients who we ask to reschedule are understanding of the reasons. It is challenging, and does impact on our ability to deliver our contracted UDAs. Until the access problem I have highlighted is addressed, I don't see how the situation will improve.'

With this in mind, I wondered if dentistry really was back to square one with anti-microbial stewardship, and if so to what extent, and if not, why?

> 'With the problems dentistry faces, more and more patients are turning to their GP, pharmacists, and A&E to source antibiotics for dental pain and infection'

'I think it depends on which marker you use', Dr Thompson suggested. 'A downward trend in dental antibiotic use since 2012 has been reported in England, for example. Access may have been better then than it is now, so it's not a fair and direct comparison

'If we use just before COVID-19 swept the globe as 'square one', there was still not enough capacity to treat all patients seeking routine dental care within the NHS, but progress was being made. A Canadian study of managing people with dental pain and infection during COVID-19 concluded that teledentistry did not replace definitive in person dental treatment. Dentistry finds itself in a unique space within primary care services – the user needs to be seen by a dentist for a thorough assessment and treatment of their acute dental condition. Dentists are skilled and equipped to do this during urgent dental appointments – there are few times antibiotics are necessary (according to current guidelines) and even fewer indications for antibiotic-only treatment plans.

'I recently read a report on the effectiveness of teledentistry during COVID-19 in Fiji. Their conclusions were wholly positive as their measures were focused solely on dispensing oral hygiene instruction rather than treating patients. With the support of the wider dental team, I expect delivering oral health advice remotely to patients requiring a routine check-up could be beneficial. However, teledentistry will never substitute for physically checking a patient's mouth for oral and dental diseases.

'I'd also go back to access. With the problems dentistry faces, more and more patients are turning to their GP, pharmacists, and A&E to source antibiotics for dental pain and infection. Yet none of these are in a position to diagnose let alone treat dental conditions. Non-dental healthcare professionals are advised to direct patients to a dentist and only provide antibiotics if there is a severe swelling. But we know that many of them think they are helping patients by giving antibiotics which they assume will be of some benefit. I have even heard tell that they were doing their dental colleagues a favour by doing so, which only serves to highlight their lack of knowledge.'

'After several years in which we observed a reduction in antibiotic prescribing in general dental services, there was a dramatic increase in the early months of the pandemic', Dr Cope added. 'Now we're two and a half years down the line, but there are still huge, daily pressures within NHS dental care. We know that inappropriate antibiotic dental prescribing is strongly linked to clinical time and workload pressures. Until there are NHS general dental services contracts in England and Wales that adequately remunerate dental practices for the provision of effective, timely care for urgent dental conditions – i.e. operative interventions – systems which prioritise the care of those with the greatest need and greater consideration given to the prevention of dental disease, inside and outside the dental surgery, antimicrobial stewardship will be an uphill struggle.'

'I don't think we're back to square one', Dr Sanderson explained. 'We have catching up to do, of that there is no doubt, but that can be done – and accelerated – with the help and input of all stakeholders. Take the GDC and the CQC, for example. They have to regulate in a pragmatic way, encouraging clinicians to be responsible but trusting them to make the correct decision by and for their patients. Take the negotiations around contract reform Anwen mentions, for example. The Dental Care Commissioning Standards state that 15 minutes is long enough for an urgent care appointment. That is simply not the case. We have been pushing for that to be increased, so we can treat the patient once and do a thorough job. With the current 15-minute window, that's just not enough time to do that, and it creates the rotating door issue, where you can guarantee we'll see that patient again in a few weeks' time. It has to be changed. Then we can begin to catch up in a safe and constructive manner that benefits the patients we're there to treat.'

Carelessness and responsibilities

Perhaps it was symbolic of the political chaos in the UK that now-former Health and Social Care Secretary, Thérèse Coffey, provoked despair and disbelief among medical professionals after she admitted to sharing prescription medicines with others. One doctor went as far as to say it was 'monumental stupidity' for Coffey to hand out antibiotics to others, and I asked what the implications for such carelessness might have for the profession and the wider medical community.

Dr Cope said: 'Sharing prescription-only medicines carries with it significant risks – adverse drug reactions or interactions, complications in clinical diagnosis, and delays in consultation – as well as the potential contribution to antimicrobial resistance. As healthcare professionals and policy makers we need to understand the reasons for this and persuade, or otherwise discourage, patients from doing this because of the risks to both their own wellbeing and wider public health.

