

DENTAL TRIBUNE

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Includes Show Tribune
BDIA Dental Showcase, Pages 17-23

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THE FUTURE OF INVISALIGN™

Dental Tribune spoke with Simon Beard, Align Technology's Vice President and Managing Director of Europe, in London.

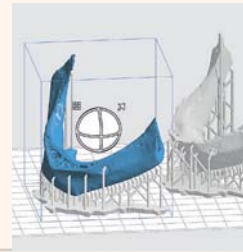
► Page 9



WHAT WOULD DR MO LAR DO?

Part six of our series explores areas that have to be considered when fulfilling one's dream of becoming a principal dentist.

► Page 10



IMPLANTOLOGY

Decisions on how to diagnose and treatment plan patients may be the difference between success and failure.

► Page 13

First-ever robot-led dental surgery performed in China

By DTI

XI'AN, China: For the first time ever, a robot has independently placed two 3-D-printed implants into a patient's mouth without human involvement. The successful procedure raises hopes of lessening Asia's dentist shortage, especially prevalent in metropolises such as Hong Kong and Singapore, and of avoiding risks posed by poor-quality surgeries performed by unqualified dentists.



After taking a CT scan to acquire data on the female patient's skull and jaw, the medical staff fitted position orientation equipment to the woman and determined the movements, angle and depth needed to fit the implants in her mouth so that the robot could be programmed to move into the correct position to carry out the operation.

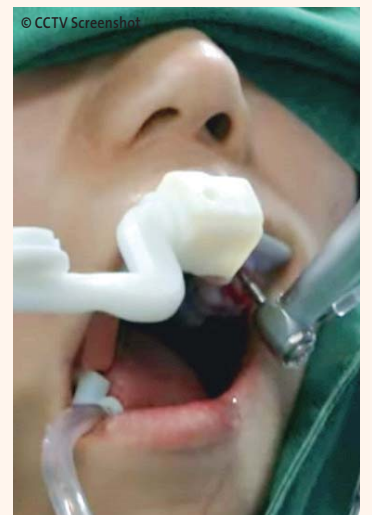
According to Prof. Zhao Yimin, a surgeon from the Fourth Military Medical University (FMMU) in Xi'an, the procedure went very smoothly and the implants were placed with high precision.

Although human staff were present at all times during the 1-hour surgery, they did not play

an active role. The robot, which was jointly developed by the Beihang University in Beijing in China and FMMU's Stomatological Hospital over the last four years, is designed to follow a set of preprogrammed commands, but is able to make adjustments during surgery, the *South China Morning Post* reported.

According to a recent survey, about 400 million patients are in need of dental implants in China. However, the number of qualified dentists in the country is insufficient to meet the increasing demand. Through a continuing implementation of robot technology, this shortage may be eased.

In the future, robot-assisted and -led technology could increasingly facilitate dental surgeons' work, experts have predicted. Robotic technology has already been introduced in recent years to assist in dental procedures such as root canal therapy, orthodontic operations and implant placement. In March this year, a pioneering robotic guidance system, Yomi, received clearance from the U.S. Food and Drug Administration. The computerised navigational system delivers physical guidance



through the use of haptic robotic technology, which provides sensory feedback and constrains the drill in position, orientation and depth, the device's manufacturer, Neocis, stated.

Dental Tribune's new online learning series set to launch in 2018

By DTI

LEIPZIG, Germany: In 2018, Dental Tribune International (DTI) is launching its online educational

platform, Dental Tribune Online Shows. Consisting of a series of educational lectures on all dental specialties, including aesthetic dentistry, digital dentistry, endo-

dentics, implantology, laser dentistry, orthodontics, periodontics and preventative dentistry, the shows are designed to be of immense value for dental profession-

als around the globe and are free to attend.

The unique concept will allow dental professionals insights into the latest studies and case reports as well as gaining first-hand experiences from top international experts. Lectures are designed to be convenient in style and use and participants will be able to access them from anywhere in the world, free of charge. Additionally, interaction with the dedicated experts via the question-and-answer sessions at the end of each presentation offers a chance to dig deeper into an area of interest—all the while receiving credits from an ADA CERP-recognised provider.

Lectures will be presented on a dedicated website and cover two full consecutive days (Friday and Saturday, 9.00 to 20.30) with ten 60-minute presentations per day. Each lecture will be recorded, edited and archived on the respec-

tive show's website to allow for later access.

