CANBERRA, Australia: Millions of patients Down Under are breathing a sigh of relief, as a new scheme for subsidised dental care went through the upper house in November.

The government programme will replace the recently closed Chronic Disease Dental Scheme (CDDS) and aims to provide better access to dental services for children, as well as low-income adults and pensioners.

The Labor government decided to close the CDDS in August this year, claiming that the costs had skyrocketed since it was implemented by the Howard government in the year 2007. Funding for those eligible for the scheme will expire by the end of this month, they said.

Under the CDDS, patients with chronic illnesses and complex care needs were able to claim benefits of AUS$4,250 (US$4,440) for dental treatment by a private dentist when referred by a doctor.

Starting in January 2014, the new scheme, called the Dental Benefits Amendment Bill 2012, will provide AUS$1,000 (US$1,045) over two years for families with children under the age of 17 who require basic dental treatment. Adults with concession cards, including pensioners, will be able to access the scheme later that year.

Overall, the government will stump up AUS$4 billion (US$4.18 billion) over six years for subsidised dental health care. Services in underserved areas are also expected to receive a financial injection of AUS$225 million (US$235 million) over the same period.

Primary children are supposed to benefit from the new scheme. (DTI/Photo Zou Zou)

**Australian Senate passes dental care bill**

The changes will be implemented by the end of this month, according to figures of the Japanese Dental Association, forensic dentistry experts in Japan lack experience and are too few with knowledge about how to identify bodies with the help of dental records, the country’s Ministry of Health announced.

In an effort to boost the use of measures to identify victims of crimes and natural disasters, dental students in Japan will be required to answer questions on forensic dentistry in upcoming national dentistry examinations. The changes will be implemented by 2014 and followed by investments into training that will provide students with enhanced knowledge about how to identify bodies with the help of dental records.

Approximately 1,200 unidentified human bodies are found in Japan each year. In 2011, this number increased significantly owing to devastations caused by the Tōhoku earthquake and the resulting tsunami. While 10 per cent of the victims were identified by their teeth, according to figures of the Japanese Dental Association, forensic dentistry experts in Japan lack experience and are too few with only half a dozen experts available in some of the country’s provinces.
Dental caries is an infectious disease affecting children and adults throughout life. This course will address current trends in caries disease management utilizing caries management by risk assessment (CAMBRA), an evidence-based methodology that identifies the cause of disease by assessing risk factors for each individual patient. Based on the evidence presented, the clinician then corrects the problems (by managing the risk factors) using specific treatment recommendations including behavioral, chemical, and minimally invasive procedures. Upon completion, the participant shall be able to properly perform a caries risk assessment and propose evidence-based treatment options to the patient. The participant will also have a thorough understanding of biological, chemical and mechanical aspects of caries disease.

Recent research suggests associations between poor oral health status and pulmonary diseases such as pneumonia. This presentation will review the background information that suggests that oral bacteria influence the course of lung infection, and that improved hygiene may help reduce the risk of pneumonia in high-risk populations. Results will be presented from a recently completed pilot, randomized, placebo-controlled trial that evaluated the frequency of use of oral topical chlorhexidine gluconate (CHX) to prevent or reduce oropharyngeal colonization by respiratory pathogens in mechanically ventilated-intensive care unit (MV-ICU) patients. Results from ancillary molecular epidemiologic studies to genetically type bacterial strains cultured from lower airway secretions of MV-ICU patients and compare them to strains of the same species isolated from their dental plaque will also be presented. Participants will learn that there is evidence for and against the use of oral interventions to prevent pneumonia and that the oral microflora influences the initiation and progression of lung infection. Ideas for new strategies for the prevention of lung infections will also be presented.

While the Green party, Labor’s coalition partner in the current minority government, applauded the new scheme as a historic step towards the proposed universal dental health care system, members of the opposition have lambasted the bill for overstressing the government’s budget. Dentists too have criticised the implementation of the scheme only in early 2014, which will leave children and adults previously covered by the CDBS without proper care for over 12 months.

“Treatment of the chronically ill, for which this scheme was designed, is often complex, requiring an extended period,” commented Dr Shane Fryer, President of the Australian Dental Association recently. “A 12-week period to complete treatment will mean that patients under the CDBS will not be able to finalise their treatment plans.”

Liberals claim that approximately one million patients have benefited from the CDBS so far. The new framework will provide more than three million children and an additional one million adults with access to dental care, according to the government.