> 'We need to develop effective ways of communicating with patients and the public that antibiotics are not an effective long-term solution for dental problems.'

'Providing systems by which unused medicines can be easily and safely disposed of, prescribing only when necessarily and only enough medicine for the immediate clinical need, may be some of the ways to reduce the 'antibiotic reservoir' that can accumulate in patients' medicine cabinets.'

Dr Thompson added: 'Clearly it was careless of the Secretary of State, but it provided an opportunity to educate. You only need to look at the reaction in the medical community to know this was ill-judged.'

Dr Sanderson agreed, saying: 'You're absolutely right, Wendy. As much as there was a feeling of despair, I think it was a wider symptom of the attitude of the public towards antibiotics. You would have assumed the Health and Social Care Secretary would have known not to say such things, and it's a stark reminder of how much educating there is to do.

'It also raised a discussion that has been going on for some time about finishing courses of antibiotics. Studies show that dental infections rarely need antibiotics for longer than three days if the source of the infection is adequately addressed. Dental guidelines have long advised, therefore, that patients should be reviewed after 2-3 days and if the infection has resolved then the patient should be instructed to stop taking the antibiotics and return any unused medication to the pharmacy for safe destruction. Taking antibiotics for longer than necessary is associated with increased incidence of adverse outcomes such as antibiotic-related (C.diff) colitis.'

With World Antimicrobial Awareness Week, taking place between 18-24 November, 2022, coming into view, and the sound of education rattling around my head, I wondered where the responsibility lies for improving anti-microbial stewardship and the dangers posed by antibiotic resistance – particularly in light of Coffey's carelessness.

"Preventing Antimicrobial Resistance Together' is the theme of this years' World Antimicrobial Awareness Week and the same is true of antimicrobial stewardship in dentistry', Dr Cope said.

'There is no single organisation or professional group that is solely responsible for antimicrobial stewardship, this is something we all have to take responsibility for. Action is needed at all levels. There needs to be policy that focuses on the prevention of oral disease and contracting models which fairly remunerate dental practices for providing care to high-need patients and offering operative interventions for urgent dental problems. We need to develop effective ways of communicating with patients and the public that antibiotics are not an effective long-term solution for dental problems.

'Finally, dental practices and urgent dental care providers need to consider antimicrobial stewardship as part of their quality and safety systems, evaluating whether they allow sufficient time for the effective management of patients presenting with acute conditions and auditing their antimicrobial use.'

'As Anwen rightly says, it is everybody's responsibility', Dr Thompson said. 'From international organisations like the World Health Organisation right through to dental reception teams, and from NHS commissioners to politicians, we all need to be aware of the risks posed by the unnecessary and inappropriate prescribing of antibiotics.

'Access to dentistry is key to optimising the use of antibiotics by dental teams and providing safe care for people with toothache who present in other parts of the NHS. In 2021 I wrote an editorial suggesting the government needs to provide clarity for the public and the profession about what services it is willing and able to pay for – that is even more true right now.[3] In terms of the role of the dental team in tackling antibiotic resistance, there are three pillars on which we need to focus: raising awareness, preventing infections and stewardship – that is using antibiotics only when necessary and appropriate. Ultimately if we prevent infection – and dentistry is, and should be, about prevention – then there will be less need to prescribe antibiotics to address resulting problems.'

Dr Sanderson pointed to another global crisis with similarities to the threat posed by AMR.

'I see this in the same vein as climate change', she said. 'It's a 'we', an everyone problem. It has been described as a slow-motion pandemic and a ticking timebomb, and it is a global threat that keeps trundling on.

'There has to be leadership, and strong leadership at that. It has to be at all levels, too – local, national governments, international bodies. For dentistry, it's also about individual responsibility. As a profession we have made great strides, and we can do it again.'

Dr Sanderson's last point, that the profession can do it again, is pertinent. There are always questions about the motivation of the workforce, especially in light of working conditions within the NHS, but it is reassuring to know this is one area the profession is united in improving, for the fight against AMR and the need for AMS requires the abolition of easy street. Lives depend on it.

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