Dental Therapy Update

Issue 4 2020
Volume 13 Number 4

Official Journal of BADT

BRITISH ASSOCIATION
OF DENTAL THERAPISTS

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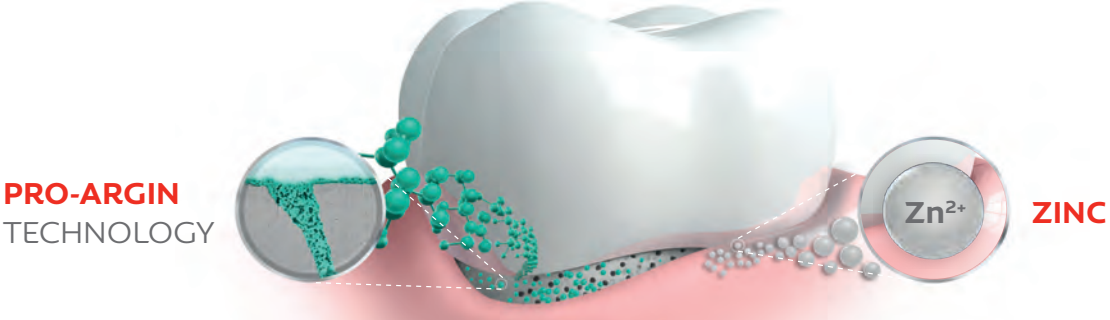

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* For instant sensitivity pain relief, apply the toothpaste directly with a finger tip to each sensitive tooth for a minute | # Compared to a standard fluoride toothpaste
1 Nathoo S, et al. 2009. **2** Docimo R, et al. 2009. **3** Lai HY, et al. 2015.

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Contents
Issue 4 2020

Vol 13 No 4

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Editorial Director
FJ Trevor Burke
Professor of Dental Primary Care, University of Birmingham School of Dentistry

Editor in Chief
Eddie Mackenzie
✉ eddie.mackenzie@markallengroup.com

Editorial Assistant
Ellen Cummings
✉ ellen.cummings@markallengroup.com

Managing Director
Stuart Thompson
✉ stuart.thompson@markallengroup.com

Designer
Georgia Critoph-Evans
✉ georgia.critoph-evans@markallengroup.com

Advisers to Dental Therapy Update
Debbie McGovern
President BADT
✉ debmcgovernbadtcouncil@gmail.com

MARK ALLEN GROUP
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Roll on 2021!

Winter is here and Christmas is approaching fast. I think 2020 is a year we all want to put behind us as soon as possible.

For many of our members it's been an incredibly stressful time and I think many have struggled both mentally and physically. If anyone needs to talk, remember that many mental health charities are available to support you and your family. That extends to our members – all of us on the council are your friends and colleagues, so please feel to reach out to us.

I am enjoying being back at work, although I am acutely aware that so many of you are still not back at work – if anyone needs advice, please don't hesitate to call the BADT helpline. Over the past few months we have managed to help so many of our members with pay issues and this is still ongoing. Even today as I write this comment, I have been helping a member who has taken the brave step to go to court to fight for her pay. She has had mediation and has been successful in reaching an agreement with her former employer. Well done to her for having the strength to do this.

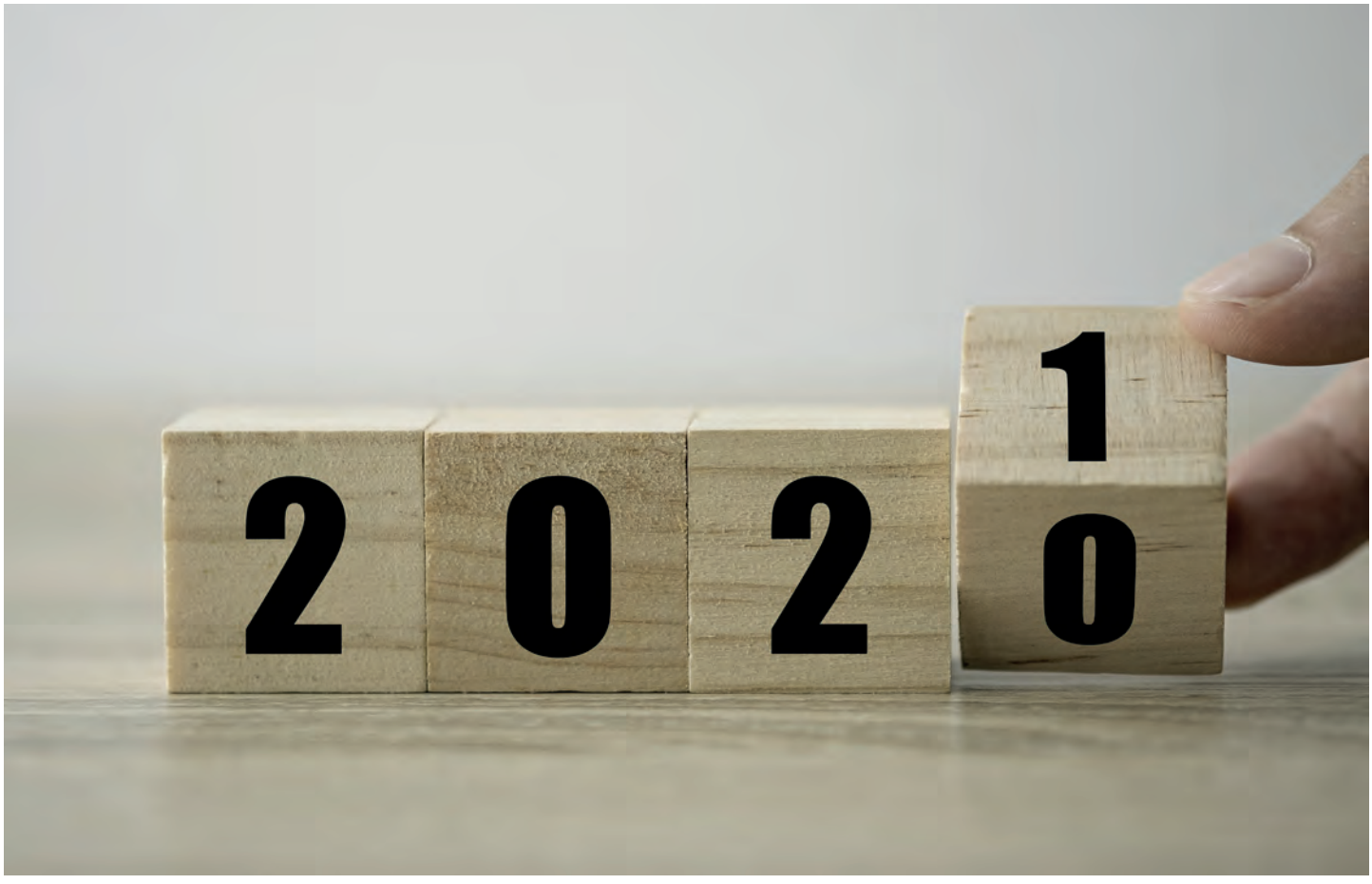
I firmly believe that BADT's strength is that it is made up of dental therapists working in the real world who have the experience to be able to help you and not just represent you.

The BADT virtual conference was a huge success. Being able to attend a conference while on the other side of the world is now reality. The speakers were outstanding and I'm sure we will be having many similar events in the future. After the success and record number of attendees at any conference, it shows how easy it is to reconnect and reach people in their own homes or even while on holiday. For me, I dearly miss the face-to-face contact with the hugs and warm, friendly faces of our members. Maybe soon we can all get together and this will be a distant memory or nightmare.

Campaigning

The BADT and BSDHT have been working on the NHS England project to change the Human Medicines Regulations 2012 to include the use by dental hygienists and therapists of a mechanism called exemptions. Being able to use the exemptions mechanism will mean that we will be able to treat our patients without the inconvenience to the patients of having to wait for the dentist to pop in to our surgery.

The office of the chief dental officer (OCDO) has been approachable to us and on hand to help with any enquiries we have had. BADT has attended every Advancing Dental Care (ADC), CDO, CQC and GDC meeting, so our commitment is



ongoing and still as important as ever.

The newest addition to our stakeholder engagement is Diversity in Dentistry Action Group (DDAG). This has been set up by Sara Hurley to promote a collaborative approach to shaping a dental profession which respects and values diversity. The group aims to co-create a systematic approach for practical action, by working across all stakeholders and professional representative bodies to ensure operational processes, ways of working and people management policies are scrutinised and improved. I have been invited to attend the first DDAG stakeholder engagement event in November. It aimed at stimulating a dialogue within the profession around these issues. I am looking forward to representing the BADT at this meeting.

BADT has also put a proposal to the team of the OCDO in regards to the new contract and offered our advice and ideas as to how we think prevention and direct access may be more beneficial to practices and patients.

I recently attended a Westminster Forum event on behalf of BADT and it was heavily dominated with how covid has changed dentistry in all settings. Covid is the main reason for pushing dentistry reform and change of the contract, as well as looking at a new way of working and dentistry being forced into a prevention-based team approach. This is always music to my ears!

I was also pleased to see the Steele review 2009 mentioned a number of times and the possibility of the new impending contract being very much team-based.

Committee

Finally, I would like to thank the team at BADT – all our council members, executive council and administration team. Dave Martin, who is a past BADT chair, has been appointed as the international liaison for BADT. He will distribute news from overseas to our members via our journal, and build communications with the other dental therapy organisations across the world. The International Oral Health Association (IOHA), which I am on the executive committee for, is looking to try and standardise training in all countries. The work of looking at different scopes is still ongoing. We look forward to welcoming the IOHA committee to our international conference next year.

The BADT executive committee will be meeting very soon to discuss next year's conference. Bearing in mind Covid-19 and its restrictions, we will be doing whatever it takes to ensure we can all get together safely somehow next year.