### Dental Tribune Asia Pacific Edition

**DT Asia Pacific:**

**SHANGHAI, China:** Attendance figures for DenTech China increased by another 4.5 percent this year, UMB ShowStar, the organiser of China’s second-largest dental show, has reported. In addition to the growth in professional visitors, the exhibition saw 16 percent higher participation by industry.

According to the latest figures, almost 600 manufacturers and dealers of dental materials and equipment took part in DenTech China 2012, almost half of which were companies from abroad, with the US and Germany having the greatest representation. The company said that some 56,000 visitors and more than 86,000 visitors during the show held at the Shanghai World Expo Exhibition and Convention Center in late October.

The event also featured a four-day dental conference, a number of forums on specialties like implantology, and the sixth Asian Dental Lab Outsourcing Exhibition. DenTech China, which was first held in 1994, is staged annually in collaboration with the Chinese Stomatologists Association, and the School of Stomatology at Shanghai Jiao Tong University, among other dental institutions. Since March 2012, all operational activities have been managed by Shanghai UMB ShowStar Exhibition, a recently formed joint venture between UBM, a UK-based B2B communications provider with offices in Shanghai, Beijing and Hong Kong, which holds 70 percent of the company, and the previous owner of DenTech, Shanghai ShowStar Exhibition Service. Its next show will be held again in October next year.

In terms of visitors, DenTech China currently ranks second after Sino-Dental in Beijing, with 70,000 visitors. Dental South China in Guangzhou, the third major dental show, reportedly attracted 50,000 visitors in 2012. In addition, smaller dental shows in cities like Xiamen and Nanjing have recently entered the market.

**According to estimates of the National Bureau of Statistics in Beijing, China boosts a dental workforce of 120,000, a number equal to dental living in Germany, France and the Benelux States combined.**

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DT Asia Pacific

HONG KONG: What do Tan Ming-Yi, Min-Cheol Song and Darapan Pattanapichakorn have in common? All three dental students are winners of clinical case and research competitions held by DENTSPLY Asia during this year’s annual meeting of the International Association for Dental Research South-East Asian Division (IADR SEA) in November.

In addition to its annual Student Clinician Program (SCP), which saw National University of Singapore student Ming-Yi come tops with her presentation on 5-D repositioning accuracy of semi-adjustable articulator cast mounting systems, the dental manufacturer held its CERAM-X and Endodontic Case Contest. While the latter went to Pattanapichakorn from the Chulalongkorn University in Bangkok, Thailand, the aesthetic dentistry contest produced four winners from universities in South Korea, Malaysia, Taiwan and the Philippines. They were awarded certificates and prize money, among other things.

According to DENTSPLY, SCP winner Ming-Yi will be funded to present her research poster along with winners of student competitions from other regions around the world at the annual meeting of the American Dental Association in New Orleans next year. The US-based dental group currently holds its SCP contests in over 35 countries. Initiated in the US in 1959, the programme aims to support and promote undergraduate research at dental schools and universities worldwide.

“Magnetic mounting systems have gained popularity in recent years, but this has not been investigated in detail,” Ming-Yi told Dental Tribune Asia Pacific.

“We compared a conventional screwed-on semi-adjustable articulator cast mounting system with five magnetic mounting systems. Based on our study, the conventional screwed-on system was found to be comparable to several magnetic systems in terms of repositioning accuracy.”

Other entries to the competitions included an evaluation of the effect of carbamide peroxide on the enamel bond strength of composite resins at different post-bleaching times, and the use of Bunton-tigre, a flowering plant of the Sansevieria genus from the Philippines, as antimicrobial dental floss. All participants were winners of their national contests.

More than 5,000 students have participated in the SCP since its inception. DENTSPLY’s Asian division has been conducting its South-East Asia programmes since 2002. This year was the first time that the company held all three contests together at one event. More than 15 students from 10 countries in the Asia Pacific region took part in the competitions, according to Clinical Marketing Manager Stephen Ong.

He announced that his company had recently formed a partnership with the IADR SEA and will be the exclusive host of its SCP contests at the organisation’s annual meeting for the next four years.