The DT Online Shows calendar and corresponding websites:

- 16 & 17 February 2018: Laser Dentistry Show www.LaserDentistryShow.com
- 23 & 24 March 2018: Preventive Dentistry Show www.PreventiveDentistryShow.com
- 20 & 21 April 2018: Implant Dentistry Show www.ImplantDentistryShow.com
- 18 & 19 May 2018: Ortho Show www.Ortho-Show.com
- 15 & 16 June 2018: Digital Dentistry Show www.DigitalDentistryShow.com
- 14 & 15 September 2018: Endo Show www.Endo-Show.com
- 26 & 27 October 2018: Perio Show www.Perio-Show.com
- 16 & 17 November 2018: Aesthetic Dentistry Show www.AestheticDentistryShow.com

DENTAL TRIBUNE ONLINE SHOWS

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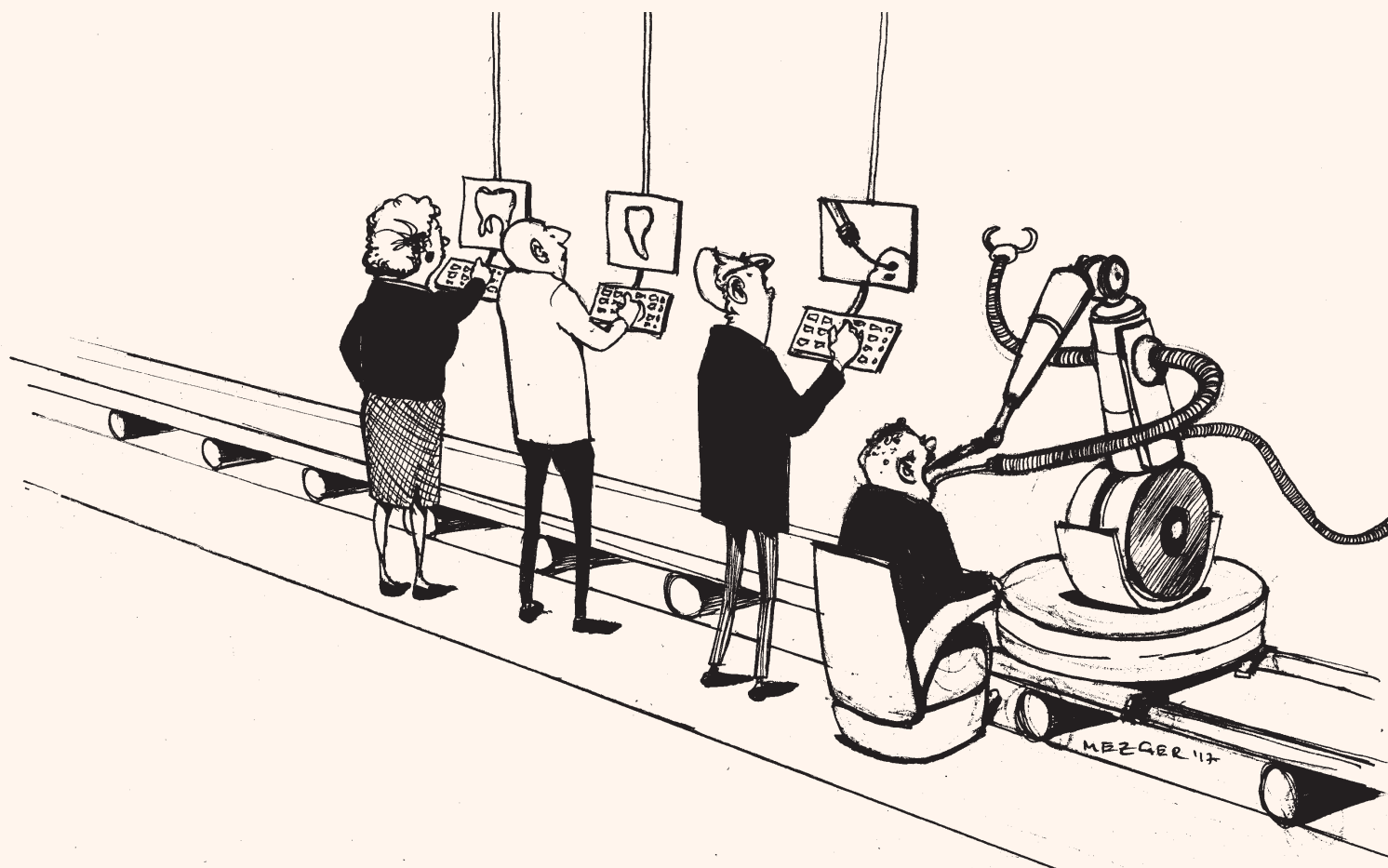
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National campaign to address early-life oral health crisis