Until then, I wish you all a lovely Christmas with your loved ones. Stay safe and please tune in to some BADT fun on Facebook and Instagram over the Christmas holidays.

International liaison appointed

Council member Dave Martin has been appointed as our international liaison. Dave has a long history of international relations within BADT, having been part of the visit to Malaysia in 2013. Dave will be in regular contact with all the other dental therapy organisations worldwide and will strengthen both our relationships with them and our profile in the international community.

Exemptions

The public consultation for the exemptions project is open until December 10, please encourage as many people as possible to complete the survey – the link is on the BADT website.

Virtual conference

We held our first virtual conference on Saturday, September 26, the day that we should have been in Crewe celebrating and learning in person. We had a variety of speakers and a wide range of topics which proved to be very popular with those of you that joined us. We had a good turnout, so thank you very much for spending your Saturday with us. Thank you also to all the speakers that gave up their time so willingly to support us that day.

Susan Wingrove joins BADT series

Internationally famous dental hygienist Susan Wingrove joined our chair Debbie Hemington in latest of our series of (P)Beer Reviews. Susan talked about her well-developed protocols for implant maintenance and provided some useful and innovative tips. We are looking forward to welcoming Susan to the UK next year to present her implant care workshop exclusively for BADT.

BSPD membership open to dental therapists

The British Society of Paediatric Dentistry has always had an open door policy on membership. No matter what you do or who you are, if you care about children's oral health, you are welcome as a member.

The categories of membership and subscriptions have recently changed. Full membership is now available to all UK GDC registered members of the dental team, and overseas registrants currently working/training in the UK.

Meanwhile, associate membership is open to any non GDC registrant. The other significant change is to pricing, which is now more closely aligned with income and consequently much fairer.

The bands are as follows:

- £90 for full and associate members earning over £45,000 PA
- £63 for full and associate members earning between £30,616-£45,000 (PA)
- £25 for full and associate members earning less than £30,615 PA
- £25 for retired members

The new subscriptions and categories change as of January 1, 2021. BSPD will not be asking members to provide evidence of their annual earnings and we will rely on members' correctly selecting their own individual subscription band.

Dental therapists are warmly welcomed as members of BSPD. You have traditionally worked closely together with specialists in paediatric dentistry in both hospital and community settings. A dental therapist has already chaired a BSPD branch and Joanne Bowles, editor of this publication, will be the first dental therapist to chair a branch under the new membership rules. She is currently chair-elect of the Merseyside branch.

The main benefits of BSPD are the journal, the International Journal of Paediatric Dentistry, discounted access to the annual scientific conference and the opportunity to enter some of our prizes, including the Outstanding Innovation Award.

Joining BSPD also means supporting our work. We continue to develop resources for the profession and for patients and we lead, with the support of Sara Hurley, CDO for England, on the Dental Check by One campaign, the campaign to encourage parents to bring their babies to a dental practice by the age of one. You can read more here https://dentalcheckbyone.co.uk If you want to know how to carry out an examination of a very young child in a safe way, involving the parent or guardian, read the FAQ called "How will the dentist examine my child: **https://dentalcheckbyone.co.uk/patients/faqs/**

In 2020 we were proud to work with Dr Ranj, the BAFTA Award-Winning TV presenter, in order to make some accessible mini videos for families. These can now be found on the children's page of the website: www.bspd.co.uk/kidsvids

BSPD is proud that all its colleagues have equal standing within the ranks of the society. It is also proud to support the important work of dental therapists and help widen the public's understanding of your role and contribution.

To join BSPD, visit **www.bspd.co.uk/Membership**

BADT 2020 Review

If we look back on 2020 and consider what has happened within BADT, a huge amount has gone on in a very different and difficult year.

January

- BADT appoints a new administration, led by Suzy Rowlands.

February

- Meeting with the GDC about overseas dentists registering as dental therapists and hygienists without any practical assessment. BSDHT joined us.

March

- BADT emergency executive council meeting announced.
- Emergency action plan put forward.
- Invitation to all DCP associations and societies to contact the GDC on behalf of their members for support and freeze/reduction/ waiver of ARF.
- BADT president's daily live session commenced.
- Freeze of BADT membership fees announced for active and new members.
- BADT 24-hour hotline, manned by president Debbie McGovern, introduced.

April

- Chair's weekly newsletter introduced.
- The Great BADT Bake Off.
- BADT bingo.
- Collaboration with the British Academy of Private Dentistry.
- Dent-O-Care Great Oral Health Giveback webinars.

May

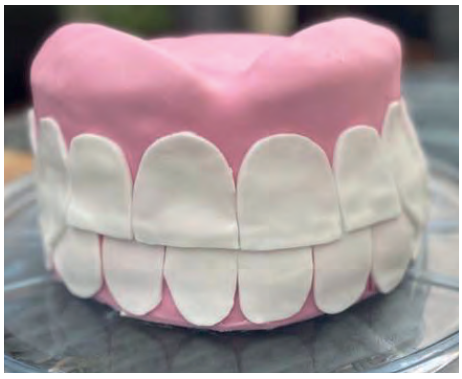
- BADT Oops Upside Your Head challenge.
- Ask the Four Nations live session with representation from Wales, England, Scotland and Northern Ireland.
- BADT education series announced featuring Ian Dunn, Fiona Sandom, Jo Dickinson and Jocelyn Harding, supported by Acteon UK.
- BADT student statement released and student support session.
- Virtual coffee mornings and evening socials announced.

June

- BADT and *Registered Dental Hygienist Magazine* (America) joined forces to provide members with access to more journals from America.
- BADT E-Conference 2020 announced – free to all members.
- Employment law live session with Jane Campbell.
- James Goolnik live session on Kick Sugar.
- Return to work for dentistry announced.

July

- BADT/BDA joint pay statement.
- Response from GDC to the meeting in February.
- BADT successfully helps many therapists get their outstanding NHS monies.



August

- Covid shielding paused, more therapists and hygienists return to work.
- BADT response to the GDC response to the overseas dentists meeting sent.
- BADT and BSDHT take the unprecedented step of writing to each member of the GDC about the overseas dentist issue.

September

- BADT Virtual E-Conference – free to members.
- Celebrating 60 years of dental therapy training in the UK.

October

- (P)Beer Review with Susan Wingrove on implant care.
- Dental Professionals Conference held virtually.

November

- BADT still advising members about outstanding NHS monies amidst a second lockdown.

Laying the foundations of your career

Charlotte Chan discusses her experience on the Dental Foundation Therapist training scheme.

Graduating from university, certificate in hand, it is expected that you will walk into practice on your first day with a confident glow, ready for anything! The reality is that there will be no tutor wandering around ready to jump in, and the appointment lengths are drastically reduced.

Charlotte Chan is a dental therapist in Liverpool and co-owner at Aspire Aesthetics Academy.

Following my graduation from the University of Liverpool in 2018, I joined the North West Dental Foundation Therapist training scheme hoping to bridge the gap between my university experience and the busy NHS world that I knew was waiting. The Dental House, a Liverpool-based 10-surgery practice offering a range of specialities, was keen to take on a foundation trainee therapist to work alongside the general dentists, foundation dentists and specialists. Stuart Garton, my educational supervisor and the practice principal, took me under his tutelage for the year-long scheme.

The scheme

The scheme was developed to mirror other regions in the UK that had already piloted foundation training in response to the suggestion that dental therapists solely practiced as hygienists following graduation, often leading them to deskill in the therapy aspect of their work. In the North West deanery, the Dental Foundation Therapist training scheme is a non-compulsory postgraduate

training which offers two or three days in an NHS practice combined with monthly study days. There are two yearly intakes in April and September for newly-qualified dental therapists. The pay is set at £100 per day with entitlement to annual leave.

The educational supervisor

While the majority of treatments during the training are conducted independently, an educational supervisor is available in practice for support. It is this safety net which helped me build confidence initially, whether I requested the support or not. Twice a month, tutorial sessions with my supervisor enabled me to discuss or practice procedures that I had identified as challenging. A training portfolio allowed me to reflect on these tutorials and set targets for future practice.

Study days

Who doesn't like a day out of work once a month? Study days are either theoretical or practical, and contribute towards CPD requirements. Halfway through the year, trainees present a case study to peers which is a great opportunity to compare and discuss practice with other trainees. The best perk, if you're lucky, is the free lunch, courtesy of the Oral-B and Colgate representatives.

Benefits

I was compelled to write this article and cast a light on the Dental Foundation Therapist training scheme,, as it is often wrongly considered as the option therapists choose if they are unable to find work or just about passed their hygiene/therapy degree. In fact, the training provides a smooth transition between university placements and general practice, with guaranteed nursing support. Personally, it provided me with the time to discover what I enjoyed the most in dentistry and offered a great work-life balance. It has been a great addition to my CV and contributed to me being taken on by Rose Lane Dental Practice, where I get to work alongside my perio heroes Helen Minnery and Ian Dunn!

Stuart Garton is the practice owner and educational supervisor at The Dental House, Liverpool. He says, "As the owner of an ambitious and busy multi-chair practice, we can see the huge benefit of integrating dental therapy into our setup. We are in an area of relatively high need and often large volumes of stabilisation work can be necessary to ensure our patients are brought back to good oral health.

"We see the dental therapist as the cornerstone of preventive care and the opportunity to work with enthusiastic, newly-qualified clinicians is one that we relish. Aligning the correct practice ethos with dental therapy has allowed us to grow our practice in a positive way, and we have tried to provide a good environment for therapists to flourish.