The next competition covered by the contract will be held during the 2013 IADR Asia Pacific Region meeting in Bangkok. [Image]

DT (DTI/Photo courtesy of DENTSPLY Asia, Hong Kong)
Foreign demand drives world’s largest dental showcase

The development of CAD/CAM and implantology will continue to be the determining trends at the next International Dental Show, representatives of the organiser Koelnmesse and the Association of German Dental Manufacturers (VDDI) told reporters at a press conference in Germany. Besides these mega topics, the use of lasers in different fields of dentistry will be given particular attention.

Reportedly, more than 1,900 dental manufacturers and distributors have registered for next year’s event, which has been expanded by 5,000 sqm and will fully occupy another hall at the Koelnmesse fairground in Cologne.

According to Koelnmesse’s chief operating officer, Katharina C. Hamma, the increase in exhibitors this year is due to the high demand from companies abroad, which has grown by 10 per cent compared with the last IDS. While the number of domestic businesses will remain the same, almost two-thirds (68 per cent) of all companies exhibiting in 2013 will come from outside Germany.

“IDS will prove its position as the global leading trade show in the dental industry once again. Its success is an endorsement of our trade show concept,” Hamma explained. “Therefore, we will be retaining the successful formula for the upcoming event.”

Her company, which hosts other well-known international trade events like Art Cologne and gamescom, stages the global dentistry showcase in partnership with the commercial enterprise of the VDDI and the Society for the Promotion of the Dental Industry (Gesellschaft zur Förderung der Dental-Industrie) every two years. The last edition, held in March 2011, drew 1,954 exhibitors and 118,000 professional visitors to Cologne, according to reports.

Hamma announced that in addition to professional activities presented by the German Dental Association and the Association of German Dental Technicians’ Guilds (VDDI), the Federal Association of Dental Alumni (BDZA) in Germany will be hosting a Generations’ Lounge for the first time at next year’s IDS, which is intended to serve as a meeting point for dental students, practice newcomers and established practitioners.

Furthermore, visitors will be able to learn more about the latest products and technologies at the customary Speakers’ Corner (in Hall 5.1).

The IDS app will also be updated in the upcoming weeks. The application, available for several smartphones, allows users to search for information on exhibitors and products ahead of the show.

The next edition is scheduled to open its doors with the usual Dealers’ Day on 12 March 2013. More than 120,000 dental professionals from Germany and abroad are expected to attend the event from 12 to 16 March to update their knowledge on the latest developments and trends in dental equipment and materials, according to Hamma.

Koelnmesse CEO Katharina C. Hamma aims for a new record-breaking IDS.

Koelnmesse CEO Katharina C. Hamma aims for a new record-breaking IDS.
Men with erection problems three times more likely to have inflamed gums

MALATYA, Turkey: Men in their thirties with inflamed gums caused by severe periodontal disease are three times more likely to suffer from erectile dysfunction, Turkish researchers have found. The study results confirm previous research from India from 2011 that linked both conditions.

In their study, Turkish researchers compared 80 men with erectile dysfunction with a control group of 82 men without erection problems. They found that 55 per cent of the men with erectile dysfunction had inflamed gums compared with 23 per cent in the control group.

When the results were adjusted for other factors, such as age, body mass index, household income and education level, the men with severe periodontal disease were 3.29 times more likely to suffer from erection problems than the men with healthy gums were.

The men in both groups were aged 30 to 40, with an average age of just under 36, and there were no significant differences when it came to body mass index, household income or education.

Their sexual function was assessed according to the International Index of Erectile Function and their gum health using the plaque index, bleeding on probing, probing depth and clinical attachment level.

"Erectile dysfunction is a major public health problem that affects the quality of life of some 150 million men, and their partners, worldwide," said lead author Dr Faith Oguz from Inönü University in Malatya, Turkey.

"Physical factors cause nearly two-thirds of cases, mainly because of problems with the blood vessels, with psychological issues like emotional stress and depression accounting for the remainder."

According to Oguz, many studies have reported that chronic periodontitis (CP) may induce systemic vascular diseases, such as coronary heart disease, which has been linked with erection problems.

"To our knowledge, erectile dysfunction and CP in humans are caused by similar risk factors, such as ageing, smoking, diabetes mellitus and coronary artery disease," said Oguz. "We therefore excluded men who had systemic disease and who were smokers from this study."

"We particularly selected men aged between 50 and 60 to assess the impact of CP on erectile dysfunction without the results being influenced by the effects of ageing. The results of our study support the theory that CP is present more often in patients with erectile dysfunction than those without and should be considered a factor by clinicians treating men with erection problems."