By DTI

MANCHESTER, UK: According to figures from the Faculty of Dental Surgery of the Royal College of Surgeons of England, four in five children under 2 years of age in England did not see a dentist last year. Over the same period, more in-hospital operations to extract teeth in children and teenagers were performed than ever before. To reduce the number of younger children needing extractions under general anaesthesia, among other goals, the British Society of Paediatric Dentistry (BSPD) is currently inviting dentists all over the country to join a new campaign to improve oral health in children younger than 2 years of age.

Part of Smile4Life, a national framework introduced in 2016 for oral health initiatives aimed at young children, the Dental Check by One (DCby1) campaign is intended to encourage parents and caregivers to take children to the dentist before they have reached their first birthday. Supported by the Royal College of Paediatrics and Child Health, the Faculty of General Dental Practice, the British Orthodontic Society and other national organisations, it was officially launched at the BSPD's annual conference in Manchester.

"Children as young as 2 and 3 are being admitted to hospital for extractions under general anaesthetic, which is why we need to



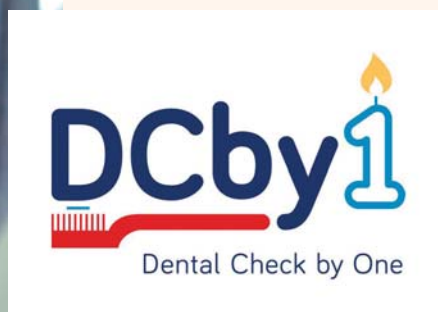
Consultant paediatric dentist and incoming BSPD president Dr Claire Stevens holding 60 decayed teeth she extracted from just 8 children aged two to nine under general anaesthetic in one afternoon. (Photograph: University Dental Hospital of Manchester, UK)

reach families early to provide support on prevention. We hope DCby1 will raise awareness of the importance of looking after children's teeth from an early age. Baby teeth do matter," said Dr

Claire Stevens, a consultant in paediatric dentistry and President of BSPD.

Chief Dental Officer for England Dr Sara Hurley, who is offi-

cially launching the campaign at the Lowry arts centre tomorrow, added: "The opportunities and benefits of DCby1 are a vital ele-



ment in addressing health inequality and securing a smile for life for every child. Working together with families, the British Society of Paediatric Dentistry and the dental profession, we are taking a major step forward in realising our ambition of a generation of cavity-free children."

Practices who wish to actively participate in the campaign and communicate that they are open to children between 0 and 2 years of age can download the official DCby1 logo from the resources section of the BSPD's website. They can further show their support on social media using #DCby1. For practices that have an NHS contract and have fulfilled their units of dental activity allowance, the BSPD said it is working with the Office of the Chief Dental Officer to allow over-performing practices to still receive payment for additional 0- to 2-year-olds they treat.

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UK study shows that household environment at the micro level may play a role in oral health

By DTI

LONDON, UK: The role of the household may have an influence not only at the social level, but also at the microbe level. In a study conducted in the UK, researchers have discovered that early environmental influences are far more significant than human genetics in shaping the salivary microbiome, the group of organisms that determine oral and overall health.

Dr Adam P. Roberts, senior lecturer in antimicrobial chemotherapy and resistance at the Liverpool School of Tropical Medicine, pointed to periodontitis, which is associated with an altered microbiome, as a key example of how the study may be relevant to people's oral and general health. "Once we understand the members of the microbiome that are responsible for health, our everyday behaviour could change to shift our microbiome favourably," he said. Roberts co-led the study, which was conducted during his time at the UCL Eastman Dental Institute in London.

The study's main objective was to discover how the salivary microbiome is established and what factors are most responsible for the mix of bacteria. With access to a unique sample set of DNA and



saliva from an Ashkenazi Jewish family living in various households spread across four cities on three continents, the team asked how much of the variation seen in salivary microbiomes was due to host genetics and how much to the environment.

