Most dental professionals would agree that the use of composites and adhesive materials have changed the dental practice. But as technology develops and results in new materials, futuristic possibilities arise that could change medicine. Could dental materials one day be more than a Band-Aid for the tooth? Glass ionomers release fluoride to strengthen the health of the teeth, but perhaps future materials will go far beyond, using the platelet-rich fibrin that is mostly used in implant cases to encourage regrowth for decayed teeth. One day, dental filler materials could even produce antibiotics for the oral cavity, as one professional I interviewed suggested. Before we get too far ahead of ourselves, let's review where dental restorative materials have been, where they're heading now and where they could end up in the future.

A shift from rudimentary materials to resin composites and glass ionomers

Rudimentary restorative materials, such as amalgams, have been commonly used since the 1800s, although their use has been documented to go as far back as A.D. 659, when they were used during the Tang Dynasty in China. To the relief of dental professionals everywhere, amalgam restorations met some competition when resin composites arrived on the scene in the 1960s.
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Most dental professionals would agree that the use of composites and adhesive materials have changed the dental practice. But as technology develops and results in new materials, futuristic possibilities arise that could change medicine. Could dental materials one day be more than a Band-Aid for the tooth?

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To the relief of dental professionals everywhere, amalgam restorations met some competition when resin composites arrived on the scene in the 1960s. ... See dental materials, page 42

Get a feel for the material

The handling properties of the composite material will affect the proficiency of the fill. And, quality adaptation and contour of the composite may be more important than slight improvements in its mechanical properties. Some materials have a creamy consistency (low viscosity) and others have a stiffer consistency (high viscosity). Creamy materials are a little easier to spread, but stiffer materials are easier to condense and sculpt. Stickiness is undesirable, as a composite that sticks to the instrument will be difficult to condense or shape. ... See composites, page 6

THE EVOLUTION OF DENTAL MATERIALS

Examining the past, present and future of composites.

by Lauren Krzyzostaniak

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KaVo Kerr
888-883-3947
dexis.com/fs-ergo
CIRCLE RS #2

V-Posil Mono-Fast
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V-Posil Mono-Fast’s unique “optimized timing” provides up to two minutes of adjustable working time and an abbreviated 2-minute thermally activated set time. Additionally, its extremely low contact angle, exceptional tear strength and excellent elastic recovery ensure dimensional accuracy after removal of the impression. Collectively, these physical properties enable V-Posil Mono-Fast to provide consistent high-quality results with maximum precision.

VOCO America
888-658-2364
vocoamerica.com
CIRCLE RS #3

Planned® Verity CBCT scanner
The Planned Verity® CBCT scanner is a unique 3D imaging solution for orthopedic as well as head and neck imaging. The high-quality images produced by Planned Verity are said to visualize even the smallest bone structures with minimal interference. The Planmeca CALM™ motion artefact correction is now available, which is designed to eliminate the need for retakes by cancelling the effects of patient movement. In addition, the Planmeca Ultra Low Dose™ imaging protocol allows for lower patient doses.

"Why did Planned create this product?"
Hospital and imaging centers have been using Planned Verity® for orthopedic and sinus studies already for years, but there was a need to cover also basic 3D dental imaging with the same unit. With this option, users can now cover more patients with a single machine.

Planned
+358 20 7793 300
planned.com
CIRCLE RS #4
THE EVOLUTION OF DENTAL MATERIALS

Exploring the past, present and future of dental materials.

Dental restorative materials have come a long way, and the future holds untold possibilities. Here, we take a look at how these materials began, where they're heading, and what sort of impact they could have in the future on patient care.

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3 TIPS FOR SELECTING A GOOD COMPOSITE

Continued from cover... When considering a flowable composite, there are some that will spread easily, which are ideal for placing as a liner or in Class II boxes. Others hold their shape, which is helpful with Class V restorations or small repairs.

Don’t underestimate the esthetics

The polish, translucency and hues of a composite system are important for creating a restoration that will achieve patient acceptance and approval. The polish of a composite is affected by the fillers. Materials with small and homogenous filler particles (often called nano-filled or micro-filled) should achieve a higher polish than hybrid composites with larger glass fillers. As we cannot see these microscopic fillers and there is no consistency in the naming system for composites with different filler particles, observation of the composite polish is the most reliable assessment tool.

The translucency of a composite is often subtle, but it may give the composite a look of vitality. Translucency is not subtle in some of the newer bulk fill materials, which have been made more translucent to improve depth of cure. Some of these materials are too translucent and they will show through any discoloration of underlying tooth structure. For many patients, this may be unacceptable in posterior teeth. The available range of shades vary with some posterior composites systems, offering only a few basic shades to some anterior composites systems that offer a range of shades and translucencies to mimic dentin and enamel. There are some materials that possess a chameleon-effect, which allows a single shade of composite to blend into many different shades.

A good demonstration of this property is a VITA shade guide with multiple shade tabs restored with the same shade of composite.

Look for the important properties

Deciphering the technical profile of a composite material can be overwhelming, but there are several key properties on which to focus. The shrinkage of dental composites remains a primary concern. Shrinkage had typically been reported as the percent volume of the material that shrinks when polymerized with a curing light (percent volumetric shrinkage).

A more useful method to report shrinkage is shrinkage stress, which is a measure of the forces a bonded composite applies to walls of the tooth preparation. There are some composites that undergo a high volumetric shrinkage when cured on the benchtop, but lower their shrinkage stress by relaxing their bonds within the walls of a cavity preparation. The durability of the composite can be predicted through its flexural strength and wear resistance. Flexural strength testing involves all three components of force, including tensile, compressive and shear. Wear testing is an applied test that will put the material through mechanical loads of mastication.

Finally, depth of cure should be compared when considering a bulk fill composite. A bulk fill composite should only be placed in increments equal to its reported depth of cure. Keep in mind, there are no universally accepted threshold values for any property, but a new material should be compared with other successful materials. And it is more valuable to evaluate independent data than internal data.

[Nathaniel C. Lawson, DMD, PhD]
DPR Advisory Board member and director, division of biomaterials at UAB School of Dentistry

Editor’s Note

The Nov. 2017 issue of DPR included an article entitled “How to safely and easily remove tooth decay using a laser” by Dr. Gerard Kugel. After publication, it became known that the article contained promotional content additions that were neither written nor approved by Dr. Kugel. These promotional views were not that of the author. We regret the error.

[Our Mission Statement]
Dental Products Report—known for its trusted new product information—delivers a sharp focus on high-tech innovations and their implementation as well as how cutting-edge technologies are transforming practices. DPR helps dentists future-proof their practices and position themselves to deliver the best dentistry possible to benefit both their patients and their practices. We are committed to delivering unbiased, quality content.
You know it as SureFil SDR flow+ material. Now with a simpler name, SDR flow+ bulk fill flowable delivers all the pluses of the world’s most thoroughly researched and clinically proven bulk fill composite. Higher wear resistance. More versatility, including approval for Class III and V restorations in addition to serving as a base in Class II restorations. Increased radiopacity to help prevent misdiagnosis through better X-ray visualization. Because there’s only one path to true leadership: Start first and stay first.

Visit class2restorations.com to learn more about SDR flow+ bulk fill flowable. The leader from the beginning.
5 injection techniques you need to know

Anesthesia failure is a common problem, but these techniques demonstrate great success. Read more: http://bit.ly/DentalInjections

Death and the dental practice

No one likes to think about it, but do you have a plan in place if the unexpected happens? Read more: http://bit.ly/DentalDeath

3 secrets they don’t teach in dental school

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**PRODUCT WATCH**

**DIGITAL RADIOGRAPHY**

**ScanX Swift View**

The ScanX Swift View is the latest in the View series of digital radiography systems from Air Techniques. This Wi-Fi-enabled system offers a full color touchscreen and is designed to be capable of digitizing all intraoral formats, sizes 0–4. Setting a new standard for digital X-rays, ScanX Swift View’s digital filters are said to ensure reliable diagnostics with a theoretical resolution of 40 LP/mm, 2000 dpi.

Air Techniques

800-AIR-TECH | airttechniques.com

CIRCLE RS #9

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**PHOTO CONTRASTORS**

**Flexipalette**

The Flexipalette set is an assortment of unique and innovative photo contrastors intended for intraoral photography. The contrastors are made out of a bendable copper sheet 100-percent molded with medical-grade silicone rubber, and they are said to be latex-free, safe and hypoallergenic. The Flexipalette set is designed to be completely opaque and reflection-free, making it perfect for a black background when taking color matching photos.

Smile Line USA

877-755-6868 | smilelineusa.com

CIRCLE RS #10

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**TOOTHBRUSH**

**Amabrush**

Amabrush is a revolutionary hands-free, automatic toothbrush that’s designed to simultaneously brush all teeth in just 10 seconds. Simply press a button and the Amabrush creates a variety of vibrations that oscillate with different resonant frequencies to gently yet effectively clean each quadrant. Toothpaste capsules are placed in the handpiece and a built-in mechanism foams and automatically delivers the ideal amount of toothpaste to the mouthpiece.

Amabrush

amabrush.com

CIRCLE RS #11

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**HANDPIECE TUBING**

**White Silk**

White Silk handpiece tubing is now the standard instrument tubing on ASI’s dental systems. Designed to be lighter, softer and smoother, the new tubing is said to provide cling-free use. When a handpiece is removed from the holder, it’s said to glide smoothly across neighboring tubing. The silky smooth texture of the tubing is engineered to reduce the risk of tangling or accidentally dislodging other handpieces.