Erectile dysfunction affects about 150 million men worldwide.
**One in five patients worldwide would consider medical tourism**

In addition, about 56 per cent reported that they would probably consider going abroad to receive treatment. These were predominantly younger adults, either below the age of 55 (10 per cent) or between 55 and 64 (19 per cent). Approximately 46 per cent, mainly aged between 50 and 64 (15 per cent), said that they would not travel to another country for medical reasons.

With an average of 52 per cent, medical tourism was most appealing to people from India, Indonesia, Russia, Mexico and Poland, according to the investigators. In comparison, survey participants from Japan, South Korea, Spain, France, Belgium and Sweden were the least likely to travel for medical treatment. Only an average of about 7 per cent of participants from these countries said that they would travel abroad for medical care.

People who were employed were more likely to consider treatment abroad than unemployed individuals were; and more men (19 per cent) than women (17 per cent) would travel to another country for medical treatment, according to the survey. Many participants said that they would be willing to travel for medical treatment if the costs were significantly lower than in their home country, the investigators said.

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**ADA updates imaging guidelines**

**NEW YORK, USA:** The American Dental Association has recently published an update of its 2004 recommendations for prescription of dental radiographic examinations. In collaboration with various dental and other institutions, the organisation aimed to provide a document to guide practitioners in using diagnostic imaging appropriately in daily practice.

Among other topics, the document covers receptor selection, hand-held X-ray units, technique charts and radiation-risk communication, which were not covered in the earlier version. In addition, ADA updated its recommendations for shielding to be consistent with guidelines established by the National Council on Radiation Protection and Measurements (NCRP).

For example, it now recommends the use of thyroid collars for all patients, which was recommended only for children and pregnant women before.

Rather than being a standard, the new set of recommendations is intended to serve as a useful resource that dentists can refer to if their patients have questions or concerns about the level of radiation exposure, said Dr Sharon Brooks, professor emeritus at the University of Michigan and a consultant to the ADA Council on Scientific Affairs. “We are encouraging dentists to look at the issue of selecting radiographic examinations for their patients on an individual basis, not as a one-size-fits-all,” she said.

According to the NCRP, radiation exposure from dental diagnostics accounts for about 0.2 per cent of the total exposure from natural and man-made sources in the US (5.6 mSv). Nevertheless, ADA recommends that dentists weigh the benefits of taking radiographs against the possible risk of exposing patients to X-rays, as the effects may accumulate from multiple sources over time.

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An interview with ADIA national president Trevor Martin

Sales of dental equipment in Australia have faltered again this year, according to a report by the Australian Dental Industry Association (ADIA). Dental Tribune Asia Pacific had the opportunity to speak with the organisation’s newly elected national president and Gunz Dental managing director Trevor Martin, about the reasons for the decline and the prospects for the industry down under.

DT Asia Pacific: The latest figures released by your organisation show that the dental industry in Australia has declined for the second consecutive year. Is this still the effect of the global financial crisis or are there other reasons for this negative performance?

Trevor Martin: The overall decline was actually quite small but significant in a sector that had grown by around 6 to 8 per cent annually for more than two decades. The decline is a result of the crisis, but not necessarily for the reasons that people think. The Australian government introduced a number of incentives in the early days of the financial crisis to sustain the economy. This saw dental practices making new investments in equipment, particularly large equipment, which drove growth and underpinned sales to record highs. The overall decline is actually coming off that peak.

That said, both the data and anecdotal evidence from ADIA members confirm that the market has softened in the past 18 months. It’s certainly a competitive place to do business, with conditions tougher than they were a few years ago. That’s why ADIA is delivering a range of support programmes and tools, such as the “Australian Dental Industry Intelligence Report”, that allow member businesses to make informed decisions about the direction of their business to help them face the future with confidence.

According to the Bureau of Statistics in Canberra, the Australian economy is growing rapidly and is about to overtake Spain as the 12th largest economy in the world. Do you expect any impact on the dental industry from this development?

Trevor: Australia’s economic growth needs to be put into context. It is true that we are relatively well positioned internationally, with GDP growth at more than 5 per cent, unemployment at slightly above 5 per cent and the federal government’s budget returning to surplus this year. However, the bureau data also shows that this is largely driven by extraordinary growth in the mining sector, which is sustaining the overall economy. The non-mining sector is basically flat and for this reason ADIA expects that the dental industry will grow in the short term, but at a rate lower than the long-term average.