Owing to the family members adhering to ultra-Orthodox Judaism, they shared cultural diets and

lifestyles that controlled for many confounding factors. Additionally, because the family members' DNA had already been sequenced to the level of single changes in the DNA code, the research team had a unique and precise measurement of their genetic relatedness.

From this, UCL Genetics Institute graduate student Liam Shaw and the team of researchers se-

quenced the bacterial DNA signatures present in saliva samples from 157 family members and 27 unrelated Ashkenazi Jewish controls. Across all samples, they found that the core salivary microbiome was made up of bacteria from the *Streptococcus*, *Rothia*, *Neisseria* and *Prevotella* genera. "What that tells us is that the contact and sharing of microbes that goes on at the very local environment is what de-

termines the differences between individuals," said Shaw.

To understand what might be driving differences at the bacterial species level, Shaw and the team used statistical methods adopted from ecology to ascertain which factors were responsible for the most variation. When comparing factors such as shared household, city, age and genetic relatedness, the factor that determined who had the most similar saliva microbes was overwhelmingly shared household. Furthermore, spouses, parents and children younger than 10 living in a household together had the most similar salivary microbiomes.

According to Robert, the study shows that environments shared during upbringing play a major role in determining the community of bacteria that is established and knowing that the shared environment drives the microbiome may provide the ability to one day modulate it.

The study, titled "The human salivary microbiome is shaped by shared environment rather than genetics: Evidence from a large family of closely related individuals", was published on 12 September in *mBio*, an open-access journal published by the American Society for Microbiology.

British Dental Conference joins forces with Dentistry Show

By DTI

COVENTRY & LONDON, UK: The organisers of two of the largest dental events in the UK, the British Dental



Peter Ward and Alex Harden.

Free to attend, it will become a key date for all members of the dental profession, both organisations said. Financial details were not disclosed. In a statement, BDA Chief Executive Peter Ward welcomed the partnership with CloserStill, which he said will help to take the organisation's flagship event, which has a 100-year history, to a new level. Its members being the BDA's first priority, he said, the association is working to ensure they have access to more exclusive events in more locations across the UK, in addition to the national conference.

"The event will feature a thriving, vibrant exhibition with hun-

dreds of our friends in the industry there to help you find the new and improved tools and services for your life in practice. Alongside the vast exhibition, we will host a CPD [continuing professional development] theatre with a programme bringing you the quality learning you've come to expect from us," he said.

"This is an exciting investment for us all," stated Alex Harden, Event Director of the Dentistry Show. "Between us, the team now running The Dentistry Show and The BDA Conference have been responsible for running some of the UK's fastest growing events over the last two decades. Our combined experience, sector knowledge and significant commercial and marketing resources will be focussed on delivering for both exhibitors and the audiences for these powerful brands."

CloserStill has organised the annual Dentistry Show in Birmingham since 2007. The latest edition, held also in May this year, attracted over 8,000 visitors and 400 exhibitors.

GDC warns of new online scam

By DTI

LONDON, UK: The General Dental Council (GDC) has warned dental practices not to answer requests recently sent by a computer forensics company pretending to be working on its behalf. In the e-mail, the company asks for remote access to patient data, the GDC stated on its website.

According to the GDC, providing unauthorised access to computer software could not only compromise data, but also result in a serious breach of the Data Protection Act. Practices that have received such requests are advised to check with the regulatory body first and, in case of suspected fraud, contact the police immediately.

"The GDC has confirmed that this is not standard procedure and that any requests are unlikely to have been authorised by them. Therefore if you are contacted by any company requesting access to

your computer software you should refuse the request," it said in a statement on its website.

Earlier this year, a global cyber-attack, caused by a wave of ransomware-laden phishing e-mails, brought disruption to NHS systems nationwide and saw details of thousands of its staff stolen.

Editorial note: Are you a victim of a cybercrime? If so, please contact the National Fraud & Cyber Crime Reporting Centre at 0300 123 2040.



Picture showing exhibition hall of the Dentistry Show in 2017.

Association (BDA) and CloserStill Media, have announced their collaboration starting in 2018. Their joint event will be called the British Dental Conference and Dentistry Show and the first edition will be held on 18 and 19 May next year at the National Exhibition Centre in Birmingham.