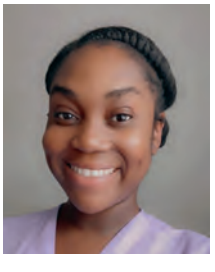
"Because of the financial support offered by the Dental Foundation Therapist training scheme, we were able to ease Charlotte into her role, with initially extended appointments and buffer time between appointments. The reduced pressure to make the numbers work allowed Charlotte to gradually increase her speed and we were able to help her gain more experience in a safe and controlled way. She completed her year as a much more confident and well-rounded clinician and hopefully we have given her the platform to go on and do some amazing things!

"For anyone considering going into the Dental Foundation Therapist training scheme, we would highly recommend it and will definitely be considering utilising this scheme further in the future."

The calm and the storm

Aisosa Irabor discusses her experience as a dental foundation therapist trainee.

There are very few instances that will match the elation I felt when I received confirmation that I had passed all my exams and qualified as a dental therapist. Before embarking on my studies, I was told on too many occasions "to just do hygiene" and "there's not much in therapy"; I knew I had my work cut out for me.



Aisosa Irabor is a dental therapist at Smile Hub in London.

Is it really worth it?

It was clear when looking for work as a dental therapist that opportunities were scarce. Graduates of our profession are coming into the workforce with the skillset, but little opportunity to put it to work. When jobs are available, they often underutilise the full scope of the therapist. However, I remained determined as I wanted to use the skills and knowledge I have worked hard to develop. At the time, it was my good fortune that for the first time in foundation training history, Health Education England (HEE) were commencing piloting dental

foundation training for dental therapists, including in my area. I was over the moon to find this out and even more excited when I was offered a place on the scheme.

I was placed in an incredible practice in Romford, Essex, with a very supportive team. Working with them has been an amazing experience and I wouldn't trade it for anything in the world. Here, I have been able to build on my strengths, whilst understanding what and where my needs may be. It has been challenging but I've learnt and grown so much in a short space of time. Each new experience has made me a better clinician and colleague and I can honestly say I have enjoyed it all. That, I think, is a luxury that comes following undergraduate training, when you have more faith in yourself and know how to overcome challenges and move forward, which is hugely satisfying.

Without a doubt this has not been a regular year; no one was prepared for how 2020 has progressed. As we were all settling into a year with so much potential and promise, we were literally locked down. All our forward momentum completely halted. So, how do you weather this kind of storm?

One way was to stay active. Throughout the lockdown period we were constantly looking at new ways to help in any way we could in our local and wider communities. We signed up to help with 111 and waited for details on redeployment to the Nightingale hospitals. To encourage continued learning, we were immersed in webinars and peer-led reviews.

This allowed us time to continue our professional development and look at other ways of helping our patients. At my practice I have been involved with auditing and triaging. This has allowed me to continue building on my academic skills as well as my communication skills. We stayed in touch virtually to continue our learning and offer avenues of support for those that might be struggling.

As this is a pilot scheme it isn't without its teething problems, but my experience has been pleasant. What I would say is that one of the most valuable qualities has been networking and collaborating with other young dental professionals.

Looking back, if I had to give myself advice, the first thing I would say is to take your time! We want to be better as quickly as possible, but this year really is about building your confidence as much as building your clinical skills. Your educational supervisors are there for this exact reason. Ask questions, shadow them and don't be afraid to ask for help if you're in any doubt.

Practice makes perfect! After leaving university and entering the big dental world, I found that I would sometimes get tongue tied – even if it was something that I had said a hundred times before. So, I began practising in the mirror to myself and with my family. A very funny exercise but all the more memorable and rewarding.

When it comes to your clinical skills, simulate your own phantom heads. You can make putty moulds of extracted teeth to practice on and build on dexterity, and even just to refresh tooth morphology.

Make templates. There are some things that you will repeat for patients day in, day out and these are the things you should use to flesh out your treatment templates. Always leave room for the unexpected; no two patients are the same so your notes will and should reflect that. Write the good and the not so good down. Sometimes patients won't want to answer questions as they do not feel it's relevant but even an omission is important.

You are a valuable member of any team! Foundation training is unique in the way it provides you with almost an apprenticeship to what working life may be; this is the time to understand how and where you can support any practice. You have the opportunity not just to build yourself up but to also promote your profession in the primary care setting. We are needed in the workforce and some of our peers and colleagues just don't know that yet, so tell them. Try and maintain an open mind and think positively. It will go a long way.

Looking to the future

We continue to live in unique and ever-changing times. As a result our approach requires forward thinking as well as resilience. We have clearly seen now more than ever how much more beneficial to our patients it is having a dental team that works to its strengths and utilises the skills of all its staff. We have the opportunity now for practices to use innovation to not only work with the times but build a more sustainable dental service for the future.

If you're newly qualified and/or looking to use your therapy skills again I would recommend foundation training. There are schemes across the country that you can apply for; the landscape of dentistry is changing and your skills are needed! Being part of foundation training is a unique learning experience. I am surprised how much I've changed and absorbed in this fractured year. As I move forward in my career I know I am fortunate to have had this experience, and I am looking forward to building on this year's learning and new skills for my colleagues and patients.

Life as a prison-based dental therapist

Julia Hollywood discusses her role in dentistry.

In the North West, inmates enter prison with twice as many decayed teeth than the general population (Jones et al 2005) and over 40 per cent of prisoners have moderate to severe periodontitis (Heidari, 2014).

The Survey of Dental Services in Adult Prisons in England and Wales (2014) demonstrated that prisoners exhibit increased sugar consumption, higher DMFT scores and worsened periodontal disease than that of the general public by up to four times. The survey also revealed that even though prisoners have a generally higher normative need, they infrequently access the care offered.

As typically more people from lower social classes are imprisoned, they are more likely to exhibit poorer oral health as a result of detrimental habits, including tobacco and alcohol consumption (Heidari, 2007). They are also less likely to access routine care and partake in preventative practices (Locker, 1989), therefore increasing the likelihood of the prison population having some level of oral disease on arrival (Kalavrezos, 2015).

This evidence highlights the vital importance of incorporating a dental team in prisons, complementing the other healthcare services available to inmates.

Having worked in a prison setting for over eight years, I find treating inmates both challenging and extremely rewarding. I started my career as a dental nurse in the prison service, where I realised that I wanted to pursue a long-term career in dentistry. I completed my dental therapist training at the University of Liverpool and was keen to return to the prison environment. I enjoyed building a rapport, caring for and treating inmates and found it extremely rewarding and completely different to working in a standard dental practice.

I am currently self-employed and split my working week between the prison surgery and treating patients at a busy NHS practice, and I appreciate the variety of work and different opportunities that each position provides. Practising in different settings enables me to expand my skills and experience, with a diverse range of patients and their required treatment. For example, in the prison setting our sole aim as a dental team is to improve and promote oral health, which excludes practising cosmetic dentistry on patients.

Within the prison service, many of the patients have never visited a dental practice before their time in prison, resulting in high levels of untreated disease. Prior to the Covid-19 pandemic, we treated around 15-20 prisoners per day and with high demand and significant waiting lists, incorporating a dental therapist role within the team has enabled routine treatments of non-surgical periodontal therapy (NSPT) and restorative work to be completed earlier, reducing waiting times and prisoner pain experience.

Arranging the prisoner day list

Julia Hollywood is a prison-based dental therapist.

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References

1. Cirillo, N. et al. (2014) A hyaluronic acid-based compound inhibits fi broblast senescence induced by oxidative stress in vitro and prevents oral mucositis in vivo. J of Cell Phys. **2.** Mucosamin Mouthwash and Mucosamin Oral Spray Instructions For Use. **3.** Favia, G. et al. (2008) Accelerated wound healing of oral soft tissues and angiogenic effect induced by a pool of amino acids combined to sodium hyaluronate (Aminogam). J Biol Regul Homeost Agents. 2008: 22(2): 109-116.

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1010461919 v 2.0 November 2020

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Presentation: Mouthwash Topical oral solution Spray Topical fluid gel **Indications:** Mouthwash At start of radiological therapy or chemotherapy to help reduce incidence of oral mucositis; treatment of oral mucositis due to radiotherapy or chemotherapy; ulcerative pathologies of oral cavity (e.g. pemphigus, pemphigoid, erosive lichen planus); recurrent aphthous stomatitis; following surgical operations on tongue and oral mucosa; burning mouth syndrome. Spray Oral mucositis due to radiotherapy or chemotherapy. **Dosage and method of use:** Mouthwash Pour 5-10 ml into mouth, distributing product evenly throughout oral cavity and keeping in mouth for at least one minute. Use 3 or 4 times a day. Do not rinse after treatment. For rear sections of oral cavity, product can be gargled. May be diluted with water, according to severity of symptoms. Spray Apply uniform layer into oral cavity by repeatedly spraying until the entire affected area is covered, 3 or 4 times a day according to severity of symptoms. **Contraindications:** Known hypersensitivity to ingredients. No reports of side effects or interactions with drugs or medicinal substances. No known secondary effects during pregnancy and breastfeeding; use at physician's discretion. **Legal category:** Class IIa Medical Device. **Cost:** Mouthwash £19 for 250ml bottle. Spray £19 for 30ml spray nozzle bottle. **CE number:** CE 0373. **Manufacturer:** Professional Dietetics S.p.A. - Via Ciro Menotti, 1/A – 20129 Milan - Italy **Distributor:** Aspire Pharma Ltd, Unit 4, Rotherbrook Court, Bedford Road, Petersfield, Hampshire GU32 3QG, UK. **Date last reviewed:** October 2020. **Version number:** 1010461476 v 2.0

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and ensuring each patient knows they have an appointment is the first task of the day, achieved by sending electronic appointment cards to the content management system (CMS). This is a standalone computer unit located on the wing, enabling prisoners to access health information and request all appointments, ranging from oral health to genitourinary medicine (GUM) clinics.