ASI Dental

844-880-3636 | asidental.com

CIRCLE RS #12
To meet the special needs of chairside milling dentists, VITA introduced the VITA SMART.FIRE, a fast, efficient and compact firing unit for chairside restorations, including the crystallization, glaze, stain and corrective firing of all common chairside materials. Featuring an intuitive user interface, materials may be selected in one simple step. Customizable material-specific programs are already pre-installed.

VITA North America
800-828-3839 | vitanorthamerica.com
CIRCLE RS #13

Ivory® ReLeaf™, a hands-free HVE suction device, is designed to assist with evacuation, retraction and maintaining a dry field during an array of dental and hygiene procedures. Unlike saliva ejectors, Ivory ReLeaf is a hands-free and high-volume suction device. It’s engineered to work in all four quadrants with ergonomic comfort and a full view of the oral cavity without the need to be moved around.

Kulzer
800-431-1785 | kulzerus.com
CIRCLE RS #14

Designed with periodontist Scott Froum, DDS, the Slade Blade is designed to allow for more efficient removal of granulation tissue in post-extraction sockets thanks to a unique serrated edge and high-quality steel blade. PDT’s line of Slade Blades is said to give periodontists a more precise blade that’s sized more accurately for sockets, allowing for cleaner extractions and more effective implant placements.

Paradise Dental Technologies (PDT Inc.)
800-240-9895 | pdtdental.com/sladeblade
CIRCLE RS #15

Lightweight and cost effective, the Dynamic Disposables Snapeez Face Shields are designed to provide extremely comfortable coverage. The self-sealing face shields prevent splatter exposure and meet OSHA bloodborne pathogens PPE guidelines. The full and half shields utilize Ultra-Clear™ Technology that’s engineered to prevent fogging, glare and static electric buildup.

Palmero Healthcare
800-344-6424 | palmerohealth.com
CIRCLE RS #16
Choosing the right composite for your patients

[ compiled by Kristen Mott ]

Now more than ever, patients are requesting highly esthetic restorations. And thanks to the latest dental composites available, that’s possible to achieve on a daily basis. Available in a variety of shades, modern composites feature superb handling properties, making it easier for clinicians to shape and sculpt the material. Many also mimic the translucency and opacity of natural dentition, leading to highly esthetic and long-lasting results. Here, we’ve compiled some of the top materials on the market. Take a look at the next few pages and you may just find a composite that’s perfect for your practice and your patients.
COMFORT BITE SPLINTS, SO YOUR PATIENTS CAN WAKE UP WITH A SMILE!

The Comfort H/S™ Bite Splint is a dependable nightguard option that safeguards patients’ teeth from damage caused by nighttime bruxism and clenching. With its 1mm soft polyurethane inner layer, this durable solution protects dentition while providing patients with unbelievable comfort.

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- 2.5mm occlusal thickness
- Hard copolyester outer layer
- Available colors: blue, green, pink, & clear

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1-800-722-1391
www.burdettedental.com
info@burdettedental.com
BRILLIANT EverGlow
- A universal submicron hybrid composite featuring easy polishability, gloss retention, easy handling and exceptional blending properties.
- Its filler technology is engineered to provide an ideal combination of long-lasting esthetics, handling convenience and mechanical strength.
- BRILLIANT EverGlow is said to show an exceptionally smooth surface and satin shine directly after placing the filling, allowing highly esthetic restorations to be performed in minimal time.

COLTENE
330-916-8800 | everglow.coltene.com
CIRCLE RS #19

Constic
- A light-cured, self-etching, self-adhesive, radiopaque flowable restorative composite.
- Indicated for a diverse set of clinical indications, from restorations and under-fillings to pit and fissure sealing.
- Constic is said to offer etching, bonding and filling in a single step, helping to reduce errors and save time.
- When compared to other self-adhesive flowable composites, Constic is said to provide one of the strongest bonds to tooth structure.

DMG America
800-662-6383 | dmg-america.com
CIRCLE RS #20

TPH Spectra® ST Universal Composite Restorative
- A composite material that’s said to have an excellent chameleon effect that helps dentists more accurately match tooth shade, addressing variables such as extrinsic staining, lighting and shade availability.
- Made with SphereTEC™ filler technology.
- The material is designed to be easy to handle, enable faster finishing and polish to an excellent, stain-resistant luster.

Dentsply Sirona
844-848-0137 | dentsplysirona.com
CIRCLE RS #21

Ti-Core Flow+
- Features the superior qualities of both a core build-up material and luting cement to provide a highly versatile, economical, multi-use composite.
- The material is said to have increased radiopacity and easier flowability.
- Ti-Core Flow+ reinforced core materials are said to be the only patented titanium and lanthanide reinforced composite material that matches the strength of dentin.

Essential Dental Systems
800-223-5394 | edsdental.com
CIRCLE RS #22

G-ænial Sculpt®
- Features a unique surface treatment of nano-inorganic fillers and high-density, uniformly dispersed barium glass particles.
- This technology is said to provide unsurpassed levels of wear resistance and low shrinkage stress combined with a self-polishing effect.
- It can be used in Class I-V restorations without slumping or sticking to instruments.

GC America
800-323-7063 | gcamerica.com
CIRCLE RS #23

Natural Elegance® Flowable Composite and Nano Hybrid Flowable Composite
- Both designed for use in Class III and Class V composites.
- Natural Elegance® Flowable Composite is a light-cure, low-viscosity composite that features a 64% filled formulation.
- Natural Elegance® Nano Hybrid Flowable Composite features low viscosity and is said to be easy to place and finish.

Henry Schein
800-DS-SHEIN | henryschein.com
CIRCLE RS #24
Invisible to Everyone But You

TempoCem®ID
It Stands Out by Blending In

New from the makers of Luxatemp, TempoCemID delivers standout performance by blending in. This esthetic, temporary cement is invisible when you want it to be, yet detectable when you need it to be. Formulated for optimal transparency, TempoCemID will never impact the shade of your provisional, making it an ideal choice for both posterior and anterior restorations alike. Unlike other esthetic temporary cements, excess TempoCemID is readily detectable (even below the gum line) and can often be removed in one piece. Non-eugenol TempoCemID flows and mixes easily, doesn’t stick to instruments and is indicated for temporaries lasting up to six months. See your esthetic worries vanish before your eyes with TempoCemID.

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Reflectys Composite
• A universal anterior and posterior nanohybrid light-cured composite material.
• The material is said to have a polishing capacity superior than usual composites and the esthetic results after polishing are guaranteed.
• Reflectys contains a nanoparticle-enriched formula that’s designed to give the composite outstanding mechanical resistance for lasting restorations.

Itena
516-246-2743 | itena-na.com
CIRCLE RS #25

Tetric® Evo line of composites
• The Tetric Evo line consists of four composites: Tetric EvoCeram®, Tetric EvoFlow®, Tetric EvoCeram® Bulk Fill and Tetric EvoFlow® Bulk Fill.
• Individually and in combination, these composites are said to offer the opportunity to handpick the best combinable solutions for clinicians’ direct restorative needs.
• All four are designed to afford high esthetics, extended working time, a single 10-second curing cycle and high radiopacity for a highly predictable placement.

Ivoclar Vivadent
800-533-6825 | ivoclarvivadent.us/tetricevoline
CIRCLE RS #26

CLEARFIL MAJESTY™ ES Flow
• This new light-cure, universal flowable composite is designed to be used for all direct restorations for all cavity classes.
• It’s said to be exceptionally easy to polish by wiping the cured resin with an ethanol-soaked gauze or cotton roll.
• Engineered to contain special submicron fillers that are treated with a proprietary silane coupling agent, giving the product superior mechanical properties.

Kuraray America
800-423-9762 | kuraray.us.com
CIRCLE RS #27

ACTIVA BioACTIVE-RESTORATIVE
• Said to be the first esthetic bioactive composite with an ionic resin matrix, a shock-absorbing resin component, and bioactive fillers that mimic the physical and chemical properties of natural teeth.
• The dual-cure composite is designed to be used for all classes of restorations, including bulk filling.
• It’s said to contain a patented rubberized resin that absorbs shock and stress and resists fracture and chipping, eliminating the brittleness found in traditional materials.

Pulpdent
800-343-4342 | pulpdent.com
CIRCLE RS #28

Beautifil II LS
• A bioactive composite indicated for all cavity classes (I-V).
• The composite is said to provide general practitioners with the means to reduce volumetric shrinkage and shrinkage stress while creating predictable and functional esthetics.
• Incorporates Shofu’s proprietary Giomer technology, which is clinically proven in 8- and 13-year recall studies to release and recharge fluoride to help inhibit plaque formation and establish a stable pH in the oral environment.

Shofu Dental Corporation
800-827-4638 | shofu.com
CIRCLE RS #29

Estelite Bulk Fill Flow
• The material is said to require no additional composites for outstanding esthetics and strength, offering faster and simpler single-increment restorations up to 4 mm.
• Utilizing Estelite Spherical Filler technology, the composite is designed to provide more natural looking bulk fill restorations via higher shade matching ability, opacity and polishability than other products.
• Features 52 percent higher compressive strength than the leading flowable bulk fill and high flexural strength.

Tokuyama Dental America
877-378-3548 | estelitebulkfill.com
CIRCLE RS #30
**Mosaic™ Universal Composite**
- Mosaic’s well-balanced nanohybrid formula is designed to produce restorations of the highest quality.
- Its smooth, pliable consistency is said to allow for total control, and once the material is shaped, it won’t flow or slump out of place.
- Mosaic is said to provide predictable shade matching, as it was designed to emulate the same levels of translucency and opacity seen in natural dentition.