The Australian government recently agreed to a AUS$4 billion dental care package. Could this benefit the sales of dental equipment?

Trevor: The Australian government’s announcement is welcome and addresses some very real impediments to dental and oral health care. That being said, the expert analysis commissioned by ADIA shows that the impact of the announcement on sales of dental products will be negligible, as the government’s new programmes are only repackaging existing spending.

Indeed, government expenditure on dental and oral health care services will actually decrease in the current financial year, with new measures not being implemented until 2015.

The dental service industry in your country is growing by 2.5 per cent. Are Australian dentists becoming lazy investors?

That’s an unfair characterisation. The dental profession in Australia has a strong track record of pioneering new technologies. The dental profession in Australia is an early adopter of new technologies and this continues to drive sales in key areas. The uptake of products that utilise CAD/CAM technology is a good example of Australian dentistry picking up, and some might say leading, the trend.

One of ADIA’s roles is to work with regulators such as the Therapeutic Goods Administration to ensure that dentists and the broader community have access to new products and technologies within a reasonable time frame.

You have identified one of the primary areas of concern as the regulation of new dental devices in Australia. What, in your opinion, are the deficits of the current regulatory environment? What do you want to achieve in that respect?

Trevor: Australia represents only 2 per cent of the global market for dental products and more than 95 per cent of what is used in the marketplace. In this context, Australian dental product suppliers face considerable compliance costs associated with local technical and regulatory standards.

In Australia and internationally, ADIA has taken the lead in advocating the “approved once, available anywhere” approach to dental product regulation. Over the next two years, ADIA will support the efforts of the Australian and New Zealand governments to establish the proposed Australian and New Zealand Therapeutic Products Agency.

At a global level, ADIA recognises and supports the important work of the International Medical Device Regulators Forum, which is working towards regulatory harmonisation and convergence at a global level.

One of ADIA’s roles is to provide member businesses with the platform to establish and strengthen their relationship with key customer and client groups.

However, our focus is on more than just trade shows. The strategic plan endorsed by the ADIA board sets a clear direction for the future. As an organisation, we are investing in the personnel and infrastructure to provide member businesses with the tools to grow.

Whether it’s verifiable sales data or programmes to upskill the industry’s workforce, we are firmly committed to engaging with our member businesses to assist them in understanding and influencing changes to the commercial, technical and regulatory environment to help them to achieve their objectives.

Thank you very much for this interview.

“Australian dental product suppliers face considerable compliance costs”
Singapore fund buys major stake in Straumann

SINGAPORE/BASEL, Switzerland: The Government of Singapore Investment Corporation (GIC) has increased its stake in a dental company. As reported in late November, the government-run fund recently bought 10 per cent of shares from Dr Thomas Straumann, the major shareholder of the Swiss implant manufacturer of the same name.

With the transaction, estimated to be worth more than CHF167 million (US$179 million), GIC now holds 14 per cent of the company’s shares and is the second largest shareholder after Straumann himself. Dr Rudolf Maag, former Straumann chairperson and another major shareholder, holds 11 per cent.

GIC first bought into Straumann in October this year. In July 2011, it also acquired more than 5 per cent of shares in Nobel Biocare, a major competitor of Straumann based in Zurich. Worldwide, the sovereign wealth fund based in Singapore is currently managing assets of approx. US$100 billion, according to business news provider Bloomberg.

Straumann, who served as chairperson from 1990 to 2002, commented in a statement that the reallocation of his share in the company was necessary owing to the current economic circumstances; however, he agreed not to reduce his remaining stake of 17 per cent for one year.

Owing to decreasing demand for high-cost dental treatments in Europe, the company recently announced the reduction of its global workforce by 6 per cent from 2013 in an effort to improve profit margins.

Ivoclar Vivadent establishes subsidiary

SHANGHAI, China: Owing to the fast-growing dental market in China, the restorative materials specialist Ivoclar Vivadent has expanded its Shanghai office into a new subsidiary. The Shanghai office, established in the 1990s, is now the company’s seventh local division in the Asia Pacific region.

The new subsidiary, introduced during DenTech China, was established in order to provide better product services to Chinese dental professionals and to meet the challenge of long-term growth in China.