It will replace CloserStill's main event, the Dentistry Show, as well as the British Dental Conference, most recently held in Manchester in May.



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Leadership shakeup: Dentsply Sirona announces appointment of new interim CEO, COO

By DTI

YORK, Pa., U.S./SALZBURG, Austria: Dentsply Sirona has announced that its board of directors has implemented leadership changes with immediate effect intended to

better position the company to achieve its potential. The changes include the appointment of Mark A. Thierer as interim Chief Executive Officer (CEO) and Bob Size as interim president and chief operating officer (COO). Additionally,

Eric K. Brandt has been elected nonexecutive chairman of the board. Dentsply Sirona also announced that, as part of its leadership changes, the board has accepted resignations from Bret W. Wise, executive chairman; Jeffrey

T. Slovin, CEO and director; and Christopher T. Clark, president and COO.

"Dentsply Sirona's board of directors strongly believes that the company is well-positioned to

achieve its business objectives, and that new leadership is critical to achieving success," said Brandt.

The new interim CEO has more than 30 years of experience in the health care industry. Thierer most recently served as CEO of OptumRx and oversaw all Optum pharmacy care services, including the management of pharmacy benefits, pharmacy network, home delivery pharmacy and specialty pharmacy programs. Thierer earned a Bachelor of Science in Finance from the University of Minnesota and a Master of Business Administration from Nova Southeastern University in the U.S.

"I am excited about the opportunity to lead Dentsply Sirona, the recognized market leader in the dental industry," said Thierer. "We have a significant opportunity to create value for our partners, the dental professionals and patients that use our products every day. Our dedicated employees have an unwavering commitment to high quality products, innovation, and best in class customer support helping us empower dental professionals to provide better, safer, faster dental care."

"Mark Thierer is a proven healthcare executive with a successful track record both in driving organic growth and transaction execution on a comparable scale to Dentsply Sirona," said Brandt. "In addition, as interim President and COO, Bob Size returns to the company with direct operational experience, having served as part of the senior leadership of Dentsply Sirona for fourteen years."

Size served as Senior Vice President of Dentsply Sirona from January 2007 through June 2017, with operating responsibilities over both manufacturing operations and selling organizations located in the U.S. and Europe, as well as the DENTSPLY North America sales organization. Prior to that, he served as a vice president (2006) and as Vice President and General Manager of the DENTSPLY Caulk division beginning June 2003 through December 2005. Size has a Bachelor of Science in Marketing from the University at Buffalo and a Master of Business Administration in Finance from Canisius College in the U.S.

The board of directors has also initiated a search process to identify a permanent CEO and COO.

"On behalf of the Board, I want to thank Bret, Jeff and Chris for their years of service to Dentsply Sirona. We wish each of them the best in their future endeavors," Brandt said.

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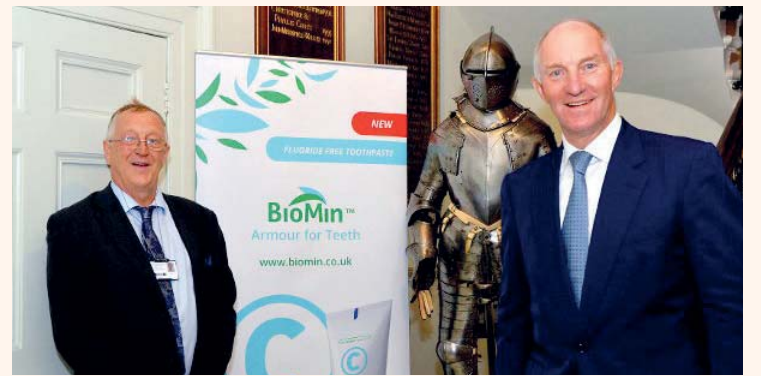
UK-developed protective toothpaste available without fluoride

By DTI

LONDON, UK: For individuals who want to protect their teeth, but do not wish to or cannot use fluoride, BioMin Technologies has recently

launched a new toothpaste. Instead of fluoride ions, the BioMin C releases chloride ions through a patented calcium chloro-phosphosilicate to replace minerals lost from tooth surfaces, the company said.