*Ultradent*  
800-552-5512 | ultradent.com  
CIRCLE RS #31

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**Vita VM® LC**
- Designed for the extraoral fabrication of fixed and removable restorations.
- These light-curing, microparticle veneering composites are said to be easy to use, cost effective, and yield natural, esthetic results.
- The composite is engineered to mimic the reproduction of the fluorescence and opalescence of natural teeth, creating an esthetic restoration that’s virtually indistinguishable from those of ceramics.

*VITA North America*  
800-828-3839 | vitanorthamerica.com  
CIRCLE RS #32

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**3M™ Filtek™ One Bulk Fill Restorative**
- A simple one-step placement restorative material designed for the posterior.
- Its unique optical properties and increased opacity are said to allow for the simplicity of one-step placement without compromising esthetic results.
- With excellent adaptation and handling, it’s designed to be placed in one fast, easy increment up to 5 mm with no need for layering or expensive dispensing devices.

*3M*  
800-634-2249 | 3m.com/filtkone  
CIRCLE RS #33

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**REVEAL® HD Bulk**
- A light-cured bulk fill restorative composite optimized for simpler and faster posterior restorations.
- Designed to combine appropriate handling, depth of cure and polishability, allowing clinicians to provide patients with functional and aesthetic composites.
- With its HD Filler Technology, REVEAL HD Bulk is said to allow for layering increments in 5-6 mm due to its predictable depth of cure.

*BISCO*  
800-247-3368 | bisco.com  
CIRCLE RS #34

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**Encore® D/C**
- A dual-cure, core buildup composite that’s designed to let clinicians build up just the coronal core or fabricate a composite post and core that bonds the post, tooth and core together.
- The dual-cure formula is said to speed up procedures and ensure a complete cure of all materials, regardless of depth or placement of the final restoration.
- Designed to ensure optimal comfort for sensitive patients, the material is available in a MiniMix® unit-dose delivery that eliminates waste.

*Centrix Inc.*  
800-235-5862 | centrixdental.com  
CIRCLE RS #35
Start with CEREC®

CEREC is a fully scalable system that lets you start with digital impressioning and evolve into chairside CAD/CAM when you’re ready, or you can take advantage of the full chairside capabilities from the beginning—you decide what’s right for you.

With flexible options that complement the way you work, CEREC can produce anything from single-unit crowns to implant abutments and surgical guides, and more. You’ll also enjoy access to the world’s largest community of CEREC dentists, providing an unprecedented level of peer-to-peer support, mentorship, and educational opportunities—something no other system can provide.

startwithcerec.com
CEREC for full chairside CAD/CAM

Interested? Circle Product Card No. 38
Using the i-CAT™ FLX to improve treatment acceptance

How one dentist uses this CBCT system as a tool to educate his patients. [by Lauren Krzyzostanik]

Christopher Hoffpauir, DDS, is a relatively new dentist. Perhaps that explains his zeal for what he does. He calls himself an oral physician and likens his diagnostics with his early technology to Columbus’s poorly understood route to the New World.

“Before I had the i-CAT, it’s like the earth was flat,” he explains.

That’s because his panoramic X-ray just wasn’t doing the job his cone beam CT does now—but he had no idea.

“There’s an old saying, “You don’t know what you’ve been missing until you find it,’” he says.

Dr. Hoffpauir uses the i-CAT™ FLX as a screening device and also as a tool to help with treatment planning and case acceptance. He’s even caught a few cases that turned out to be cancer by identifying anomalies and sending patients for biopsies.

“We use it for airway assessment and as a tool to help the patient understand,” he says. “A lot of the airway has to do with the intraoral and extraoral signs that you see on examination, but you can’t give the patient an idea of the severity of the problem until they’re shown the airway. When they can see that the airway is constricted, they understand better that they may really have a problem.”

Implants

Dr. Hoffpauir also uses the i-CAT FLX for implant dentistry, from assessing the site to placing the implant through guided or freehand surgery.

“It saves me a lot of time,” he says. “Whenever I’m planning an implant case, I’ll pull up a 3D skull and tell the patient, ‘This is you and this is the tooth you’re missing.’ I’ll tell them that if someone’s not using this technology to place their implant, they could damage their nerves here. I’ll show them how to highlight their nerves in the skull, and I’ll measure 2 mm from it and say, ‘This is the safe distance, so we want to make sure your implant sits in this space with as much bone around it as possible and in a position where we can put a tooth on it.’ And then I’ll drop an implant in and I’ll say, ‘This is the right implant for you.’”

He’ll then show the patient a 3D printout of his or her jaw and do a virtual surgery on it, paired with a 3D-printed guide to show him or her that the appropriate degrees of angulation and the correct depth are marked.

Saying, “We’re going to be able to keep you really safe and we’ll make sure that everything’s going to work before we place the implant,” is really powerful in selling implants to people and convincing them to do the treatment,” he says. “You’re showing them this skull and how you’re going to place the implant and all the things that go into the consideration.”

The i-CAT FLX also helps Dr. Hoffpauir with simpler cases.

“With Tx STUDIO, you can actually go in and place a crown on that implant, then turn it around and say, ‘This is what your tooth is going to look like,’” he says. “Not only does it truly keep your patients safe, but it’s an amazing tool for education and for getting patients to move to ‘yes’ when it comes to treatment.

“Sales is a dirty word in dentistry, but the truth is that no matter what your skills are or how many CE courses you’ve done or how many implants you’ve placed, if you’re not able to get your patient to say ‘yes,’ then you’re no good to them,” he adds. “You can’t help them solve their problems.”

Time savings

The i-CAT FLX saves Dr. Hoffpauir a lot of time without sacrificing the level of care he wants to uphold.

“When I first started placing implants, I used a panoramic to measure the bone,” he says. “I would get a model and shave it down to see where the bone was, then I would try to make a guide based on that to show where the restoration needed to go within the emergence profile, and I’d spend money on wax-ups from the lab to ensure I was doing everything I possibly could.

“My i-CAT FLX really brings home all that data in an easy-to-read and easy-to-use way. It really elevates what you can do as a practitioner.”

The CBCT also ensures a more accurate image.

Dr. Hoffpauir says that using a panoramic X-ray to place implants led to a lot of uncertainty. “Panoramics are notorious for being inaccurate, particularly in the anterior segments,” he says.

That uncertainty led him to refer a lot of implant cases. “I just didn’t have the data that I needed,” he says.

Sleep apnea

A CBCT also offers certain data patients need—the images that help them fully understand their health.

“We’d already been screening patients for a while and trying to send them out to sleep studies, and only about half the patients would go,” Dr. Hoffpauir says. “I just thought, ‘Man, if only I had a better tool to do this.’”

One day, he was talking to his Henry Schein rep, who told him that an i-CAT would be the solution.

“Imagine being able to show the patient what’s wrong,” his rep told him. “Imagine being certain when you’re placing implants, knowing that what you’re doing is what’s right and what’s best for the patient.”

Dr. Hoffpauir was intrigued, so he started doing research on CBCTs.

“I decided I needed one, so I started reading online about what different people say about their CBCTs and what the companies said about them,” he says. “When it came down to it, the i-CAT has the best image you could possibly get. It has an image that I can use for airway. It has multiple low-dose radiation options, including Quick-Scan+. It really startled me to find out that a basic scan on the i-CAT FLX was going to be delivering less radiation to my patients than my panoramic was. I think that was the straw that broke the camel’s back that made me move to i-CAT.”

For Dr. Hoffpauir and his patients, using the i-CAT has been a game changer.

“There’s a lot of denial in disease diagnosis, but whenever a patient can see on the screen what it looks like and how constricted their airway is, they start really listening and it starts that conversation,” he says. “It’s just a great tool for educating them.”
Making 3D printing more convenient

How one dental lab is using multiple Formlabs 3D printers to improve workflows as well as outcomes.

[ compiled by Renee Knight ]

Until about a year ago, the team members at the Idaho-based CMR Dental Lab outsourced all their 3D printing. That worked well for a while, but as the lab continued to grow and as 3D printing became a larger part of their workflow, they decided it was time to invest in their own units.

After doing some research, it became clear the Formlabs Form 2 high-precision dental 3D printer was the best fit for the lab, CMR founder Matt Roberts says. He has since purchased five systems and couldn’t be happier with the customer service he’s received from the company as well as with the results the printers provide.

We recently talked with Roberts about how his lab, which specializes in large cosmetic cases, benefits from using Formlabs 3D printers.

Why did you decide to invest in 3D printers from Formlabs?

The cost to value ratio is good and they print accurately. I like the small size and by having more than one unit, I can print batches several times a day. I can do multiple cycles rather than just one load or cycle over a 24-hour period. And there are a multitude of materials I can use with the printers.

I’m a small- to medium-sized lab, so spending $80,000 on two or three different printers was more investment than I wanted to make. The printers from Formlabs fill what we were looking for nicely. They offer a good price point and the quality we receive is really nice.

How are you using the 3D printers in your lab?

Digital impressions have become more common among our dental clients. To make a physical model from the impressions, we use the 3D printing model materials and dyes. That has worked out really well. The printers work in conjunction with our 3Shape software seamlessly, letting us fabricate models for cases with digital impressions.