There are eight wings at the prison, including a segregation wing, an enhanced prisoner wing and a vulnerable prisoner wing (VP). The VP wing houses high profile prisoners and those with a history of sexual offences. These inmates require an escort when moving around the prison, including at their dental appointments. To help organise our diary more efficiently, we arrange for the prisoners from the VP wing to be seen together and at the end of the day's session. This enables the staff responsible for moving these inmates to make a single trip to the healthcare unit each day and ensures that these prisoners do not mix with the general prison population.

During clinic time, the dental team work independently from prison officers, with only the clinician, nurse and patient in the surgery during appointments. There are, however, officers located within the healthcare unit to assist if necessary. As an additional security measure, the prison surgery is fitted with both wall-mounted and computer-monitored panic buttons and each member of the team wears a prison radio incorporating an additional alert system.

All patient care is undertaken as part of a multidisciplinary team and often the dental team work alongside the doctors and nurses to provide care and support. These situations can range from facial traumas due to altercations to assisting with diagnosing diabetes in relation to unstable periodontitis. As much as I enjoy working as part of a large healthcare team, I am often the only dental clinician on the premises. This provides additional opportunities for me to gain confidence in the treatments I provide and ensures that I am up to date with current practices and can consistently build on my continuing professional development.

Availability of oral health products has historically brought challenge for dental teams in prisons. Up until a few years ago, interdental aids, electric toothbrushes and non-prescription mouthwashes were prohibited, as they could be used in the production of illicit substances or weapons. Following significant protest and campaigning from myself and the dental team, the prisoner canteen list has now been expanded to include interproximal brushes, electric toothbrushes and non-alcoholic mouthwashes. These items are supported with in depth information provided in one-to-one oral health sessions and educational health posters uploaded to CMS machines.

Other routine practices common in community dentistry often require additional care and thought in a secure unit – for example, the provision of sample products. Toothpaste samples can be used as contraband that can be sold or swapped for other items and a new purchase protocol has recently been implemented for a denture adhesive following an incident where it was used to conceal medication. The protocol requires inmates to provide their denture as proof that they are using the product for the correct reason.

Influencing positive behaviour changes can be difficult, as many prisoners have experienced minimal education and suffer from stress and depression (Akbar, 2012), symptoms of which can decrease the potential improvement of self-care practices. We strive to improve this situation by tailoring the oral health education (OHE) to individual needs and offering support in various formats, to suit their personal circumstances and understanding. The CMS machines are effective in delivering brief and concise oral health messages and enable the prisoners to view the OHE in both written and pictorial layout. To complement the OHE available, the prisoner can directly request to have an appointment with the oral health nurse or the dental therapist, allowing both interactive and verbal delivery.

As a population, prisoners are also more likely to contract infectious diseases, have a history of homelessness and are more likely to have had or still presently have a mental illness (Neville, 2015). All of these issues can create barriers to care while incarcerated and on subsequent release from prison. Our aim within the dental team is to ensure our patients are pain free, dentally fit and equipped with practical oral health skills that will

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support with future prevention of oral disease. If patients are midway through care when being transferred or released, we provide assurance that information will be transferred to their new establishment or GDP to aid with continuity of care.

The ongoing Covid-19 pandemic has created many challenges for the prison healthcare unit, including several changes directly affecting dental care. To reduce the risk of infection, inmates are now undertaking a 23-hour lock down day, which means they are behind their doors (or inside their cell) for 23 hours of the day. In addition, the increased restrictions mean that the healthcare unit is only able to have six inmates at a time for appointments, meaning certain clinics and treatments take priority – therefore, most of the dental care we currently provide is emergency treatment or involves providing triage and advice service from treatment rooms in the wing, which can reduce effectiveness.

I have recently completed my first clinic following implementation of the Covid-19 safety measures within prisons. I treated five patients fusing aerosol generating exposure (AGE) treatments, including placing temporary restorations and completing hand scaling. I also triaged 12 patients who were complaining of dental pain, appropriately listing them for the correct dental clinic and providing advice for pain management and care, quite different to my days pre-covid.

As dental disease in prisoners is already extremely high and could be exacerbated or in the past, remain undiagnosed, these current implications caused by covid are preventing the inmates from accessing the care they so urgently need. To limit the damage caused by the disruption in service, we are providing intense OHE to all inmates at their wing. As the average sugar intake within the prison population is around 9.8g per day (Heidari, 2007), I have placed significant emphasis on reducing sugar consumption and increasing fluoride intake. Prisoners are issued with fluoride toothpaste and manual toothbrushes on request, and live demonstrations on correct brushing are given by the dental team during triaging.

A proactive approach is taken by the entire dental team to ensure that pain is managed promptly. The application service used by inmates and staff is effective and allows for patients to be automatically listed and seen by a clinician on request of appointment. The regular general nurse presence on the wing also enables dental emergencies to be recognised and treated rapidly.

Although the number of patients and level of care has reduced compared to before the pandemic, it is positive that the dental therapist role can continue to be useful in providing care and advice during these circumstances.

Having worked in a secure setting for many years, I am confident in the progression and improvements in accessible care for inmates and would recommend this role to anyone who enjoys a challenge. As a team, we are supported by the entire healthcare and prison staff to ensure high levels of routine and preventative care is offered to inmates, and this is reflected with patient satisfaction recorded at healthcare forums run by both enhanced prisoners and healthcare staff.

References

1. Adult Dental Health Survey 2009. Available: https://digital.nhs.uk/data-and-information/publications/statistical/adult-dental-health-survey/adult-dental-health-survey-2009-summary-report-and-thematic-series Accessed on 14/10/20.
2. Akbar, T., Turner, S., Themessi-Huber, M., Richards, D., Freeman, R. (2012) 'The health promoting prison: Can it improve oral health? An oral health improvement project for high-security prisons', International Journal of Health Promotion and Education, 50(4), pp. 169-177.
3. GOV.UK, Smoking in prisons Available: https://www.gov.uk/government/speeches/smoking-in-prisons Accessed: 14/03/20
4. Heidari, E., Dickson, C., Newton, T. (2014) 'An overview of the prison population and the general health status of prisoners', British Dental Journal, 217, pp.15-19.
5. Heidari, E., Dickson, C., Wilson, R., Fiske, J. (2007) 'Oral health of remand prisoners in HMP Brixton, London', British Dental Journal, DOI: 10.1038/sj.bdj.2007.32.
6. Jones, C.M., Woods, K., Neville, J., Whittle, J.G. (2005) 'Dental health of prisoners in the north west of England in 2000: literature review and dental health survey results', Community Dental Health. 22, pp. 113-117.
7. Kalavrezos, N., Scully, C. (2015) 'Mouth cancer for clinicians part 4: Risk factors (Traditional: Alcohol, betal and others', Dental Update, 41, 7, pp. 644-654.
8. Locker, D. (1989) 'An introduction to behavioural science and dentistry'. Chapter 3 and 5. New York: Routledge.
9. Lunn, H., Morris, J., Jacob, A., Grummit, C. (2003) 'The oral health of a group of prison inmates', Dental Update, 30, pp. 165-138.
10. Neville, P. (2015) 'Oral health among UK prisoners', Perspectives in Public Health, Vol 135 No 4.

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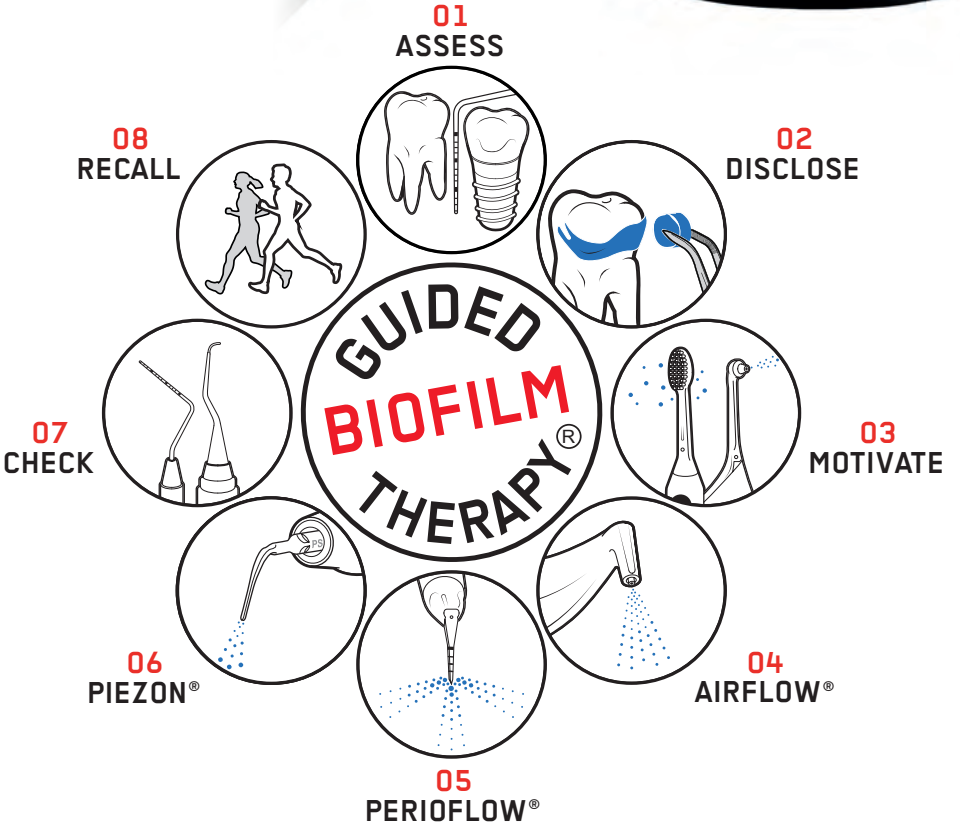

