

<b>Institution:</b> University of Sunderland		
<b>Unit of Assessment:</b> 3 Allied Health Professions, Dentistry, Nursing and Pharmacy		
<b>Title of case study:</b> An intervention that gives 529,000 people free and simple access to oral health guidance		
<b>Period when the underpinning research was undertaken:</b> 2016-2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Andrew Sturrock	Principal Lecturer	2015-present
Catherine Hayes	Professor of Health Professions, Pedagogy and Scholarship	1999-present
Scott Wilkes	Professor of General Practice and Primary Care	2013-present
<b>Period when the claimed impact occurred:</b> 2016-December 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> N		
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p>Oral health treatment costs NHS England approximately £3.4 billion per year (of which 9.1% is urgent care) and yet 39% of the UK population does not attend a dentist. To improve oral health in this disengaged population, researchers at Sunderland developed an intervention that can be delivered by pharmacists. This intervention has significantly improved knowledge and practice in over 1,000 people; is one of the required criteria for all 109 Healthy Living Pharmacies in County Durham; and is incorporated into Health Education England North East's CPD provision and Sunderland's MPharm programme, with over 300 pharmacy staff and 300 trainee pharmacists already trained. The research has given approximately 529,000 people free and simple access to oral health guidance. The success of this project provides critical evidence of the benefits of interprofessional collaboration in healthcare.</p>		
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>When oral health is a significant problem and over a third of the population does not attend a dentist, there is an opportunity to explore whether this can be addressed by delivering oral health interventions in places that they do attend. Andrew Sturrock and colleagues at the University of Sunderland conducted research that investigates role that pharmacists could play in addressing the lack of advice and resulting oral health problems.</p> <p>Sturrock (in collaboration with the Durham County Council Public Health Team, County Durham and Darlington Local Pharmaceutical Committee, and County Durham and Darlington Foundation Trust) designed and trialled a pharmacy-based oral health intervention [R1]. Its main purpose was to establish whether community pharmacies could play a role in tackling the problem of oral health, an issue compounded by disengagement from dental services. This research found that pharmacists were able to reach patients with a poor history of accessing dental services and produce positive intentions to change oral hygiene behaviours in a large number of patients.</p> <p>A team from Sunderland (in collaboration with the National University of Singapore) then utilised interpretive qualitative methods to interview a wide range of primary care health professionals (pharmacists, doctors, nurses, practice managers) and patients. This study provided evidence of a lack of integration between oral and general healthcare services and the isolation of dental teams from other professional groups, both of which potentially impact negatively on patient care. It also identified an opportunity to improve oral and general</p>		

healthcare through the developing role of clinical pharmacists working in general practice [R2].

The same group adopted a grounded theory approach to interview pharmacists and doctors [R3] and dentists [R4]. This study explored the interprofessional prevention of medication-related osteonecrosis of the jaw (MRONJ), a rare yet significant adverse effect of some prescribed medications. This research identified that patient safety continues to be compromised due to limited awareness of the condition and preventive interventions and lack of integration between oral and general health services.

They then adopted a grounded theory approach to interview a wide range of patients, including those with a diagnosis of MRONJ [R5]. This study highlighted the significant detrimental impact that MRONJ can have on a patient's quality of life, despite poor awareness of the condition amongst those who prescribed implicated medications. This provided evidence to support the recommendations in guidelines published by the Scottish Dental Clinical Effectiveness Programme for the prioritisation of preventive measures and closer interprofessional working. A key finding related to the barriers for patients accessing dental services, with the pharmacist providing significant opportunities for reinforcement of information and the provision of advice to patients on the adverse effects of newly prescribed medications.

This research has led to an NIHR ARC grant of £48,155 awarded to Sturrock to explore the role of community pharmacists in delivering opportunistic head and neck cancer screening for at-risk patients.

### 3. References to the research (indicative maximum of six references)

**R1** Sturrock A, Cussons H, Jones C, Woodcock C, Bird L. Oral health promotion in the community pharmacy: An evaluation of a pilot oral health promotion intervention. *British Dental Journal* 2017;223. doi:10.1038/sj.bdj.2017.784

**R2** Sturrock, A, Preshaw, PM, Hayes, C and Wilkes, S (2020) 'We do not seem to engage with dentists': a qualitative study of primary healthcare staff and patients in the North East of England on the role of pharmacists in oral healthcare. *BMJ Open*, 10 (2). e032261.

**R3** Sturrock A, Preshaw P, Hayes C, Wilkes S. Attitudes and perceptions of GPs and community pharmacists towards their role in the prevention of bisphosphonate-related osteonecrosis of the jaw: a qualitative study in the North East of England. *BMJ Open* 2017;7:e016047. doi:10.1136/bmjopen-2017-016047

**R4** Sturrock A, Preshaw PM, Hayes C, Wilkes S. General dental practitioners' perceptions of, and attitudes towards, improving patient safety through a multidisciplinary approach to the prevention of medication-related osteonecrosis of the jaw (MRONJ): a qualitative study in the North East of England. *BMJ Open* 2019;9:e029951. doi:10.1136/bmjopen-2019-029951.

**R5** Sturrock A, Preshaw PM, Hayes C, Wilkes S. Perceptions and attitudes of patients towards medication-related osteonecrosis of the jaw (MRONJ): a qualitative study in England *BMJ Open* 2019;9:e024376. doi:10.1136/bmjopen-2018-024376.