When doing the diagnostic design for cases to pre-plan treatment, the output of the initial digital design can be printed as well, rather than creating a diagnostic wax-up. We can print a combined model of the digital design that looks clean and nice to patients. It polishes up nicely and, with a little hand finishing, looks realistic. In addition to that, we’re also starting to make bite splints. Although we’re early into that process, it looks promising.

What benefits have the printers offered your lab?

Now that we have the printers on site, it’s much more convenient. We can print much more quickly.

As digital fabrication moves forward, 3D printing can be used for a multitude of different applications in dentistry. We can print surgical guides for implant placement. After doing 3D planning based on CAT scans, we can print models of the restorations. We can print combination models that combine digital design with existing dentition. We can print orthodontic appliances. There’s just an endless array of things that we can do.

For example, a lot of times when a patient is finishing up orthodontic treatment, we take photos of that patient and then take a 3D scan while the brackets are still on and the wires are still in place. Then, we put a 3D image on top of the facial photography and place teeth to analyze what would look best for the patient. We then change the translucency of the image and look at the existing teeth underneath to see if they’re in the right place. If they’re not, we can print something so the orthodontist understands where the teeth need to be moved based on the facial esthetic values. That’s just one of the many things we’re using the printer for.

This really is a nice cost to value printer, and a nice entry-level system into 3D printing.

How do you see this technology benefiting your lab in the future?

Everything comes in via email with digital impressions or via UPS if there’s a physical model. The Formlabs printers are going to give us a new market niche of doing digital design and then enabling clients to print on site in their own office.

We can do the design here and then point it back at a Formlabs printer setup, and let a bite splint or surgical guide print on site. This will eliminate shipping costs and save time, making it possible for patients to start treatment even sooner. We’re not using that yet because we don’t have any clients with a Formlabs printer in their office, but it’s coming. We’ve talked to several clients about the possibility, and many are excited by the thought of printing diagnostic models and bite splints in their own office.
Dentists know that one of the most important things in their day-to-day life is gaining and obtaining their patients’ trust. Patients must fully trust that the doctor and other healthcare professionals will provide their desired end result, and they must also feel secure in knowing that their health is in good hands.

Maintaining a sanitary space in which to work is a priority for every dental practice, but it goes far beyond instrument management. While instruments must be sterilized, the surfaces clinicians work on and around must be sanitized, too.

Hu-Friedy, a company that specializes in instrument management systems, hand hygiene products and cleaning products for every aspect of the dental office, is now coming out with a surface disinfectant that will work on practically every surface in the operatory, from plastics to stainless steel.

“Hu-Friedy has been a key player in the infection prevention market with high-quality products,” says Senior Product Manager of IMS and Infection Prevention at Hu-Friedy Holly Way. “While we continue to expand in the infection prevention categories, adding surface disinfectants is a natural next step. It also goes hand in hand to help expand our current infection prevention offering.”

AdvantaClear Surface Disinfectant is designed to clean and disinfect dental surfaces while working fast and effectively to kill a broad spectrum of disease-causing microorganisms in just one minute. The disinfectant is said to be compatible with a wide range of surfaces, including acrylic, aluminum, stainless steel, plastics and more.

AdvantaClear kills a broad spectrum of disease-causing microorganisms in one minute, and it is designed to be compatible with a wide range of surfaces, such as acrylic, aluminum, brass, copper, stainless steel, chrome and plastic, Way says.

“It’s a convenient, ready-to-use, intermediate-level disinfectant designed to clean and disinfect surfaces while working fast and effectively to kill a broad spectrum of disease-causing microorganisms, including HIV-1, HBV, HCV, MRSA, tuberculosis, the influenza A virus (H1N1), salmonella enterica, ESBL, E. coli and other pathogens,” she says.

And because it’s fragrance free, it eliminates odor-causing bacteria without masking it with another scent.

Since it kills most bacteria, fungi and viruses within a minute, it doesn’t take any extra time to help protect your team and your patients. And its low alcohol formula comes with two major benefits: It disinfects without affixing blood and soil to surfaces, and it cleans bright plastics without the cloudy residue that high-alcohol formulas leave behind.

“As an industry leader in infection prevention, Hu-Friedy is excited to expand our infection prevention offerings while introducing a surface disinfectant that we stand behind,” Way says.

AdvantaClear Surface Disinfectant became available for purchase in March of this year.
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The benefits of Nupro White Varnish

Why one hygiene mentor prefers using this varnish from Dentsply Sirona over others. [compiled by Renee Knight]

During the 17 years she’s spent in the dental industry, hygiene mentor Sarah Punnett has tried just about every varnish on the market. About a year ago, she began using the one her patients at Great Expressions Dental Centers like the most: Nupro White Varnish from Dentsply Sirona. It tastes better and it’s easier to apply, making the experience more pleasant for her patients while also saving her time.

Here's what hygiene mentor Sarah Punnett says about Nupro White Varnish

Patients really like it. It's not sticky and it stays in place. As a hygienist, I want something that’s really quick and easy to use. With Nupro White Varnish, it literally just takes a quick sweep across the front and back of the teeth to apply. Patients close and swallow and they’re out the door. They don’t have to stand at the sink to rinse and spit, and there’s a shorter wear time so they can quickly resume eating and drinking.

I've used varnishes for six or seven years, and while patients like them better than rinses, they aren't happy if the varnish I use makes their teeth look yellow or if it ends up peeling and clumping. Nupro White Varnish doesn't do any of that. Patients also want something that tastes good, and they seem to like Nupro White Varnish's Raspberry version the most. No matter the flavor, this varnish shows up white on their teeth and doesn’t leave their teeth feeling sticky like some of the other varnishes do.

“With Nupro White Varnish, it literally just takes a quick sweep across the front and back of the teeth to apply. Patients close and swallow and they’re out the door.”

Nupro White Varnish is portable, which is a feature I like. You don’t need cups or a sink, so you can take it with you to mobile clinics or to schools. It’s also really easy to place. I have an assistant who helps me in the office, and it’s so user friendly that it doesn’t matter which one of us applies it. You just wet the brush, apply and you’re done. It’s easy to implement and easy to work into a busy schedule. The amounts are just right, too. With other varnishes, you often end up with a lot left over.

Before we invested in Nupro White Varnish, we had to carry many different types of fluoride for our different types of patients. This varnish enabled us to get rid of everything else. It’s good for the little ones because they don’t ingest as much or have to hold it in their mouths and spit, and it’s good for adults because it’s safe and easy to use around restored teeth and crowns. We don’t have to worry about patient age or if they’ll be able to follow instructions or if they have restorations. This varnish fits everybody.

I also get better patient compliance. A lot more patients say “yes” because they don’t have to alter the way they go about their day afterward. Their teeth look and feel normal and they can eat right away.

Nupro White Varnish offers plenty of benefits for patients and hygienists. Patients like the flavor and the look of this varnish, and it feels better in their mouth. It’s easy to apply and user friendly. You might want to keep different flavors on hand, but as far as the delivery system, you have one and it covers everybody. Using this varnish really is a no-brainer.
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The benefits of a strong relationship

How leveraging key partnerships can benefit dental practitioners.

by ROBERT ELSENPETER

When choosing a vendor, some doctors look to strike the best balance between price, vendor reputation and solid, consistent customer support. Dr. Brian Harris, DDS – a cosmetic dentist operating three clinics in Arizona – believes he’s found that balance in his relationship with KaVo Kerr.

KaVo Kerr, a single-source provider for the dental community, is Dr. Harris’s go-to source for all his practice needs. Because KaVo Kerr offers solutions for endodontics, restoratives, treatment units, infection prevention, imaging, and more, KaVo Kerr can provide comprehensive solutions to their customers across multiple platforms — an attribute which Dr. Harris appreciates. “There are many benefits from working with one supplier. Economies of scale, convenience, inventory management, less training and less relationships to manage,” Dr. Harris says. “And those few key relationships are extremely influential in my practice.”

A solid relationship

Over the years, Dr. Harris has had the opportunity to work with many different dental companies. The greatest attractor to KaVo Kerr has been the relationship they have forged together. He says that they aren’t just selling products and equipment – they provide resources.

“The biggest thing for me is the relationship factor,” he says. “I’ve worked with several different companies and tried different pieces of equipment and had different sales reps, but it is how I am treated by the sales rep and the company they represent. I truly feel my KaVo Kerr reps are valued partners and critical to my success. They are there to advise me on the latest trends and products in dentistry and they will go above and beyond and bring me patient-focused solutions. It’s about what’s best for the patient, which is aligned with my values.”

Because he has developed such strong relationships, they have become trusted partners. An example of that connection, he says, was the exceptional service he received when buying new, top-of-the-line operatory treatment units.

“When they delivered the treatment units, they made sure that somebody was there all day to make sure things went smoothly,” Dr. Harris says. “They flew in a trainer to train me on the use of the treatment unit and get it set up for my personal preferences and workflow. They made sure I was completely comfortable using it before they left. The team was committed to having me experience all of the efficiencies and benefits this technology offered. They made sure that everything went smoothly. It just made me feel like they truly were looking out for me and making sure that I wasn’t inconvenienced in any way at all.”

It isn’t just the big-ticket items where he sees that level of service.

“When I bought their new Harmonize composite system, I already had a ton of composite from a different system I was using,” he remembers. “And they took it all in on trade. This removed any barriers for me and allowed me to try a new product that I felt offered superior performance. That benefits my patients and that’s what is important to me.”

Quality products and equipment

While a good relationship with the vendor is essential, the products and equipment have to be equally good.