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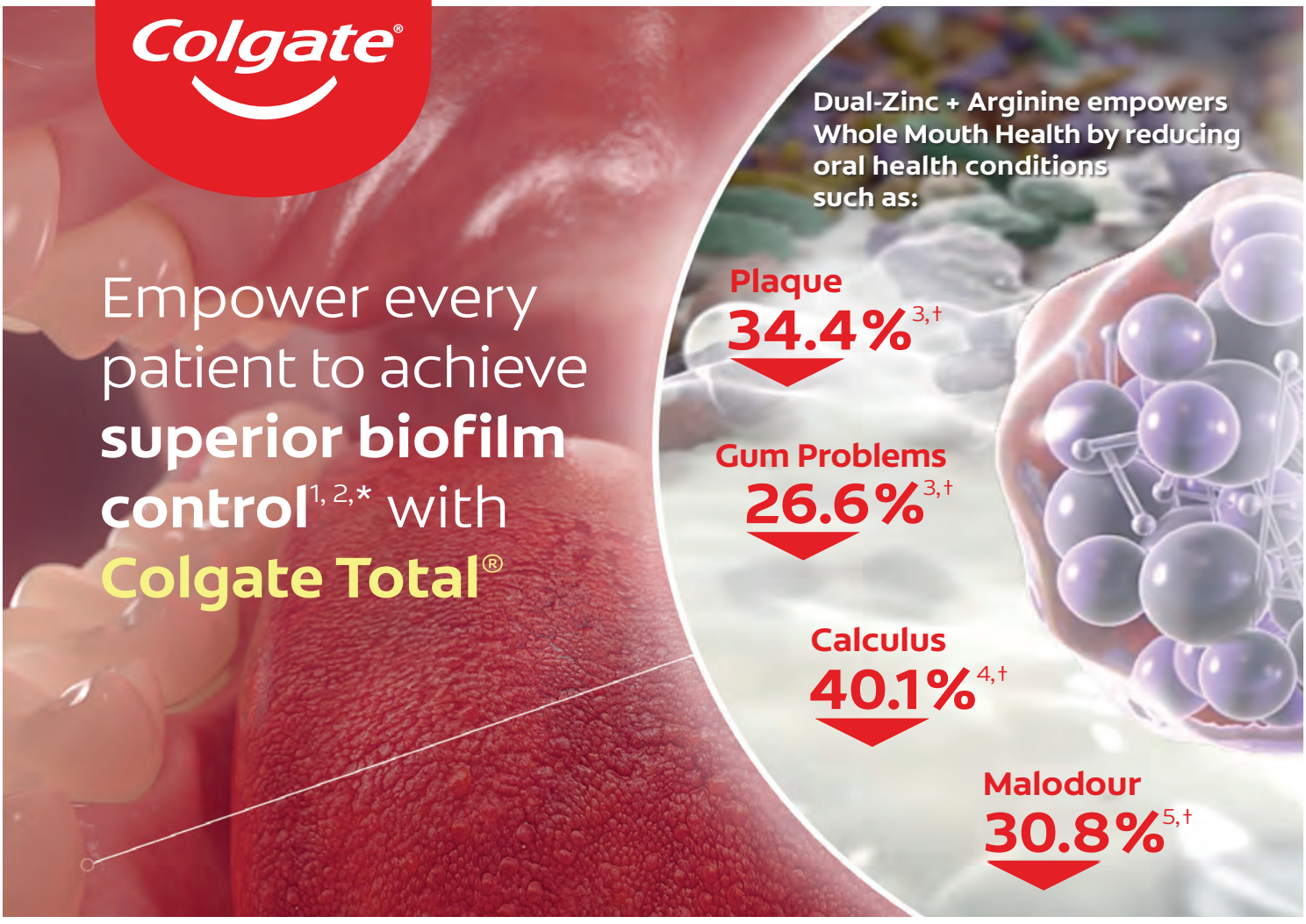

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References:
1. Manus L, et al. *J Clin Dent* 2018;29(Spec Iss A)A10–19. **2.** Daep C, et al. August 2019, data on file. **3.** Li X, et al. *J Dent Res* 2019;98(Spec Iss A):3444.
4. Seriwatanachai & Mateo, September 2016, data on file. **5.** Hu D, et al. *J Clin Dent* 2018;29(Spec Iss A)A41–45. **6.** Sanz et al, *J Clin Periodontol.* 2017;44(Suppl 18):S5–S11.
7. Prasad K et al. *J Clin Dent* 2018;29(Spec Iss A)A25–32.

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References:
1. Manus L, et al. J Clin Dent 2018;29(Spec Iss A)A10–19. **2.** Daep C, et al. August 2019, data on file. **3.** Data on file, Colgate Total® Biofilm Challenge, September 2020 (n=40).

An ethical solution

Verity Hughes discusses the launch of a new toothpaste tablet.

When we talk about dentistry we do not always think about sustainability. The amount of single use plastic that is used in day-to-day dentistry is alarming. I have been conscious about the amount of waste that is produced in dentistry and how we can go about reducing this.

One area that produces unnecessary waste is toothpaste. Most toothpastes come in a plastic tube and a cardboard case. The toothpaste tubes are not recyclable, and the cardboard is generally not needed. The toothpaste tubes take 500-700 years to dissolve!

I have been looking into more eco-friendly ways of obtaining toothpaste for a long time. The main one that I have found that works well is a toothpaste tablet. This concept has been used by retailers like Lush and a lot of plastic free shops. However, the main issue with these is the fact that there is no fluoride in them. As we all encourage our patients to have fluoride in their daily brushing habits, these tablets are not suitable. Then I came across Pärla.

Pärla is a dehydrated toothpaste tablet that has been designed by dentists and are an ethical, eco-friendly and effective alternative to toothpaste in a tube. The benefits of Pärla include:

- No waste – the tablets come in a glass jar, which you just refill when you run out.
- Ethical – Pärla is not tested on animals, unlike some toothpastes.
- Made in the UK, so the carbon footprint is low due to reduced transit.
- It is vegan and gluten free.
- No palm oil – Pärla does not contain sodium laurel sulphate, which contains palm oil.
- Fluoride – the tablets contain 1450ppm fluoride, which is fantastic.

Using the tablets feels very odd the first few times. You pop a tablet into your mouth and chew for five seconds, then hydrate with a bit of water on your brush and brush as normal. As there is no SLS, it does not 'foam' like a toothpaste, but it lathers. It leaves a lovely fresh taste in your mouth and feels just as clean as using a traditional toothpaste.

The company offers a subscription service so that you will not be out of tablets. The first order comes in a glass jar. Then four months later when your refills arrive, simply pour the tabs into your glass jar and throw the compostable bag into your food recycling bin, where it will fully decompose. Pärla offers quarterly orders instead of monthly to cut down on the carbon footprint of the delivery.

I will be using these toothpaste tablets from now on, and recommending them to patients, knowing that they are getting the fluoride that they need while being eco-friendly and ethical. If you would like to know more or order some for yourself, visit **https://parlatoothpastetabs.com**

Verity Hughes is a BADT council member.

A Rwandan experience

Clare McIlwaine discusses her time assisting with the University of Rwanda's dental therapy programme.

In November 2019, myself and my colleague were offered the incredible opportunity to travel to the capital of Rwanda, Kigali. The purpose of this was to assist in the curriculum review of the Bachelor of Science with honours in Dental Therapy (BDT) at the College of Medicine and Health Sciences, University of Rwanda.

We were invited to take part in the review by Agnes Gatarayiha, deputy dean of the School of Dentistry, and Peace Uwambaye, BDT programme lead. Both were interested in our experience of developing shared learning opportunities within the dental team, and felt that the review was a favourable time to introduce such concepts within their own dental curriculum.

Before we set off on our journey, a number of online meetings were planned and documentation was sent regarding the rationale of the curriculum review, along with an agenda for the week.

We discussed the Rwandan dental therapists' cope of practice and it was clear that it was broader; however, at this stage we were unaware of the details but we were keen to find out more about our African colleagues' clinical practice.

Although we were provided with an overview of the programme's existence and the reason for the implementation and review, looking back, I did not fully appreciate the history of their healthcare system and the challenges faced until our arrival.

The genocide

In April 1994, the genocide against the Tutsi led to a massive loss of human life and ultimately, the collapse of Rwanda's healthcare system. Healthcare workers were either killed or fled the country, and human resources and educational infrastructure were all depleted, with no new healthcare providers being trained for the subsequent two years. 26 years on, the nation is slowly rebuilding its healthcare service. Rwanda now has one of the highest quality healthcare systems in Africa. It has entered the top five nations globally for gender equality and is number one for the percentage of female parliamentarians.

Two years after the genocide, the need for healthcare workers was apparent, with one doctor to 55,705 people and one dentist to 400,000

Clare McIlwaine is the south west representative for the BADT.

people. The Ministry of Health, in collaboration with the Ministry of Education, created the Kigali Health Institute, established to address the considerable shortage of healthcare personnel.

A further two years later, in 1998, the Kigali Health Institute introduced the Advanced Diploma in Dentistry and began to train dental therapists. It was the only dental training institute in the country at that time. Graduates with an Advanced Diploma had a broad scope of practice and covered skills such as non-surgical permanent extractions, minor oral soft tissue surgery, wound care and the design of removable dentures with up to four teeth. This broader scope enabled dental therapists to provide a wide range of treatment to patients in remote areas and serve communities that have very little provision of care.

At this time there were only 48 dentists registered with the government (Ragovin, 2018). Given Rwanda's high burden of oral disease, it was clear that the dental care workforce required a greater number of dental professionals to meet the population need. Therefore, in 2013 the Kigali Health Institute, now known as the College of Medicine and Health Sciences at the University of Rwanda, introduced the Bachelor of Dental Surgery (BDS) programme.