According to the company, an estimated 13 per cent growth is expected for the dental market in Asia Pacific in 2012 and the dental market in the region will account for 19 per cent of the global dental market by then. Given this development, a subsidiary in China emerged as an important strategic investment, the company stated.

Founded as a manufacturer of ceramic teeth about 85 years ago, Ivoclar Vivadent today owns subsidiaries and sales offices with more than 2,600 employees in 22 countries, including Australia, India, New Zealand, Japan and now China. It is one of the largest international dental companies and ranks third in the global market.

Ivoclar Vivadent products, including ceramic systems, furnaces, resin teeth, composites and adhesives, are shipped to about 120 countries worldwide, according to the company.
HAMBURG, Germany: The German dental manufacturer DMG Dental has announced that its successful Luxatemp brand of bis-acrylic composites has been on the market now for 20 years. Launched in 1992, it was the first temporary crown and bridge material that did not require time-consuming hand mixing. It is currently available in three different versions that are indicated not only for temporary crowns and bridges, but also for inlays, onlays, veneers as well as long-term temporaries.

Recently awarded the highest possible rating of five stars by the independent test lab REALITY, the company’s latest product Luxatemp Star is said to offer top performance with regard to break resistance and flexural strength, while ensuring dependable stability and durability. Long-term shade stability has also been optimised, according to DMG. Moreover, Luxatemp Star is claimed to attain its final hardness in just five minutes, making it faster than its predecessor Luxatemp Fluorescence, which was acclaimed as Top Provisional Material and Best of the Best by Dental Advisor in February 2011.

The company currently provides more information about Luxatemp on its website at www.dmg-dental.com/20-years. The Luxatemp product family is available in markets worldwide through a network of more than 70 dealers.

Singapore corp. starts distribution of laser tech

SINGAPORE: Healthcare Solutions & Services (HSSC) in Singapore has taken over the distribution of laser technology for both hard- and soft-tissue dental treatment by Syneron Dental Lasers in Israel. The LiteTouch Er:YAG laser, featuring a fibre-free laser delivery system, will be officially launched in the city-state in February next year.

Negotiations between Syneron and HSSC regarding a distribution deal already began in October, said HSSC business manager Tommy Ng, commenting on the recent transaction. According to him, the agreement with Syneron is part of a larger expansion plan that will also see the company entering the market for medical devices.

HSSC has been distributing tooth replacements and biomaterials from Southern Implants and Centrix, among other dental companies, since mid-2011. Besides the scheduled soft launch early next year, Ng said that it will also have the LiteTouch on display at an upcoming laser symposium in Singapore later in 2013.

“Singapore is a mature and sophisticated dental market,” he said. “With a high average number of GDPs, dentists are capable of investing in high-technology equipment, while the future pool of well-educated dental patients are more receptive to treatment using dental lasers.”

Syneron Dental Lasers introduced its latest LiteTouch model at this year’s congress of the World Federation for Laser Dentistry in Barcelona, Spain. It has been on dental markets since 2007.
Handpiece manufacturer NSK aims for global leadership

TOKYO, Japan: It is no secret that the years since the global financial crisis have not been very kind to companies in Japan. First, the recession slowed business investments significantly down, then the negative effects of last year’s tsunami and the massive destruction it wrought almost brought the world’s third largest economy to a halt.

For NSK, one of the country’s largest dental manufacturers, troubles in the home market are its least concern because the company conducts most of its business elsewhere. According to president and CEO Eiichi Nakanishi, with whom Dental Tribune International recently had the opportunity to speak at the company’s headquarters in Tochigi, more than 80 per cent of the company’s revenues are now generated by its operations outside of Japan.

In the last three years, NSK has been performing particularly well in mature markets such as Europe and North America, where it boosted its presence with the opening of its new headquarters near Chicago last year, despite unfavourable conditions such as high market saturation and the ongoing decline of the yen against the dollar.

Since 2009, Nakanishi has also seen his company regaining its former market shares in Asia through centralised distribution and after-sales support offered by its new subsidiary in Singapore. Another significant contributor has been NSK’s European office in Germany, which accounted for almost one third of the 22.2 billion yen ($278 million) in sales the company reported in 2011.

“That is why economic conditions in our home market have little or no impact on our overall business. We really think globally,” Nakanishi explains.