“It does help that KaVo Kerr has some of the best products on the market,” Dr. Harris says. “It is easy to buy with confidence knowing they offer top-of-the-line consumables and equipment. That brings me peace of mind.”

He observes that, when compared to others, KaVo Kerr’s products stand out for both their quality and innovation.

“I really like SonicFill for posterior composites,” he mentions. “It’s really the only thing like it on the market, as far as bulk fill goes because of how the sonic energy changes the state of the composite from packable to flowable and back. In dentistry, when a new composite comes out, people think, ‘A composite is a composite.’ However, when they launch a new product, they are game changers. On the equipment side, KaVo has a reputation for excellence and precision engineering. I am really confident using their products.”

There are many reasons why a doctor would select given products or equipment. Some may embrace quality; others, ease of use; while still others may be attracted to price. For Dr. Harris, there isn’t just one attractor. “It’s a solid mix of all of the above,” he says. “They have some of the best products out there. They’re great quality products, but they’re also cost-effective. They’re not the cheapest products out there, but they’re not the most expensive.”

KaVo Kerr offers solutions and products from multiple categories, ranging from infection control to high-end treatment units. Because they offer solutions from a broad range of products and equipment, they can be a comprehensive, one-stop vendor. And when the doctor has to deal
with only one supplier, the relationships are stronger and a high level of trust can be achieved. As a result, clinicians realize savings in both time and money, ultimately leading to greater efficiency and convenience.

“I just have to deal with one rep, really,” Dr. Harris says. “Because they are all under one umbrella, all of my needs are met. For example, if I need a new X-ray sensor, I can still go to my consumables rep, Jen who can talk to Diane, my intraoral imaging rep, so everybody’s connected. And they know all the products we are using and how they integrate. Because they work together, it simplifies the buying process and simplifies my day. I don’t have to deal with meeting multiple reps from multiple companies.”

Since KaVo Kerr has more than 225 years of global experience, Dr. Harris trusts that he can rely on their products, equipment and service.

“It made it easy transitioning to one source for my practice needs. I looked at a bonding agent and I said, ‘I’m already using this,’” he says. “The same held true for a number of other products. They make well-known and respected products, which gives me confidence in their full product offering.”

Dr. Harris continues, “Buying from one source also offers other benefits you might not immediately think of. I can manage my inventory better, I simplify my ordering process, I can keep my staff trained on the products we use and I have one company to call for anything. Like most dentists, I don’t have a lot of spare time on my hands. I want to practice dentistry, not manage multiple vendor relationships. Simplification and convenience rank high in value-added benefits.”

**Collaboration**
Collaboration, Dr. Harris says, is a huge bonus for his practice’s efficiency. Turning to a trusted partner for assistance or a recommendation, Dr. Harris has been able to solve problems with the help of his KaVo Kerr representative.

“I had an issue a few years back where I was starting to get sensitivity with some all-ceramic crowns,” he remembers. “So, I called my rep to get her opinion. Although I wasn’t using her product, she looked into the issue for me and shared what she had learned. She brought in documentation on the subject and offered a new product sample for me to try. She said, ‘A lot of doctors are using OptiBond XTR because it minimizes sensitivity without compromising bond strength.’

“What impressed me is that she did research, came up with the solution and then brought in a sample. She also didn’t discount the competitor’s product. She knew it was a good bonding agent, but her product could address the sensitivity issue. Her motivation wasn’t selling me a new product, it was finding a better, patient-focused solution. That, to me, builds trust. We were talking resin cements as well, and she said, ‘Hey, have you experienced issues with cement cleanup?’ Have you tried the new NX3? It’s substantially different. Here’s some research to support it, and here’s a sample. Give it a try and let us know how you feel.’”

There is a saying: You don’t know what you don’t know. And it was a case like that where Dr. Harris was able to benefit from the experience and knowledge of his KaVo Kerr rep.

“KaVo Kerr reps are cross-trained and well educated on the different product categories they represent. They’re also trained on competitors’ products so that when they compare and contrast products, they can speak about strengths and limitations for their products as well as others.”

Ultimately, Dr. Harris wants to give his patients the best care possible. Because of his positive relationship with KaVo Kerr, along with the quality of its products, the benefits are passed along to his patients.

“Because we’ve streamlined our products, it’s less information my team has to understand,” he says. “Because it is simplified, my team understands it better, and if my team understands it better, there’s less chance for errors. It’s simplified things for me and my team; in turn, that benefits the patient too.”

**Reasons to choose**
For those considering moving to a single source for their practice needs, Dr. Harris believes KaVo Kerr’s products and services are hard to beat.

“As dentists, the goal is to stay on the cutting edge and to always be using the latest and greatest because that’s what makes us a better dentist,” Dr. Harris says. “My recommendation for switching and referring them to a KaVo Kerr rep would be the fact that the company reps are well-trained. They have a really good knowledge of the industry. There is peace of mind for the dentist knowing that they’ll get the best for their patient in using the latest and greatest materials.

“Having one source for consumables, equipment and service is the one of the best ways to streamline your practice,” he continues. “And when you can do that, it improves efficiencies in many aspects. Other industries utilize this concept; it just makes sense for the dental industry too.”

Turning to one supplier for all of the practice’s needs helps doctors save a precious commodity—time. By utilizing a vendor like KaVo Kerr, clinicians benefit from simplicity, efficiency, quality products and, ultimately, time savings.

Dr. Harris has been able to forge a solid relationship with his KaVo Kerr representatives.

“The ability to work closely with them has proven to be a benefit to me, my practice and my patients.”

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CaviWipes contain convenient, durable, non-woven, nonabrasive disposable towlettes pre-saturated with CaviCide surface disinfectant decontaminant cleaner.
The benefits of TheraCem® from BISCO

How one dentist uses this cement to reduce patient sensitivity and increase office efficiency.

[ compiled by Terri Lively ]

DR. SAM HALABO, DMD, WHO HAS A private dental practice just 10 minutes south of downtown San Diego, started using TheraCem® from BISCO in January 2017. He says he was drawn to this self-adhesive resin cement because of its bioactivity. Dr. Halabo shares his experience with using TheraCem and how this resin cement has reduced sensitivity for his patients and increased efficiency for his practice.

What do you like best about the product? How does it compare to others on the market? TheraCem has many great features, including calcium release and promoting apatite formation. There was an IADR study done, showing it allows for dentin formation and bioactivity. It means it can help the tooth to heal itself. It can help with sensitivity and inhibit bacterial growth. It can help with many different aspects of the tooth.

The majority of products on the market in this category —self-adhesive resin cements — do not have these features. Therefore, this cement does give us a great advantage when using it over others.

What have been the results or patient responses? The results have been excellent. I have had a decrease in sensitivity when cementing crowns and I have had zero patient responses because the only time you hear from patients is if there is pain or sensitivity. The best patient response is no response at all, which means that everything is working.

What benefits to your practice have you seen since using TheraCem? One of the great benefits has been the reduced amount of sensitivity. It is an incredibly simple cement to use in that it eliminates many of the steps that can cause sensitivity such as etching, using an adhesive, etc. In addition, this cement is extremely easy to clean up, which is a benefit that every dentist seeks.

Why would you recommend this product to your colleagues? Many of my colleagues probably use self-adhesive resin cements in their repertoire. This cement would be great for them to use in that it would reduce sensitivity, increase efficiency and provide high bond strength. Also, it would give them a very easy cement to clean up that is working for them in terms of bioactivity (apatite formation and calcium release) after the restoration has been cemented.

TheraCem® self-adhesive resin cement is designed to provide a consistent and strong cementation of indirect restorations. It produces a durable bond to zirconia and most substrates with no priming or etching required. TheraCem is indicated for luting bridges, crowns, inlays, onlays and posts. It has a unique feature of continuous calcium and fluoride release, and research shows it transitions from acidic to alkaline pH in minutes.

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To learn more about BISCO products and innovations, check out DPR’s interview with Dr. Rolando Nunez, DDS, MSc, of BISCO Research and Development. Go to http://bit.ly/BISCOInterview to read the interview.
Kent W. Stapley, DMD, has practiced general dentistry in Mesa, Arizona, for the past 20 years. He and his staff were already using DentiMax software in his dental office, and he recently made the decision to move to the cloud. Here, Dr. Stapley explains why he made the switch and how it has improved accessibility and security within his office.

Why did you choose to go to the cloud?
It made a lot of sense to move to the cloud. I was interested in the security of my data as well as the continuity of my business.

Once I learned that cloud software was available, I knew there could be a situation where I would kick myself for not looking into the cloud. A large concern for me was hardware failure. I’ve known dentists who’ve had problems with their software and images and have lost data [from their server] and that’s a nightmare.

Not only are they missing all of their data and have a lost or messed-up schedule, but they also have a responsibility to their patients.

Part of the nightmare would be letting down patients. It’s a dentist’s responsibility to keep their data safe and secure. There’s a trust between the patient and dentist. You don’t want to let the patient down by being irresponsible with their records.

Another reason I went to the cloud was to allow employees to work from home when they need to. It’s a pretty nice thing to be able to do. It works well. It’s all out there on the cloud when you need to access your data.

Why did you go with DentiMax on the cloud? What has been your experience?
My staff and I were already using DentiMax software and liking it, so it was a logical move to give it a go.

My experience moving to the cloud wasn’t that different than using a local network. Really the only change was I was not going to the local network for information but was logging in from the internet. Once everyone got used to that little shift, we would log in online and all the information was there.