Prevalence of oral disease

Oral disease prevalence is high in Rwanda. Almost 50 per cent of children aged two to five years, and over 50 per cent of adults aged 20-39 years, have untreated dental decay. Access to dental care can be difficult, with dental pain being the most common reason for hospital visits. Many are also unable to afford transport, leaving people to walk up to five miles to find local care.

The training of dental healthcare workers is clearly crucial to addressing the population's oral health needs. Yet, since 2008, the University of Rwanda has trained over 500 dental therapists, but up to a quarter have left the profession.

The workshops

During the week of November 25-29, 2019, a five-day workshop was organised at the Remera campus, University of Rwanda.

During this time, we heard from various stakeholders, including programme staff, previous graduates and practising therapists. Over the course of the five days there was considerable debate regarding the relationship between BDT and BDS, the scope of practice of BDT and BDT's identity within the nation's dental profession.

Dental therapists in Rwanda have a wide scope of practice, similar to that of a dentist. The Advanced Diploma in Dentistry was introduced in 1998, with BDS being brought in a number of years later. However, this has caused a number of issues around the scope of practice of BDTs, the clarity of the BDT role, hierarchies and a feeling of replacement by BDS colleagues.

In addition to this, the BDT community is not currently represented on the combined Medical and Dental Council; they sit within the Allied Health Professions.

Due to this, a proportion of therapists have left the profession feeling unvalued, frustrated with the lack of career progression and being viewed as 'inferior' to BDS. This highlighted the need for defining identify, such that BDT feel proud and valued within their own profession, and as specialists of their own scope, especially those wanting to remain in the profession.

During this visit, there were less than 300 dental therapists and 30 dentists, serving Rwanda's population of 11.3m. The issues surrounding the profession clearly need to be urgently addressed to train and retain the dental care workforce.

Recommendations and outcomes

At the time of our visit, the BDT scope of practice was not clear and there was no scope of practice available for BDS. This added to the identity crisis among BDT graduates, particularly after the introduction of the BDS programme. In addressing this, we recommended that a clear scope of practice be created for both BDT and BDS. This would provide clear roles on the delivery of care and a framework for shared dental care within the team.

During our visit and in conjunction with the stakeholders, the outline for a new scope of practice for BDT was developed. This was designed to be broader than those in Europe, Australasia and the USA, and specific in meeting the oral health needs of Rwanda's population. It was also felt to be crucial for remote communities being able to access a dental professional and a wider range of oral health care.

To promote the BDT profession, it was also considered that there should be representation of BDT on the Medical and Dental Council, so they could be a more visible part of the dental profession.

To further break down barriers between BDT and BDS, sharing teaching across relevant aspects of BDT and BDS training was recommended, as it is an important aspect to team working. On the final day, new shared modules were developed and identified for the provision of shared science teaching between medicine, BDS and BDT.

What we learnt

Interdisciplinary care within the dental profession in the UK and Rwanda share many similarities. Professional identity, hierarchies and teamwork are global professional issues that the UK and Rwandan dental workforce both currently face.

The UK has an interdisciplinary workforce model, which is fit for purpose, and there are very few countries around the world with such an approach. The UK dental therapist has a wide scope of practice compared to most other countries, with the exception of Rwanda, and an extraordinary skill set. Yet, there is still misunderstanding of the role, hierarchies and underutilisation that produce barriers to achieving truly shared patient care.

For the dental team of tomorrow, it is imperative to train our professionals together, understanding, valuing and respecting the roles that each member brings. Only then will we fully utilise our dental workforce and share the dental care for the benefit of our patients, in whichever country we may reside.

The infrastructure is present, now is the time to embrace and utilise the team.

References

1. Morgan, J. P., Isyagi, M., Ntaganira, J., Gatarayiha, A., Pagni, S. E., Roomian, T. C., Finkelman, M., Steffensen, J. E. M., Barrow, J. R., Mumena, C. H. & Hackley, D. M. (2018) 'Building oral health research infrastructure: the first national oral health survey of Rwanda'. Global health action, 11 (1), pp. 1477249-1477249.
2. Ragovin, H. (2018) Rwanda: 12 Million People. 48 Dentists. Turts Magazine Spring 2018.

Laura Timms

Chris Deery, Claire Stevens and Helen Rodd

COVID-2019 – Time to Use Silver Diamine Fluoride for Caries Arrest in General Dental Practice?

Abstract: Silver diamine fluoride (SDF) is applied topically to arrest caries and has an increasing evidence base to support its efficacy, both in the primary dentition and to arrest root caries in older patients. It can be used as a non-aerosol generating procedure and is a simple technique. It has a side-effect of discolouring caries black, a factor which requires discussion with patients and their carers prior to application. Due to its efficacy and simplicity, it is a useful intervention for the management of caries.

CPD/Clinical Relevance: Caries is a common condition in the UK, and silver diamine fluoride offers a simple alternative management technique when case selection is appropriate.

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Laura Timms, BDS, PGCert DPH, MFDS RCS(Eng), ACF, Paediatric Dentistry, Charles Clifford Dental Hospital, Wellesley Road, Sheffield, S10 2SZ, **Chris Deery**, BDS, MSc, FDS RCSEd, PhD, FDS(Paed Dent) RCSEd, FDS RCSEng, FHEA, Dean, Professor/Honorary Consultant in Paediatric Dentistry, School of Clinical Dentistry, University of Sheffield, Claremont Crescent, Sheffield, S10 2TA, **Claire Stevens**, BDS, MFDS RCSEd, MPaed Dent RCPS, MPhil(Newc), FDS(Paed Dent) RCSEd, Consultant/Honorary Senior Lecturer in Paediatric Dentistry, University Dental Hospital of Manchester, Higher Cambridge Street, Manchester, M15 6FH and **Helen Rodd**, BDS(Hons), FDS(Paed Dent) RCSEng, PhD, Professor/Honorary Consultant in Paediatric Dentistry, School of Clinical Dentistry, University of Sheffield, Claremont Crescent, Sheffield, S10 2TA, UK.

Background

Silver diamine fluoride (SDF) has been used for caries management throughout the world for decades.[1,2] It has a strong track record of use, particularly in Asia, having been developed in Japan in the 1960s.[1,2] Research has demonstrated that SDF can arrest caries and relieve dentine hypersensitivity.[1-3] Interestingly, there has been a recent rejuvenation of interest in the application of SDF in the UK, perhaps stimulated by increasing waiting lists for children requiring multiple extractions under general anaesthesia (GA) and the recent availability of a product marked 'CE' for use in Europe.[1-4] The emergence of the COVID-19 pandemic and the subsequent preference to avoid aerosol generating procedures (AGPs) has further raised the profile of SDF as a simple intervention for caries management. This use of SDF has been endorsed for caries management in children and mineralization control in adults, in primary care and specialist paediatric dentistry recovery guidelines, issued by the Office of the Chief Dental Officer and the Royal College of Surgeons of England, respectively.[5,6] The British Society of Paediatric Dentistry has also launched a portfolio of resources to support the use of SDF for children in primary and secondary care services.[7-9]

Clinical research has consistently found that SDF effectively arrests caries in the primary dentition. The evidence suggests that it arrests caries 66% more effectively than topical sodium fluoride varnish (5%) and the atraumatic restorative technique.[3,10] Currently, around a quarter of 5-year-olds in the UK have dental caries in their primary dentition.[11] This unmet need is likely to be compounded by measures taken during the COVID-19 pandemic mandating the cessation of routine dentistry. This spanned both primary and secondary care, leaving children waiting for treatment and without access to professional preventive

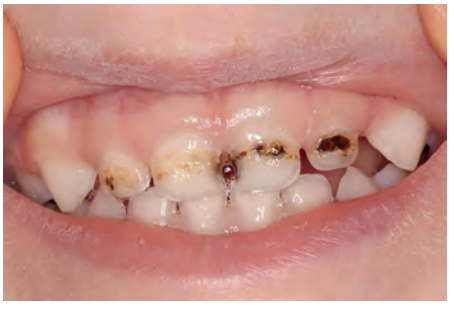


Figure 1. Dark discoloration of caries in a child's anterior teeth following application of silver diamine fluoride.

care and school-based brushing clubs.[12] The necessary precautions required for reopening practice limit the capacity to see the previous levels of patients, meaning fewer children are able to access face-to-face care. These restrictions apply in both primary and secondary care services, consequently there are likely to be many children requiring caries management.

This unmet need mainly falls on primary care, as the majority of children are treated in general dental practice. Consistent with this, recent NHS England commissioning guidance suggests caries management as a 'tier one' level of treatment suitable for general dental practice.[13] For children that do require secondary care, the wait for assessment and treatment is likely to be longer due to the reduced capacity in hospitals, meaning that children will need effective interim caries management in primary care.[12]

Silver diamine fluoride application can be carried out as a non-aerosol generating procedure and is a simple technique for the child and clinician. It is therefore a useful tool in the caries management armamentarium, particularly during the recovery phase of the pandemic, and in dealing with the unmet need for children with caries.

Importantly, due to its simplicity of application, SDF offers a useful alternative for children with dental anxiety or neurodevelopmental needs who may find conventional treatment challenging to accept. A recent study conducted in Singapore found that around two-thirds of parents of children with autism found SDF to be acceptable for caries management.[14]

What is SDF?

Silver diamine fluoride contains silver and fluoride stabilized in ammonia.[2] It is a clear, odourless liquid that has a metallic taste on application. There is one SDF product available in the UK at the time of writing; *Riva Star* manufactured by SDI, Australia and this is 'CE' marked for sensitivity and cavity cleansing in Europe.[1,2] *Riva Star* is 38% SDF and contains 44800ppm fluoride, approximately double the concentration of sodium fluoride varnish.[1,2]

How does SDF work?