According to the 48-year-old, who has run the company since 2000, one of the major reasons for NSK’s strong market position, even in established markets, is its dedication to innovation and quality, combined with the excellent after-sales service it is able to provide to customers in almost every country except North Korea. But this hasn’t always been the case.

Founded in the 1930s, the company had a rough start and operations were completely halted during World War II. Since the production of dental handpieces resumed in 1951, however, the company has grown extensively and now employs more than 700 people in its Japanese offices in Tochigi and Tokyo.

NSK asserts it pays close attention to the needs of its customers, a philosophy that has resulted in products such as the S-max pico, which was developed solely for the treatment of patients with smaller mouths, such as children.

Moving into other markets is conceivable but unlikely to happen anytime soon, Nakanishi says. Even though his company has begun to enter new areas in the last decade with the launch of instruments such as ultrasonic scalers and polishers, its core business will remain dental handpieces and other small-motor equipment.

“When it comes to handpieces, we have produced more innovations than our competitors,” he remarks. “Our goal is to become the No. 1 company worldwide in this segment.”

“NSK still produces most of the precision parts in-house, which, according to Nakanishi, is one of the reasons that dentists now identify the company with high-quality products.”

One of NSK’s recent innovations, launched at last year’s IDS in Cologne, for example, is the Ti-Max Z series, a durable premium handpiece that is claimed to have the smallest heads and necks in the industry, as well as an exceptionally low noise level and virtually no vibration.

The Surgic Pro surgical micro-motor has also received much interest, particularly by dental implant surgeons, and is now distributed alongside systems by major implant manufacturers.

NSK still manufactures most of the precision parts in-house. The company’s headquarters in Tochigi, Japan.
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The restorative work involved the fabrication of six veneers for the anterior teeth. In challenging cases, the dental laboratory technician begins the restorative procedure by carefully analysing all of the available data. This includes photographs of the initial situation,临床 images, and a fabrication registration.

The facial photograph of the patient alone provides important information. Based on this image, we can carefully analyse the tooth shape and the facial parameters (morphology) and gain significant insight into how to approach the creation of an “esthetic smile” (Fig. 1). In our case, the intra-oral images showed that the anterior and posterior teeth had been severely abraded (Fig. 2). The patient asked for these flares to be removed and for the natural shape of his teeth to be restored. After in-depth consultation with his dentist, it was decided to restore the affected teeth with all-ceramic veneers according to minimally invasive principles.

As a preliminary step, orthodontic treatment was performed to move teeth #11, #12, #21, #22 and #25 towards the vestibular aspect and thus achieve a less traumatizing function. Then the vestibular surfaces of the maxillary anterior teeth were then prepared (Fig. 3).

We choose to produce the veneers with pressed ceramic, which then proceeded to build up according to the individual requirements. I first fabricated restorations (IPS Empress, Ivoclar Vivadent) in this way in 1992 and have been using this technique for many years.1

IPS Empress 2 was my ceramic of choice but I now use IPS e.max Press (lithium disilicate glass-ceramic) exclusively for this purpose. In my opinion, this solution is ideal for fabricating restorations of this kind.

Although the conventional layering technique using refractory models produces highly aesthetic results, it is very time-consuming and demanding. The restoration has to be fired several times without the possibility of monitoring its colour in the process. With the technique I use, however, a framework is pressed and then the incisal third is cut back. Thereafter, the dental technician “novelty” has to apply the veneering ceramic. This procedure takes less time, and the outcome is easier to control.

The layering scheme

In anterior restorations in particular, it is important to match the colour saturation and the brightness carefully. In most cases, however, several ceramic layers are required to achieve the appropriate blend. In the present minimally prepared case, very little space was available for the veneer. I guess that every dental technician is familiar with this scenario. In order to achieve a true-to-nature result nonetheless, a detailed layering scheme is indispensable (Fig. 4).

In this case, I used two different IPS e.max Ceram Dentin materials (Ivoclar Vivadent): A5 and A2, as well as a lighter Dentin B1 mixed with 1/2 Opal Effect 4 (OE 4) to increase the value. As we all know, the incisal third of natural teeth is translucent. Therefore, in this part of the restoration, the Dentin material has to be desaturated with a translucent neutral material. The Opal Effect 1 (OE 1) material is indispensable owing to its opalescent properties. It has a translucent blue appearance in reflected light and an amber tint in transmitted light. Consequently, we placed some OE 1 in the proximal corners and along the incisal edges.