As far as the online imaging is concerned, the X-rays upload onto the cloud quickly and integrate well with the software. We can send X-ray images with insurance claims electronically, which makes it easy for the front desk. We also can send them to specialists faster. The front office has just loved being able to do that and are happy with the soft-
“...I’ve had peace of mind knowing DentiMax has confident backups both local and off site. They have multiple redundant backups and separate locations for storing information so I’m not worried about losing my data.”

DentiMax is unique because they offer a complete system with sensors included. How has working with one company benefited your practice? Working with one company for practice management software and sensors helps keep the costs down. You don’t have redundant costs on top of each other for maintaining software from multiple companies. It ends up costing less and being less complicated on the books and in the office.

What recommendations and tips would you give to a new provider who’s trying to decide whether his/her practice should go to cloud or on-premises software? If you have confidence in your internet, then you should be confident in DentiMax on the cloud.

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How to simplify patient communication

How one dental office is using Solutionreach to improve patient communication as well as practice efficiencies.

[ compiled by Renee Knight ]

The team at Northside Dental in Santa Fe, New Mexico, is always looking for ways to improve communication with their patients—which is why they decided to invest in Solutionreach”.

Solutionreach helps them better educate their patients about the importance of maintaining their oral health and enables them to deliver the highest level of patient care, Service Coordinator Aurora Linehan says. Through automated appointment reminders, patient education tools and a variety of other features, the software streamlines patient communication and makes the office more efficient. Linehan describes it as like having another front office person who is there to make sure nothing ever falls through the cracks.

We recently spoke with Linehan about the many benefits Solutionreach offers both the practice and the practice’s patients.

What Solutionreach features do you like best?

We use just about all the features in the software, but I do have my favorites. For instance, we have a large Spanish-speaking population, and Solutionreach allows us to customize the reminders to be in Spanish. We also enjoy Conversations, which is a feature that lets us text any number and lets any number text our office phone number. We can communicate with patients about appointment times, health history and any questions we have for them or any questions they have for us. All the information shared is protected, giving us another way to communicate with patients while staying HIPAA compliant.

How has Solutionreach benefited your practice?

Solutionreach has benefited us in many ways. It has made our office more efficient and helps us focus more on what’s going on in the office instead of calling to remind patients of appointments. Solutionreach emails, calls or texts every patient automatically to remind them of an appointment, and it automatically sends continuing care reminders to patients who are past due. This allows us to focus more on treatment and the patients who are here in the office, rather than making phone calls.

How much time does Solutionreach save you each day?

Considering I have to call from multiple lists, it saves me quite a bit of time. I’d say two to three hours a day at least. I’m able to use that time to do other tasks, such as charting, preparing for future appointments and making other phone calls.

How does Solutionreach benefit the patient?

Our patients love having different options to communicate with us because they all have busy lives. Most don’t have time to call the office, or they can’t be on the telephone at work. They like to email us or text us directly to schedule an appointment or ask questions.

There’s also an online scheduling feature that lets patients pick a day and time for their appointment without going back and forth with us. With this feature, they can view past or future appointments or pay bills online.

A few patients have mentioned they really like the text reminders. They don’t realize it’s automated, so they feel like we’re personally reaching out to remind them of their appointment. They like the personal touch.

We can customize reminders to go out as often as patients would like to be reminded. They’ll get one reminder at least two days before the appointment, so they’ll have time to call and make a change or reply to the message directly to reschedule if they need to, allowing us to fix the schedule. We have found that patients show up more often when they get more constant reminders through their communication method of choice.

How does Solutionreach help improve patient education?

We love to make sure our patients are educated about everything going on in their mouths so that they can make better, more informed decisions concerning their dental health. Through Solutionreach, we can send newsletters to specific patients based on what’s in their treatment plan and educate them more on why it’s a good idea to get the recommended procedure done, or just broaden their dental knowledge overall. Most patients don’t know too much about how the mouth affects the rest of the body, and providing information through a newsletter helps with that.

Why would you encourage other offices to invest in Solutionreach as well?

It will help them improve communication with their patients and provide patient education in different ways. It also boosts productivity and office efficiencies.

Also, the customer service with Solutionreach has been on point. Everyone we’ve communicated with has been very thorough, knowledgeable, kind and willing to help. Solutionreach provides community blogs, webinars and educational sites, so there are places we can go to ask questions and get answers. The learning tools and discussion boards have been really helpful.

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Using the 3M™ Fast Release Varnish in your practice

The varnish is designed for patients who may require a shorter treatment time.

[compiled by Kristen Mott]

Information provided by 3M.

3M™ launched a fast-releasing fluoride varnish in new flavors and a unit dose tray to give clinicians another option for their patients’ needs. 3M’s new varnish is designed to complement 3M™ Vanish™ 5% Sodium Fluoride White Varnish, which has reportedly been the No. 1 fluoride varnish on the market for 10 years.

FAST-ACTING: The 3M Fast Release Varnish is engineered to release most of its fluoride in the first two hours, allowing dental professionals to deliver quick protection to patients who may not always follow their patient care instructions.

UNIQUE: With 22,600 ppm sodium fluoride, a virtually invisible smooth coating and popular, fun flavors, including caramel, strawberry and mint, the 3M Fast Release Varnish is said to be an excellent choice for patients who may require a shorter treatment time.

EFFECTIVE: The varnish reportedly relieves hypersensitivity and treats exposed dentin and root surface sensitivity. It is designed to be virtually clear and does not change the appearance of ceramic or metal orthodontic brackets.

ARE YOU READY TO APPLY THIS TECHNOLOGY IN YOUR PRACTICE?

3M Oral Care
3m.com/preventivecare
800-634-2249
CIRCLE RS #65
Utilizing the PrograMill One in your practice

The PrograMill One is said to combine industrial manufacturing quality with a modern design.

[ compiled by Nicholas Hamm ]

Information provided by Ivoclar Vivadent.

The PrograMill One is reportedly the world’s smallest 5-axis milling machine. The machine is wireless and app-enabled, giving the user flexibility. It also reportedly offers a short processing time.

It is indicated for a variety of options, including inlays, onlays, veneers, partial crowns, crowns and bridges up to 45 mm block length.

5-AXIS TURN MILLING: Ivoclar Vivadent’s 5-axis turn-milling technology means the block being processed moves around the tool. This reportedly keeps machining times short while reducing tool wear, and it results in outstanding surface quality and an excellent fit of restorations. Additionally, depending on the materials and indications, individual validated machining strategies are used, which is said to reduce rework to a minimum.

AUTOMATED: A camera integrated within the mill automatically records all information on materials and tools. This reportedly makes using different materials easy and loading very convenient. In addition, material, shade and translucency are automatically read in by means of the Data Matrix Code, which is printed on the block. The OSD (Optical Status Display) visually informs the user about the current operating status.

APP-ENABLED: The mill is wireless and can be controlled from anywhere within the laboratory through an app. The app keeps the user informed of the machine’s status. It features order management, which allows the user to view the order list and current processing status, and it control the 5-axis block changer. The app also allows users to see the tool status and have control of the 8-position tool changer. Finally, the app gives the user an overview of machine data, the machine’s status and the filter unit’s status.

Ivoclar Vivadent
ivoclarvivadent.com
800-533-6825
CIRCLE RS #49

ARE YOU READY TO APPLY THIS TECHNOLOGY IN YOUR PRACTICE?
Using the Shofu Block/Disk HC in your practice

The hybrid materials are said to have excellent physical and mechanical attributes.

[ compiled by Kristen Mott ]

Information provided by Shofu Dental Corporation.

Shofu Dental Corporation unveiled Blocks and Disks HC, proprietary hybrid ceramic materials for CAD/CAM-based restorative dentistry with CEREC. Available in multiple shades and translucencies, the optical properties of Blocks and Disks HC reportedly resemble the translucency and fluorescence of natural teeth. The bilayered blocks are modeled after the layering of natural teeth with a chromatic opaque dentin layer and a translucent layer of enamel, allowing clinicians to effortlessly achieve consistent and accurate shade matching while reducing chairside time and treatment cost.

DURABLE: The Blocks and Disks HC have reportedly been proven to show high resistance to staining and maintain their original shade and gloss over time.

ESTHETIC: Dentition-like light transmission is said to make this hybrid ceramic material ideal for the production of highly esthetic anterior restorations. Thanks to its physical properties, it can also be used to create durable posterior restorations, absorbing occlusal stress and providing high edge stability.

STRONG: With superior flexural strength and low flexural modulus, the material has excellent capability to diffuse stress, making it an ideal alternative to lithium dislocate or zirconia restorations.

Shofu Dental Corporation
Shofu.com
800-827-4638
CIRCLE RS #50
Using BrioShine™ Feather Lite™ Composite & Ceramic Single-Use Polishers in your practice

The polishers are reportedly ideal for the universal polishing and finishing of ceramic and composite materials.

[ compiled by Kristen Mott ]

Information provided by Brasseler USA.

Brasseler USA® recently expanded its family of Brio™ single-use diamond, carbide and polishing instruments with the introduction of BrioShine™ Feather Lite™ Composite & Ceramic Single-Use Polishers. The polishers are said to be ideal for the universal polishing and finishing of ceramic and composite materials with predictable results.

ADAPTABLE: The polishers are engineered to adapt to most tooth surfaces yet are said to be durable enough to last through multiple restorations.

EFFICIENT: Compared to most polishing systems, these are designed to eliminate the time spent polishing by reducing the number of steps required for optimal results.