According to BioMin, the new toothpaste was developed for use in regions of the world where fluoride is already available in high levels in the water supply, such as India and China. In addition to rem-



Professor Robert Hill and Richard Whatley (Photograph: Scara Communications, UK)

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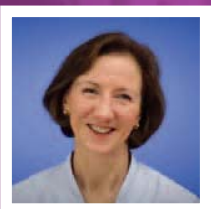
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ineralising tooth surfaces, it may further help protect teeth by reducing sensitivity and diminishing the risk of initial dental caries.

"A large portion of what we eat and drink is either acidic or contains sugars that bacteria use to form acids," said Prof. Robert Hill, Director and Chief Scientific Officer of BioMin Technologies and head of the Dental Physical Sciences unit at Queen Mary University of London. "These acids attack the tooth enamel and dissolve calcium and phosphate from the surface."

"BioMin C works when water and saliva in the mouth help to slowly release the calcium and phosphate ions contained within the toothpaste. These ions then rapidly form the tooth mineral on the tooth surface, which effectively seals open dentine tubules," he further explained.

BioMin
Armour for Teeth

BioMin C is a complement to the fluoride version of the toothpaste, which was launched to the market in April last year. CEO Richard Whatley said that the new version will capitalise on the established distribution network in the UK, parts of Europe and countries around the world, including India, China and Australia.

"Distribution contracts have also been established in the Middle East and Canada, and introduction is planned later this year in the USA. Negotiations with potential distributors and licence holders are on-going in ten further countries," he said.

Developed at Queen Mary University of London, the BioMin technology received the Armourers and Brasiers' Venture Prize in 2013, an annual award given to breakthrough innovations in materials science from the UK. A bio-active glass, it has been developed to adhere to tooth structure through a special polymer, from where it slowly dissolves into ions that form fluorapatite—a mineral also found in shark teeth—over an 8–12-hour period to make teeth more resistant to acids from food.

Tremendous potential for future growth

An interview with Simon Beard, Vice President and Managing Director of Europe, the Middle East and Africa at Align Technology

In September, Align Technology invited active Invisalign providers in the general dental practitioner (GDP) group, who offer the clear aligner system alongside some traditional orthodontic treatment options, to its GDP convention in London in the UK. *Dental Tribune* had the opportunity to speak with Align's Simon Beard about the event, the future of Invisalign and why the markets in Europe offer huge potential.

What was the goal of the GDP convention, and will it be a regular event?

This exclusive event is intended to give our Invisalign providers ongoing education about our product features and insights into best practices from our top providers and help them stay informed of evolving trends, such as a multidisciplinary approach among dental practices. The convention is applicable to current Invisalign providers regardless of whether they are fairly new to Invisalign or have been a provider for some time and are looking to continue their education.

We plan to continue to provide a wide variety of educational events or sessions to enable our Invisalign providers to gain experience and develop the Invisalign provider community, for peer-to-peer discussion and exchanges of best practices.

recognised brand in dentistry and orthodontics.

The brand equity plays a vital part in our continuing success—but we are not resting on our laurels and we invest massively in perpetuating every facet of it to maintain this. Invisalign is a clear leader in the specialty, and people know it and ask for it by name. There are a large number of factors that contribute to this recognition and direct patient request, but it is primarily because the Invisalign brand is synonymous with cutting-edge technology, efficacy, pace of innovation, discretion, quality and comfort. Our data shows that the percentage of patients who ask for Invisalign by name is a key driver for new clinicians to seek training so that they can respond to patient requests and grow their practices as a result.

We have invested and continue to invest in the Invisalign brand and raising awareness of consumers, both adults and parents of teens, regarding our treatment options to enhance access to orthodontic treatment and ensure patients ask for Invisalign when looking for a clear option.

Over the past year, we have seen more than 413,000 UK visitors to the Invisalign UK website. Of these, over 22,000 interested

solution for GDPs in several European markets. How has the scope of treatment changed with this new solution?

The Invisalign Go system is a new, simplified approach to tooth straightening that takes GDPs through identifying, planning and monitoring aesthetic cases, enabling them to use the Invisalign system to treat patients confidently right from the word go. The Invisalign Go system is suitable for treating patients with mild spacing issues or orthodontic relapse or even for pre-restorative treatment. With the Invisalign Go Case Assessment Tool, Invisalign providers can assess a patient's suitability for treatment based on chief concerns and receive a clear indication of whether the patient is suitable for treatment.

Align's focus is to enable GDPs to treat a portion of the population that would benefit from mild or simple tooth straightening, those potential patients that would not have sought treatment with traditional orthodontic appliances.