Natural teeth often have small areas on the edges that absorb light. In the present case, these areas were imitated with a violet material (Opal Effect violet) and 1/2 OE 1. I have given this mixture the descriptive name of “absorption material”. As only limited space was available for the enamel material, I decided to use the bright OE 4. The layering technique is described in detail in my book Tricks and Hints.2

Pressed and... The IPS e.max Press ingots are ideal for fabricating the frameworks of layered veneers. In the present case, I used a medium-opacity (MO) 1 ingot (framework thickness of 0.6/0.5 mm; Fig. 5). The colour and opacity of these ingots is optimal. The material masks the colour of the prepared tooth satisfactorily, but it is not excessively opaque.

The broad range of IPS e.max ingots provides a suitable solution for almost any clinical situation and owing to the choice of various levels of opacity, translucency, brightness and fluorescence, even difficult cases can be treated successfully.

1. MO 1 ingots mask the colour of the prepared tooth, but do not look opaque. We use these ingots for almost 70 per cent of the crowns we fabricate.

2. MO 0 ingots are a good alternative for fabricating lighter crowns, or this mixture in which the patients want bright white teeth.

5. Low-translucency (LT) press ingots are suitable for clinical situations in which the prepared tooth has a light colour. Owing to their translucent properties, these materials allow the preparation shade to shine through, which imparts a certain depth to the appearance of the restoration. It is not to use LT ingots in the fabrication of individual teeth, as their shade after seating is difficult to anticipate.
4. In addition, several more fluorescent press ingots are available today, including IPS e.max Press Impulse Opal 1 and 2, as well as Impulse Value 1, 2, and 3. We use these materials according to the case.

...then layered

After the pressing procedure, the frameworks were reduced to 0.5 mm and coated with a translucent layer (Fig. 5). Foundation firing at 750 °C preceded the layering procedure. After firing, the IPS e.max Ceram Essence materials were applied (Fig. 6).

These working steps demand considerable expertise from the dental technician. As the framework (MO 1 ingot) in the present case masked strong colours, we had to ensure adequate saturation of the cervical third. However, the space for the layering materials was limited.

The Essence materials provide a good alternative in such cases. These materials are fired at 725 °C. In the case described, the subsequent layers were completed in one firing cycle (Fig. 7). This economical procedure considerably reduces the workload and heightens the efficiency of the laboratory. The thickness of the veneers was 0.5 mm in the middle third and 0.3 mm in the cervical third. The clinician deliberately prepared the incisal third of the teeth to allow sufficient space for building up the ceramic layers and for creating all of the fine details required for a natural-looking restoration.

Morphological design

In order to recreate the morphology of the teeth faithfully, we marked the contours and angle characteristics on the veneers with a bicoloured wax crayon (Figs. 8–10). This guided us in reproducing the tooth shapes efficiently and precisely. The use of this method, which I have taught for 18 years, allows one to achieve high-quality results.

We have a collection of several thousand natural teeth at our disposal. On the basis of these samples, we can assess the shape and surface texture of teeth. The completed restorations were 0.75 mm thick in the middle third. However, the space for building up the ceramic layers was limited (Fig. 11).

Despite the limited space available, we managed to recreate the tooth colour as planned. Figure 12 shows the high saturation of the restoration in the cervical third and the enhanced luminosity in the middle third. The translucent effects (absorption areas) and reflective dentine areas in the veneers are clearly discernible. When we examined the restorations on the model, we obtained a preliminary impression of what they would look like after their adhesive placement (Fig. 11).

We carefully polished the lifelike surface. The layering material was remarkably thin. Nevertheless, we managed to produce highly aesthetic anterior restorations (Fig. 14).

Furthermore, after several weeks in situ, the restoration showed excellent results in terms of the periodontal considerations (Figs. 15 & 16). Undoubtedly, this successful outcome is also due to the close collaboration of Dr Stéfan Koubi from Marseille, who was the clinician who treated this case. Together we were able to restore the patient’s smile with tooth shapes corresponding to the patient’s personality and tooth morphology (Fig. 17).

Conclusion

In cases such as the one described, veneers represent an excellent treatment option. We were able to achieve outstanding results with restorations involving pressed frameworks, which were subsequently built up with ceramic layers. This method is much easier than the conventional layering technique but provides optimum quality.

Acknowledgement

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