ECONOMICAL: Single-use polishers are said to lessen overhead costs by reducing dispensing labor while completely eliminating the time-consuming sterilization process. Each BrioShine Feather Lite Composite & Ceramic Single-Use Polisher is color-coded and features unique markings, providing the user with easy identification for application.●
Incorporating the Alpha Air 6 into your practice

Offering six levels of magnification, the Alpha Air 6 is designed to revolutionize the way a dental microscope performs and operates.

[compiled by Kristen Mott]

Information provided by Seiler Instrument.

The design and functionality of the Alpha Air 6 is said to revolutionize the way a dental microscope performs and operates. The dental microscope is reportedly exceptionally designed for superior maneuverability and performance. Along with its superior optics, the Alpha Air 6 is engineered to provide benefits in the areas of ergonomics and video capture.

**COMFORTABLE:** With the Alpha Air 6, dentists can maintain an upright working position while keeping visual contact with a patient. The microscope’s design is said to allow dentists to make a concerted effort to avoid the long-term effects that come along with working in an uncomfortable position.

**UNIQUE:** Special to the industry, the Alpha Air 6 allows for up to six steps of magnification, which improves the overall quality of work dentists are performing. The microscope reportedly also boasts some of the brightest LED illumination in the industry at 150,000 lux.

**LONG-LASTING:** The Alpha Air 6 is equipped with a built-in USB port and a 12-volt power supply, allowing for more continuous use without recharging the battery. By accommodating a full HD video camera that is able to capture 4K video, dentists can better communicate with their patients and lead more productive discussions.

ARE YOU READY TO APPLY THIS TECHNOLOGY IN YOUR PRACTICE?

Seiler Instrument
seilerinst.com
800-489-2282
CIRCLE RS #52
Using EndoSafe Plus in your practice

The apical negative pressure irrigation system is engineered to be convenient to use.

[ compiled by Kristen Mott ]

Information provided by Vista Dental Products.

EndoSafe Plus is an apical negative pressure irrigation system that is designed to be more convenient to use and less expensive than alternative products. EndoSafe Plus is engineered to be lightweight, easy to use and portable. It is also cordless and battery operated, enabling it to be easily moved between operatories.

**FUNCTIONAL:** EndoSafe Plus can reportedly be used for simultaneous irrigation and evacuation. Irrigating solutions are designed to be delivered via a soft, collapsible bellow that easily conforms to the access cavity. Three flow-rate settings are engineered to provide a consistent exchange of active endodontic solutions and flushing of debris. Solution and debris are then evacuated apically by means of a flexible tip capable of navigating tricky curved canals.

**SAFE:** The system is said to eliminate the potential for developing a vapor lock by pulling solutions to the critical last few millimeters of the canal. Safe, negative pressure delivery reportedly minimizes the risk of apical extrusion and the potential for a sodium hypochlorite accident.

**FLEXIBLE:** The device features quick-connect, 20-mL reservoirs that can be filled with any medication, including NaOCl. Dentists can choose from three flow rates and have the ability to start and stop irrigation on the handpiece. The system also comes with 10 disposable EndoSafe Negative Pressure Tips that can be attached to either a high-speed or low-speed suction valve.
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As dentistry continues to immerse itself in new technologies, Catapult Education members were asked to evaluate the new compact NLZ electric micromotor handpiece system from NSK Dental. Yes, electrics are in full growth mode in our operatories, so the question to our group was: does this raise the bar in electrics? The answer among our reviewers was absolutely.

To start, we all love the quieter electrics for sure, and the continued trend is even less noise. Ninety percent of the evaluators noted that the NSK handpiece was quieter than other handpieces and I found this to be a much quieter than any other system I’ve used. When I connected a different manufacturer’s handpiece (which the unit’s design accommodates), it was considerably louder than the NSK handpiece. Patients hate the sound of the drill and a less noisy handpiece should make “drilling” a far less negative experience. Considering that hearing loss among dentists has been found to be an ongoing problem, why bother with ear plugs when using air turbine handpieces?

The next item we evaluated was the compact size of the NSK NLZ control unit and yes, it is that small! The group loved the size and in dentistry, smaller is better. The majority of us mounted the unit beneath the bracket table and the installation was extremely easy as the control pad is separate from the main unit. The NLZ touchscreen control panel was easy and intuitive to use. Next, let’s talk about flexibility within the system. With NLZ, the system takes electrics to the next level because in this unit one has the ability to have a high-speed electric option for doing preparations, slow speed for all its uses, and then by just pressing a button, one can switch to a reciprocative movement for a wide range of endodontic procedures if desired. With so many endodontic systems moving to a reciprocative movement, we thought this was a wonderful feature. Ultimately it puts three of dentistry’s most used preparation technologies in one place — all run by one control pad.

The NLZ is a new micromotor system that makes this unique technology possible. This results in a more powerful rotation, which is necessary when working with today’s restorative materials such as e.max and zirconia. Rather than pushing an air-driven bur through such materials, electrics, with their high torque, cut through these materials meticulously with so much less effort. I found this...
system to have even more torque than other electrics. One great advantage of electrics is that they don’t work via turbines and as a result, these harder materials that take their toll on air-driven turbines are a nonissue with electrics. Add in the two-year bumper-to-bumper warranty and enough is said on this issue.

I remember when I got my first fiber optic handpiece and though I was elated with the light, I wanted more illumination (don’t we all?). The fiber optic light is extremely bright — in fact, the brightest I have evaluated — and makes it easier when working in the posterior areas of the mouth. You can never have enough light! I think that makes a huge difference in delivery of care.

Lastly, a few added findings within this new electric handpiece. The NLZ has a “contra angle checking function” that eliminates the “hot handpiece.” It was developed to prevent burns via the head of the handpiece overheating. The operator is usually unaware that this is occurring. This can be caused by deterioration of the gears and/or improper maintenance.

If the NLZ handpiece is overheating during operation, the rotor automatically slows down or shuts off. I have seen this happen twice thus far and I find this function a wonderful safety feature. The handpiece is so “smart” because it can recalibrate and correct the torque during its use.

Every reviewer in this evaluation was an electric user and overwhelmingly the group loved this handpiece. One evaluator commented that the NLZ handpiece had become their go-to handpiece, and another said, “This is the best electric handpiece I have ever used!” All reviewers felt overwhelmingly confident in using the NLZ in their office and almost everyone stated they would continue to use it. For these reasons, the NLZ electric micromotor handpiece system receives the Catapult Vote of Confidence.

[ Figs. 1-3 ] Ninety percent of the Catapult Education evaluators found the NLZ handpiece to be quieter than others (Fig. 1). The compact size of the unit allows it to be mounted beneath the bracket table (Fig. 2). The electric handpiece cuts through restorative materials meticulously with less effort (Fig. 3).

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THE EVOLUTION OF DENTAL MATERIALS

How composite and restorative materials have changed and improved through the years — and what the future holds.

by Lauren Krzyzostaniak
DENTAL RESTORATIVE MATERIALS HAVE COME A LONG WAY, AND THE FUTURE HOLDS UNTOLD POSSIBILITIES. HERE, WE TAKE A LOOK AT HOW THESE MATERIALS BEGAN, WHERE THEY'RE HEADING AND WHAT SORT OF IMPACT THEY COULD HAVE IN THE FUTURE ON PATIENT CARE.

Continued from cover... There were a few kinks to work out in terms of looks and durability, and once microfilled composites came out around 20 years later, they were much more successful, but they were also technique sensitive. By the early 2000s, resin composites had been drastically improved and were suitable for long-term use in posterior restorations.

Unfortunately, the first decade of the 2000s brought little improvement to the resins that hold the fillers together, says Larry Clark, director of clinical affairs and marketing at Pulpdent.

In fact, he argues that it was only in the last eight or nine years that resins started to undergo improvements.

“Before the resins started to improve, it was kind of like cement,” Clark says. “The rain would come and wash away the cement, and you’d get pits and holes in your roads and sidewalks. Composites in the ‘70s and early ‘80s were failing like that. Now, the resins are more durable and the fillers come in all shapes, sizes and dimensions.”

One major benefit of composite resins and glass ionomers (and the combinations in between), aside from nicer looking teeth and happier patients, is that those materials have inspired innovation in the field of restorative dentistry. Today, restorative materials have evolved to be “more esthetic and wear resistant, easy to use and place, feature superior wear resistance and more accurately match natural dentition,” says Brendan Steidle, product marketing manager at GC America. “Typically, the dentist and patient want something that matches natural dentition so as not to indicate that there were any caries or damage to the tooth. So, anything that helps the restoration look more like natural teeth is something that both the dentist and the patient are going to be interested in. That’s where the industry has been going — dentists want that combination of esthetics and strength. Resin composites are able to offer both of those and blend in with the natural dentition, so it doesn’t stand out.”

The improvements made to resins in the last decade include the ability to bond to the fillers so that they don’t come out of the tooth. “After that, it’s about controlling shrinkage and being able to have less water absorption,” Clark says.

“In the last few years, smarter filler compositions have significantly impacted handling, the gloss properties and the wear resistance of the materials,” adds Melanie Dietrich, restorative business unit manager at COLTENE.

The solution to the finicky restorations of the past was twofold: to improve the physical properties of the fillers and adhesives and to identify the best techniques for use, says John Fundingsland, professional services manager at 3M Oral Care.

“Over the last decades, composites have developed immensely and are today’s material of choice in minimally invasive, direct restorative therapy,” Dietrich adds.

While there are many factors that determine the long-term health of the restoration, they are theoretically designed to last a lifetime, according to Steidle.