With ClinCheck and the iTero Element scanner, Invisalign is now part of the ever-growing field of digital dentistry. What have these technologies added to Invisalign treatment?

Digital technology is changing every industry and almost every type of product and service. Digi-

It all starts with a digital scan. The iTero intra-oral scanner replaces physical impressions with a precise 3-D digital scan. This digital scan is the basis of the Invisalign treatment. Using Align's proprietary software, our dental technicians use the scan to create a virtual treatment plan, customised for each patient. In June this year, we launched a software upgrade for the iTero Element intra-oral scanner that includes the ability to compare patient scans over time with the new TimeLapse technology, providing GDPs and orthodontists with enhanced visualisation, assessment and communication tools. In addition, with the 1.5 software upgrade, patient scans can be completed in as little as 1 minute with the same accuracy and reliability practitioners have come to expect from iTero scanners.

We also announced ClinCheck Pro 5.0, the next-generation Invisalign treatment software, which offers the ability to view side-by-side treatment plans, a more realistic 3-D visual model, and a new configurable toolbar for even greater flexibility. Designed to deliver an exceptional user experience and increased control, ClinCheck Pro 5.0 also helps Invisalign providers achieve their treatment goals by enabling them to view previously prescribed interproximal reduction values and anterior-posterior correction, with various options to stage the treatment plan exactly as desired.

Constant innovation is absolutely crucial to our current and future success and drive to address unmet needs. Perpetual developments in our software, our materials and the different types of malocclusions we can treat are pivotal to our success.

What will the next generation of Invisalign offer?

Invisalign offers a solution applicable to roughly 60 per cent of patients suitable for fixed orthodontic appliances (ten million case starts per year). With continued feature advancements and ongoing innovation, we believe Invisalign can be applicable to 75 per cent of the traditional orthodontic market, which excludes severely complex cases in which surgical procedures may be needed and young children with many primary teeth.

Whether it is clear aligners, digital scanning, virtual treatment plans or software programs that help patients visualise their new smile, our technology and processes deliver a tremendous patient experience and effective treatment outcomes, and we will continue to advance the technology in all those areas. Align Technology is the only company in the



Simon Beard (© Align Technologies)

world to date that has an orthodontic database of about five million dental cases, and we use machine learning to mine that data to really learn and understand how we can do orthodontics better, how it can be faster and more convenient for both dentists and patients.

The four-millionth patient was treated with Invisalign clear aligners last year right here in London. How important is the European market compared with other Invisalign markets?

The demand for the Invisalign system is growing globally and the UK is one of our success stories. We have helped treat over 4.7 million cases worldwide and the four-millionth patient, which we announced last year, was from the UK. The market here is relatively smaller compared with our largest market—the US—yet remains one of our largest markets in Europe. Having said that, clear aligner therapy is still very under-penetrated in the markets we serve, including the UK, and we see tremendous potential for future growth here.

There are ten million orthodontic case starts of traditional wire appliances each year globally, three million in Europe alone. The Invisalign system is applicable to approximately 60 per cent of those cases, of which about a quarter are adults and the rest are teenagers. Add to that the 100 million consumers in Europe that would benefit from simple straightening of their teeth to gain a better smile and you can see the enormous potential for Invisalign clear aligners.

Where can readers find out more?

GDPs interested in learning more about the Invisalign system and our training programmes can go to www.invisalign.co.uk and select "I'm a Doctor" from the top drop-down menu.

Thank you very much for the interview.



Beard speaking at the GDP convention in London. (@ Positive Communications)

Your new global brand identity was introduced to global markets several months ago. How has the campaign been received by your customers and clinicians in general in Europe?

The Invisalign brand is one of our most important assets. We have invested over US\$0.5 billion in sales and marketing over the past 20 years and built the most

consumers have taken an Invisalign smile assessment online and more than 132,000 have searched for an Invisalign provider. These results attest to the success of the campaign and that both potential patients and, as a result, clinicians have accepted the investment in the new identity.

With the Invisalign Go system, you recently introduced a clear aligner

tal technology allows providers and consumers to visualise an end goal—such as a better smile. We want to help our customers leverage digital technology to help them provide the best and most predictable treatment options for their patients, and the digital process of the Invisalign system combined with the iTero Element scanner can offer that.