For caries arrest, the components of SDF work synergistically. The fluoride promotes remineralization and makes the dentine less susceptible to acid dissolution.[1,2,4,15] The fluoride penetrates into dentine, and there is 2–3 times more fluoride retained in the tooth structure than where sodium fluoride varnish is used.[1,15] The silver has bactericidal properties interfering with bacterial metabolism and inhibiting biofilm formation.[1,2,4,15] SDF also inhibits the action of matrix metallo-proteinases that breakdown collagen.[1,2,4,15] The mode of action to relieve dentine sensitivity is through the occlusion of dentinal tubules by SDF.[16,17]

Evidence base

A comprehensive review published in 2020 examined the evidence from 11 systematic reviews reporting on 30 unique trials of SDF for caries management.[3]

Systematic reviews consistently found SDF to have efficacy for caries arrest in the primary dentition.[3] One systematic review performed a meta-analysis of two randomized controlled trials that compared SDF to ART and fluoride varnish and found that caries arrest was 66% greater at 12 months for SDF.[10]

For the permanent dentition, evidence has found that SDF promotes caries arrest in root caries.[3] Some trials have looked at coronal caries in the permanent dentition, however, the evidence base is less robust. While there is potential for SDF to be applied in this clinical presentation, further research is required.

Similarly, trials have found SDF to have efficacy for caries prevention in both the permanent and primary dentitions, but these results are uncertain and further research is required.[3]

Trials have demonstrated that SDF performs well for short-term management of dentine hypersensitivity, and this is the indication for which SDF is licenced.[16,17]

In the UK, the *Riva Star* product comes with a potassium iodide solution to place in a two-stage procedure in order to reduce the side-effect of black discoloration that comes from SDF use. However, the evidence of using this two-stage procedure with potassium iodide is uncertain, with suggestions that staining persists and that the efficacy of SDF may be reduced.[2,18,19]

The optimum frequency of application for SDF for caries arrest has not been robustly demonstrated. It is generally accepted that 6-monthly applications are appropriate for caries arrest. This has been found to be safe and not at risk of additional side-effects over annual application and is suggested in national guidelines.[4,20,21]

Benefits

Application of SDF is a simple technique, with stages that are similar to those of topical fluoride varnish use. For patients who cannot manage more demanding treatment options, it presents an alternative active treatment with efficacy for caries arrest. This also makes it useful for acclimatization and stopping progression until a patient is able to manage other procedures or engage with preventive practice. It is also an alternative for those requiring relief from dentine sensitivity.

Disadvantages

The main disadvantage of using SDF is that it discolours carious tooth tissue black (Figure 1). There is research from the USA showing that this is not acceptable to many parents, but that when compared to alternatives, such as extractions and pharmacological behaviour management, acceptance increases.[22] A study from Singapore found that 60% of parents found SDF acceptable.[14] There is a paucity of UK data, although research is in progress to explore parental and child perspectives.

Consent form for the use of Silver Diamine Fluoride (SDF) liquid for treatment of tooth decay

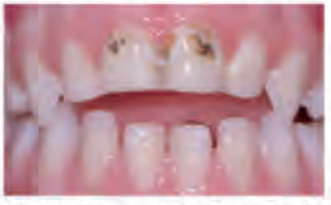
SDF liquid is painted on to teeth to slow down or stop tooth decay progressing. It is reapplied every 6 months. More information is available in the Silver Diamine Fluoride (SDF) liquid patient information leaflet.

What are the benefits?

- It is a simple treatment
- It stops decay progressing

What are the risks?

- Decay may continue to develop, and further treatment such as fillings or extractions may be required
- SDF permanently discolours areas of tooth decay black, as shown here:



- Temporary stain to the skin, lips, gums and cheeks for 1-3 weeks
- Discoloration of tooth coloured fillings
- Staining to clothing
- Temporary metallic taste

What are the alternatives?

- Taking no action and keeping the teeth under review (it is probable the decay will get worse)
- Application of fluoride varnish, fillings, crowns/caps or tooth removal

By signing below I agree:

- I have read and understood the SDF liquid treatment patient information leaflet
- I have discussed with my dentist the risks and benefits of treatment
- I have had all my questions answered
- I consent to my child having Silver Diamine Fluoride (SDF) liquid treatment

Parental agreement to treatment:

Name: Signature:
Relationship to Child: Date:

Child agreement to treatment:

Name: Signature:
Date:

Staff name: Signature:
Job role: Date:

Figure 2. British Society of Paediatric Dentistry consent form for the application of silver diamine fluoride for caries arrest.[9]

Information sharing and an informed consent process is therefore extremely important (Figure 2).

Indications

In the primary dentition, SDF is indicated for caries into dentine. This would be for cases where other evidence-based biological techniques, such as the Hall Technique for preformed metal crowns, were not possible.[7] It is important to note that efficacy of SDF has been described as greater where good oral hygiene practice is in place. It is therefore essential to ensure excellent prevention and that lesions are cleansable.[2,4] SDF may be used in order to avoid GA if other management techniques would be only possible under GA, or to avoid extraction. SDF can be used as an active treatment during acclimatization, or as a measure while a child awaits access to secondary care or treatment under GA. Provided that the staining is not an issue, it may be considered as a treatment in itself given its effectiveness. In the permanent dentition it may be used to relieve sensitivity, and for arrest of root caries.[2]

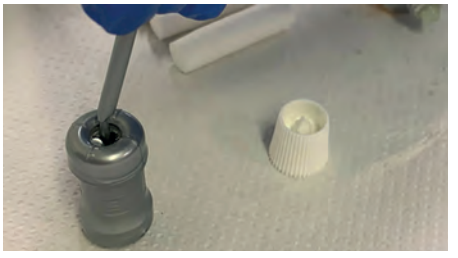


Figure 3. Piercing silver capsule of silver diamine fluoride with a micro-brush.

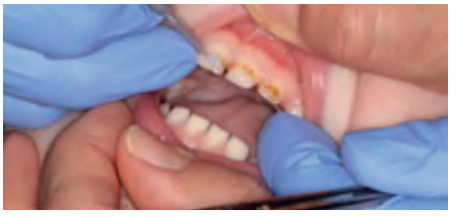


Figure 4. Application of silver diamine fluoride using a micro-brush.

Contra-indications

Silver diamine fluoride is contra-indicated where there is any sign or symptom of pulpal involvement.[2,7] This would include clinical (sinus, swelling or abscess) or radiographic signs of infection (peri-apical or intra-radicular radiolucency). Caries that has reached, or is close to, the pulp clinically or radiographically should not be treated with SDF. Other contra-indications are where patients have an allergy to any component, including silver or heavy metals, or if there is active ulceration, mucositis or stomatitis.[2,7]

The risk of toxicity from SDF is thought to be low.[2] Duangthip *et al* studied the adverse effects of SDF application for 799 children, none of which was found to have systemic toxicity.[21] They estimated

that, for a 3-year-old child weighing 10 kg to suffer a toxic dose of fluoride, eight times the quantity of SDF required to treat 20 teeth would be required.[21]

Clinical procedure

A standard operating procedure is available from the British Society of Paediatric Dentistry for the application of SDF for arrest of caries in the primary dentition.[7] The following clinical procedure is based on that guidance and other published protocols.[2,7,20]

Step 1
Apply petroleum jelly to the soft tissues, including the lips, if possible. Protect the gingiva using petroleum jelly and cotton wool rolls or *Riva Star* gingival barrier. This is required to prevent a chemical burn, although clinical experience suggests that this risk is very low.

Step 2
Ensure that teeth are clean and dry (using a 3 in 1 syringe (air and water functions used separately), cotton wool roll or gauze) and free of debris.

Step 3
Use a micro-brush to pierce the silver capsule (Figure 3). Carefully apply the solution from the silver capsule (SDF) to the treatment site with a micro-brush or other single use applicator (Figure 4). Each capsule is for use on one patient only. A maximum of one silver capsule should be used per visit. This should be left to dry for at least 1 minute, ideally 3 minutes.

Optional step
If a decision has been made with the patient to use potassium iodide (green capsule), pierce the foil of the green capsule. Apply solution from the green capsule (potassium iodide) to the treatment site, with a micro-brush or other single use applicator. Continue application until the creamy white solution created turns clear.

Step 4
Blot the teeth dry using a cotton wool roll, gauze or fresh single use micro-brush. Remove the gingival barrier if used.

Using SDF with glass ionomer cement (GIC)

In 2016, Alvear and co-workers described the silver-modified atraumatic restorative technique (SMART).[23] The SMART technique involves application of SDF following caries removal before the placement of glass ionomer cement.[2] A recent systematic review was unable to draw conclusions over whether or not SDF affects the bond strength of GIC to dentine.[24] An important finding in one study was that SDF reduced the bond strength, however, rinsing with water following SDF application meant that there was no subsequent reduction in bond strength.[25] Therefore, if the SMART technique is utilized, patients should be asked to rinse their mouths with water, then the lesion dries and is restored with glass ionomer cement.[2]

Using SDF with preformed metal crowns

Seifo and co-workers have described a technique named the SMART Hall, using SDF in conjunction with the Hall Technique with the rationale of caries arrest before sealing caries.[2] However, there is limited research into this technique and, as the Hall Technique is so effective as a stand-alone technique, it is difficult to believe a significant amount of additional benefit would be achieved by using SDF prior to placement of the preformed metal crown.[26] Nonetheless, if this technique were to be used, as GIC is used as the luting agent, the patient should rinse with water prior to the clinician cementing the crown.

Using SDF with composite resin

A number of *in-vitro* laboratory-based studies have been undertaken to examine the bond strength of dental adhesives following application of SDF. A recent systematic review concluded that there was insufficient evidence to draw conclusions on the effect of SDF on bond strength.[24] Included studies had mixed results, with some suggesting no difference in bond strength of adhesive bonding systems and some showing reduced bond strength.

If SDF is used prior to composite resin, it would seem prudent to clean the margins with damp cotton wool or get the patient to rinse, as with glass ionomer.