### Quality indicators

All journal articles were peer-reviewed. **R1** was published in a Q2 journal and received a favourable review in the issue by the editor. **R2-5** were published in a Q1 journal.

**R5** was funded by the UK Clinical Pharmacy Association and Pharmacy Research UK. PI: Sturrock, Jan-Dec 2017, £20,000.

### 4. Details of the impact (indicative maximum 750 words)

This research underpinned the creation, piloting and evaluation of a **pharmacy-based oral health intervention** and an **educational intervention** to support the development of pharmacists' roles in the interprofessional management and integration of oral and general health. The health intervention, piloted in late 2016, was offered to adults in receipt of free prescriptions, and consisted of a short demonstration of how teeth should be cleaned, after which patients received supporting information and advice from the Oral Health Foundation,

details of local dental providers, and a bag containing a toothbrush, toothpaste and an information leaflet. Five Healthy Living Pharmacies (HLPs) in deprived County Durham communities took part in the pilot. Each pharmacy was asked to deliver the intervention to at least 200 patients; in total, 1,069 patients participated.

The focus of the impact is on the North East because poor oral health is particularly acute in the region; in Sunderland 28.4% of the population have at least one incidence of decay, tooth loss or filling, and in Middlesbrough this rises to 32.1% (national average: 23.3%) [S1]. It has since been extended into other areas.

### **Impact on patients**

Evaluation of the pilot indicated a clear improvement in patient knowledge and intended behaviour, with **72% of the 1,069 patients who took part saying that their knowledge about oral health was now “much better”**. One pharmacist reported that *“a lot of people [...] actually didn’t know how to do their teeth,”* and another said that *“people who thought because they had no teeth anymore, they didn’t have to go back to the dentist.”* In addition, **66% said they would definitely change the way they look after their teeth**. The majority (64%) of patients also agreed that the pharmacy is the right place to receive advice about their teeth [S2]. Crucially, the intervention reached patients who stand to benefit most; all patients were from deprived communities where at least one incidence of decay, tooth loss or filling ( $d_3mft > 0$ ) exceeds the national average. Given the relationship between poor oral health and long-term conditions such as cardiovascular disease and diabetes, the population of patients intending to change how they care for their teeth can be expected to show an associated improvement in general health.

Behind these statistics lies a more fundamental change: **patients have had a positive experience with oral healthcare**. The intervention, using short and spontaneous conversations about how to care for their teeth, reengaged patients in oral healthcare and **improves patient trust in healthcare professionals** – important for managing dental anxiety, a major barrier to using dental services. Promisingly, **73% of patients said they wanted details of local dental practices**, information that was provided by the pharmacy team.

### **Impact on practice**

Staff at the participating HLPs completed training to enable them to provide the recommended advice specified by Public Health England in the *Delivering better oral health* toolkit. Qualitative interviews with these staff showed **that their knowledge had improved** after receiving the training; for example, *“One of the things I didn’t realise until I came back was the amount of toothpastes on the market that don’t actually have any fluoride in”* [S2]. Other staff have identified how **the training augments their professional practice**, saying that it helped them to consider how medications may be related to oral health problems, and that they would keep sugar-free medication in mind [S3].

The pilot’s success confirmed that the concept could be replicated more widely. **Health Education England covering North East and North Cumbria (HEENE) now offer pharmacy team training in oral health as accredited CPD** as continuing support following the pilot. **Since 2018 346 pharmacy staff from North Tyneside, Newcastle, Northumberland, South of Tyne, Teesside, County Durham and Carlisle have completed it**. HEENE’s Clinical Lead says *“Pharmacy curricula do not typically incorporate oral health training, and this in-service training addresses that gap”* [S4]. In response, since 2018/19 the University of Sunderland has integrated this training into its MPharm programme. Through this route, **approximately 300 training pharmacists have benefited from this enhanced capacity**. Alongside face-to-face training, since 2019 HEENE has delivered oral health training as e-learning modules as well as face to face events to include specialists topic, for example oral cancer [S4]. The unit’s research thus contributes to the development of both the existing and future workforce.

**Impact on health policy**

The success of the pilot **resulted in a change in health policy at Durham County Council**. In 2018-19 oral health became a local target for all 109 HLPs in the county, meaning that pharmacies must actively support their patients' oral health to maintain their HLP status [S5]. Patients do not need to attend the dentist for guidance about oral health, but can access it in a setting they already visit, at a time convenient to them, for free. Since there is one pharmacy for every 4,850 people in England, **staff in these pharmacies can prompt as many as 529,000 patients to follow signposting to dental services** and take action to prevent the occurrence or worsening of oral health problems, thus also protecting their general health. The British Dental Journal's editor agrees, saying that the intervention *"highlights how interdisciplinary collaboration can be of great potential benefit to society in general and dental patients, actual and potential, in particular"* [S6].

**5. Sources to corroborate the impact** (indicative maximum of ten references)

**S1** Public Health England. 2018. Results of 5 year old oral health survey 2017. Electronic dataset. UK Government.

**S2** Final Report: Oral health promotion in a community Pharmacy: An evaluation of a pilot oral health promotion intervention

**S3** Training evaluation, Health Education England, Directorate of Multi-disciplinary Dental Education

**S4** Statement of support from Clinical lead for multi-disciplinary oral health, Health Education England covering North East and North Cumbria

**S5** Durham County Council Oral Health Strategy Update, October 2019

**S6** Review of Oral health promotion in the community pharmacy: an evaluation of a pilot oral health promotion intervention, Stephen Hancocks, *British Dental Journal* 2017, 223