Use of SDF off-licence

SDF is 'CE' marked, meaning that it is licenced for use in Europe. This 'CE' mark is for use for sensitivity and as a cavity cleanser.[2] Other use of SDF, including caries arrest, is therefore off-label or off-licence. The Medicines and Healthcare Regulatory Agency approve medicines for use in the UK, based on an assessment of their safety, quality and efficacy for specified indications.[27]

Using a medicine outside of these approved indications is considered to be off-licence prescribing. However, this is allowed when the clinician is prescribing in the patient's best interest, based on the best available evidence, and there being no suitable alternative.[2,27]

As there is evidence from multiple systematic reviews showing that SDF has efficacy for caries arrest, this appears to meet the evidence requirements.[2,3] As it is indicated here for use where other evidence-based alternatives are not available, either due to co-operation, the lesion itself, or as a temporary measure, it is used where other alternatives are not available. When case selection is appropriate, SDF therefore meets MHRA guidance for prescribing off-licence.[2]

It is important to note that the prescriber takes on more responsibility that may otherwise be attributed to the manufacturer when prescribing off-licence.[2] The MHRA states that 'The responsibility that falls on healthcare professionals when prescribing an unlicensed medicine or a medicine off-label may be greater than when prescribing a licensed medicine within the terms of its licence. Prescribers should pay particular attention to the risks associated with using unlicensed medicines or using a licensed medicine off-label'.

This has been raised as a potential barrier to the use of SDF. However, many drugs are used off-licence, especially in children, so this is not an unusual situation. The support for its use by specialist societies, such as the British

Society for Paediatric Dentistry and the Office of the Chief Dental Officer (England), means that the practitioner can use SDF with confidence.[5-7]

Conclusion

Silver diamine fluoride is currently experiencing increasing attention in the UK and is acknowledged to be a valuable tool for caries management during the recovery phase of the COVID-19 pandemic and beyond. Case selection is important and SDF is not a panacea for all patients. The acceptability to patients and their carers must be considered due to the black discoloration of treated teeth and this must be discussed with patients prior to application. Lesions should be monitored carefully for any progression of caries. The use of SDF for caries arrest is evidence based and, due to familiarity of the stages involved in the technique, it is well suited to primary care practice, particularly when other treatment options are not available.

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Compliance with Ethical Standards

Conflict of Interest: The authors declare that they have no conflict of interest.

Informed Consent: Informed consent was obtained from all individual participants included in the article.

References

1. Timms L, Sumner S, Deery C, Rogers H. Everyone else is using it, so why isn't the UK? Silver diamine fluoride for children and young people. *Community Dent Health* 2020; **37**: 143–149.
2. Seifo N, Robertson M, MacLean J, Blain K, Grosse S, Milne R, Seeballuck C, Innes N. The use of silver diamine fluoride (SDF) in dental practice. *Br Dent J* 2020; **228**: 75–81.
3. Seifo N, Cassie H, Radford JR, Innes NPT. Silver diamine fluoride for managing carious lesions: an umbrella review. *BMC Oral Health* 2019; **19**: 145.
4. Crystal YO. Silver diamine fluoride (SDF): its role in caries management. *Dent Update* 2019; **46**: 1016–1022.
5. NHS England: Office of the Chief Dental Officer. *Novel Coronavirus-2019. Standard Operating Procedure. Transition to Recovery*. 2020. Available from: **https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/06/C0575-dental-transition-to-recovery-SOP-4June.pdf**
6. Royal College of Surgeons of England. Faculty of Dental Surgery. *Recommendations for the Recovery Phase of the COVID-19 Pandemic*. 2020. Available from: **https://www.rcseng.ac.uk/dental-faculties/fds/coronavirus/**
7. British Society of Paediatric Dentistry. *Standard Operating Procedure for the Application of Silver Diamine Fluoride*. 2020. Available from: **https://www.bspd.co.uk/Professionals/Resources**
8. British Society of Paediatric Dentistry. *Patient Information Leaflet for the Application of Silver Diamine Fluoride*. 2020. Available from: **https://www.bspd.co.uk/Portals/0/BSPD_SDF%20patient%20leaflet_For%20printing.pdf**
9. British Society of Paediatric Dentistry. *Consent form for the use of Silver Diamine Fluoride (SDF) liquid for treatment of tooth decay*. 2020. Available from: **https://www.bspd.co.uk/Portals/0/Consent%20Form%20final.pdf**
10. Chibinski AC, Wambier LM, Feltrin J, Loguercio AD, Wambier DS, Reis A. Silver Diamine Fluoride has efficacy in controlling caries progression in primary teeth: a systematic review and meta-analysis. *Caries Res* 2017; **51**: 527–541.
11. Public Health England. 2019. *National Dental Epidemiology Programme for England: oral health survey of 5-year-olds 2019*. **https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873492/NDEP_for_England_OH_Survey_5yr_2019_v1.0.pdf**
12. Zaitoun H, Kandiah P, Yesudian G, Rodd HD. COVID-19: implications for paediatric dental general anaesthetic services. *Fac Dent J* 2020; **11**: 114–119.
13. NHS England. *Commissioning Standard for Dental Specialties – Paediatric Dentistry*. 2018. Available from: **https://www.england.nhs.uk/wp-content/uploads/2018/04/commissioning-standard-for-dental-specialties-paediatric-dentristry.pdf**
14. Hu S, Meyer B, Lai BWP, Chay PL, Tong HJ. Parental acceptance of silver diamine fluoride in children with autism spectrum disorder. *Int J Paediatr Dent* 2020; **30**: 514–522.
15. Rosenblatt A, Stamford TCM, Niederman R. Silver diamine fluoride: a caries "silver-fluoride bullet." *J Dent Res* 2009; **88**: 116–125.
16. Castillo JL, Rivera S, Aparicio T, Lazo R, Aw TC, Mancl LL *et al*. The short-term effects of diamine silver fluoride on tooth sensitivity: a randomized controlled trial. *J Dent Res* 2011; **90**: 203–208.
17. Craig GG, Knight GM, McIntyre JM. Clinical evaluation of diamine silver fluoride/potassium iodide as a dentine desensitizing agent. A pilot study. *Aust Dent J* 2012; **57**: 308–311.
18. Zhao IS, Mei ML, Burrow MF, Lo EC, Chu CH. Effect of silver diamine fluoride and potassium iodide treatment on secondary caries prevention and tooth discolouration in cervical glass ionomer cement restoration. *Int J Mol Sci* 2017; **18**: 340.
19. Li R, Lo EC, Liu BY, Wong MC, Chu CH. Randomized clinical trial on arresting dental root caries through silver diamine fluoride applications in community-dwelling elders. *J Dent* 2016; **51**: 15–20
20. Crystal YO, Marghalani AA, Ureles SD, Wright JT, Sulyanto R, DivarisK *et al*. Use of silver diamine fluoride for dental caries management in children and adolescents, including those with special health care needs. *Pediatr Dent* 2017; **39**: 135–145.
21. Duangthip D, Fung MHT, Wong MCM, Chu CH, Lo ECM. Adverse effects of silver diamine fluoride treatment among preschool children. *J Dent Res* 2018; **97**: 395–401.
22. Crystal YO, Janal MN, Hamilton DS, Niederman R. Parental perceptions and acceptance of silver diamine fluoride staining. *J Am Dent Assoc* 2017; **148**: 510–518. e4.
23. Alvear Fa B, Jew JA, Wong A, Young D. Silver modified atraumatic restorative technique (SMART): an alternative caries prevention tool. *Stomatol Edu J* 2016; **3**: 18–24.
24. Jiang M, Mei ML, Wong MCM, Chu CH, Lo ECM. Effect of silver diamine fluoride solution application on the bond strength of dentine to adhesives and to glass ionomer cements: a systematic review. *BMC Oral Health* 2020; **20**: 40.
25. Knight GM, McIntyre JM. Mulyani. The effect of silver fluoride and potassium iodide on the bond strength of auto cure glass ionomer cement to dentine. *Aust Dent J* 2006; **51**: 42–45.
26. Innes NP, Evans DJP, Stirrups DR. The Hall Technique; a randomized controlled clinical trial of a novel method of managing carious primary molars in general dental practice: acceptability of the technique and outcomes at 23 months. *BMC Oral Health* 2007; **7**: 18.
27. Off-label or unlicensed use of medicines: prescribers' responsibilities. MHRA. 2014. Available from: **https://www.gov.uk/drug-safety-update/off-label-or-unlicensed-use-of-medicines-prescribers-responsibilities**

Continuing education

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Q1 **TIMMS *ET AL* V13 N4: 26–30**

Silver diamine fluoride was developed in Japan in the:
A. 1960s
B. 1970s
C. 1980s
D. 1990s

Q2 **TIMMS *ET AL* V13 N4: 26–30**

Around, how many of all 5-year-olds in the UK currently have dental caries in their primary dentition?
A. 1/2
B. 1/3
C. 1/4
D. 1/5

Q3 **TIMMS *ET AL* V13 N4: 26–30**

When using SDF, how many times more fluoride is retained in the tooth structure compared to when using sodium fluoride varnish?
A. 2-3
B. 3-4
C. 4-5
D. 5-6

Q4 **TIMMS *ET AL* V13 N4: 26–30**

A study in Singapore found that what percentage of parents found SDF acceptable?
A. 50%
B. 60%
C. 70%
D. 75%

Q5 **TIMMS *ET AL* V13 N4: 26–30**

The optimum frequency of application for SDF for caries arrest has not been robustly demonstrated, but it is generally accepted that:
A. 3-monthly applications are appropriate for caries arrest
B. 4-monthly applications are appropriate for caries arrest
C. 6-monthly applications are appropriate for caries arrest
D. 8-monthly applications are appropriate for caries arrest

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