“Dental professionals really like resin composites because of that adaptability and esthetic,” he says. “Over time, resins tend to shrink, but technological advances in development of composites provides less polymerization shrinkage over time. So, you have better adaptation at placement, and then when you have a recall a year later or even five years later, these restorations often look as good as when they were placed.”

A trend toward simplification
Now that restorative materials have improved to be stronger and more esthetic than ever, the industry is experiencing what many call a trend toward simplification.

“If you look back to the late ’90s through the early 2000s, a lot of companies were launching comprehensive shading systems in terms of composite technology,” says Danny Vezmar, director of marketing for restorative and preventive at Dentin.

“Anything that helps the restoration look more like natural teeth is something that both the dentist and the patient are going to be interested in. That’s where the industry has been going...”

A focus on handling
Because most products available advertise esthetics, strength and clinical performance, there has also been a shift toward focusing on how the material handles in the dentist’s hands — its workability, as it’s often called.

“People would tend to have conversations like, ‘I’ve got 3 MPa higher fracture toughness than somebody next to me,’” Vezmar says. “At some point, you reach a point that it’s not clinically relevant to have those conversations anymore because everybody’s putting materials out that provide really good physical properties in terms of strength. So, there is a focus now on what’s important to the dentist when they’re applying the material: how it feels in the hands, if it’s sticky, and its adaptability to the tooth in terms of shading and manipulation.”

Since dentists can now feel comfortable with the clinical performance of most of the restorative materials on the market, Vezmar says they’re looking more into which materials feel the best to work with. And that’s something that marketing teams like Vezmar’s are trying to tap into.

“We still go through all of the physical property testing to confirm that we are where we need to be from a clinical performance perspective,” he explains. “But the conversation about the materials is shifting toward what’s important to the dentist in terms of application, how easy it is to place, if it sticks to the instrument, if it stays where it’s placed without slumping, if it can be carved easily, what the final result looks like, if it polishes nicely and maintains that polish over time, and if it avoids staining.”

Developing a new product
When developing a new product, every company we spoke to said it considered the needs of the dentist foremost.

“The one characteristic dentists want most often is esthetics,” Steidle says. Next on the list include ease of use, radiopacity, the ability...
“Materials all have unique properties, but the true test is what a material placed today will look like at a six-month recall or five years later. How does it stand up over time?”

Materials all have unique properties, but the true test is what a material placed today will look like at a six-month recall or five years later. How does it stand up over time?”

We've talked about the improvements that have been made to restorative materials so far, and the future is a lot of the same: simplifying the process and getting them to be easier to work with, more durable, more esthetic and more predictable.

Getting restorations to be better at what they already do is just half the battle. On the other side of the coin is getting them to be biofunctional — a popular topic in restorative dentistry today and one that will be highlighted at the Nordic Institute of Dental Materials meeting this summer, where Clark will be presenting his topic on bioactive materials.

“From a technical standpoint, I would anticipate continued efforts to reduce shrinkage and the resulting stress on the tooth that shrinkage causes,” Fundingsland says. “Improvement in strength could increase the indications for composites as well as their longevity. Esthetics already rival ceramics; in the future, esthetic results will be easier to attain.”

“Improvement in strength could increase the indications for composites as well as their longevity. Esthetics already rival ceramics; in the future, esthetic results will be easier to attain.”
remineralization and tooth repair over time could be a concept that you could look at in a next-generation composite. Those are some of the things on my wish list.”

five or 10 years,” says Paresh Patel, DDS, who was originally interviewed for a November 2017 piece on dental implants. “We have so many new biologics that have come on board. Certainly, mineralized freeze-dried bone or combinations of those products are everywhere. Patient-driven biologics such as PRF are very easy to produce and the cost to get those products is almost minimal at this point.”

With those products, dentists can do guided tissue and bone regeneration to either regrow or preserve bone. This has gotten a lot of people in the industry excited about the possibilities.

“Remineralization and tooth repair over time could be a concept that you could look at in a next-generation composite,” Steidle says. “Those are some of the things on my wish list.”

Not everyone sees hope in bioactive restorative materials, however.

“While we do see great use for bioactive materials in root canal sealers, we see limited potential for this technology in filling materials since releasing bioactive components might weaken the matrix of the composite, compromising its mechanical properties,” Dietrich explains.

If researchers can discover a way for PRF to regrow tissue that was lost to decay without compromising the composite, then that would drastically change restorative dentistry.

Composites and adhesives have already revolutionized the dental practice by offering a more durable and esthetic option to amalgam restorations. Perhaps in the future they will revolutionize oral healthcare and medicine as a whole. It’s possible that it won’t just be about applying a sort of Band-Aid to a decayed tooth. It won’t even be about the bioactivity of releasing calcium and phosphate ions to remineralize teeth. Instead, it will be about introducing a material that immediately allows for full functionality of the tooth again while potentially regrowing the tissue lost to decay. Imagine the implications of perfecting tissue regrowth in the neck and crown of the tooth, seeing all signs of previous decay erased by the first recall appointment. Dentists are already using PRF to seal root canals and regrow tissue. Why not extend it to the rest of the tooth? !
CREATE SMOOTH ACRYLIC SURFACES FOR RESTORATION LONGEVITY

Using Komet USA’s Denture Contouring System for acrylic contouring without the mess of traditional methods. [by Leora Walter, DDS]

WHEN MAKING CHAIRSIDE adjustments to provisionals and removable dental appliances, the surface smoothness of acrylic-resin denture material is an often overlooked or undervalued component of the procedure. The polished surface of the material directly affects the health of surrounding oral tissue; rough, unpolished appliance surfaces encourage colonization of bacteria as well as plaque accumulation, while smooth surfaces are easier to clean and subsequently demonstrate lower levels of bacterial adherence. Achieving a smooth surface is a prerequisite to ensuring a restoration’s longevity in the mouth, which further translates into decreased periodontal complications and carries susceptibility.

Research has pinpointed the threshold roughness of dental materials to be 0.2μm, meaning that anything rougher than 0.2μm shows a dramatic increase in bacterial colonization and subsequent plaque formation. When materials are polished to within 0.2μm of surface roughness, plaque accumulation is significantly reduced. In fact, surface quality or roughness depends more on the finishing and polishing procedures than on the acrylic-resin material used. The traditional method for polishing acrylic is to utilize a lathe outfitted with a wet cotton wheel and a pumice slurry. Although this method is effective, lathes are not frequently found in dental practices. Instead, doctors often turn to slow-speed, straight-nose cones paired with cotton wheels and pumice cups. This option, however, also has its drawbacks, the most prominent being the mess created by particles of pumice that tend to fly off the handpiece and land outside the work environment. Without an efficient, immediately accessible method to polish acrylic provisionals or denture bases, many dentists forego this important procedure. Omitting this step results in a provisional or denture base that has a high surface roughness and increased susceptibility to plaque retention, exposing the patient to unnecessary complications.

Komet USA’s Denture Contouring System (TD2552A) contains a selection of polishing buffs and cutters specially designed for acrylic contouring without the mess of traditional methods (Figs. 1-3). The buffs are available in coarse (9485C), medium (9485M) and fine (9485F) versions for initial polishing, polishing and high-shine polishing, respectively. A new polisher, the 9486 silicon-impregnated, nonwoven abrasive buff (Fig. 4) has been recently added to the kit and is especially effective on bite splints and bruxism appliances. Also included are the K251ACR and K79GSQ ceramic cutters (Figs. 5-6). With its ovoid shape, the H251E carbide is excellent option as well (Fig. 7). The system offers a range of options to address all acrylic-polishing needs, and it eliminates the need for an extra piece of machinery in the office. The resultant smooth surfaces minimize plaque adhesion and its sequelae.

The following illustrates a simple contouring and polishing procedure to modify a denture base.

Case presentation
Use the H251E.HP.060 carbide to roughly trim the prosthesis (Fig. 8). The ovoid shape of the bur facilitates precise modifications of the denture base.

Once the denture base has been sufficiently trimmed, pre-polish the base with the 9485C coarse abra-
AT A GLANCE

1. Coarse (9485C) polishing buff.
2. Medium (9485M) polishing buff.
3. Fine (9485F) polishing buff.
4. The 9486 silicon-impregnated, nonwoven abrasive buff.
5. The K251ACR ceramic cutter.
6. The K79GSQ ceramic cutter.
7. The H251E carbide.
8. Use the H251E.HP.060 carbide to roughly trim the prosthesis.
9. Pre-polish the base with the 9485C coarse abrasive buff.
10. Polish the base with the 9485M medium abrasive buff.
11. Complete the polishing procedure with the 9485F fine abrasive buff.

Acrylic polishing is a necessary but often overlooked procedure. Komet USA’s Denture Contouring System makes adjusting and polishing provisionals and denture bases easy and efficient.

Conclusion

Acrylic polishing is a necessary but often overlooked procedure. Komet USA’s Denture Contouring System makes adjusting and polishing provisionals and denture bases easy and efficient.

Resources


ABOUT THE AUTHOR

New York City-based prosthodontist Dr. Leora Walter completed her graduate prosthodontics and implant dentistry residency at New York Hospital Queens. She has received numerous honors, including the American Academy of Implant Dentistry Award, the Quintessence Award for Research Achievement, the NIH Fogarty International Clinical Research Scholarship, and the International Center for AIDS Care and Treatment Programs scholarship. Dr. Walter has spent time in Ethiopia teaching clinicians how to recognize the oral manifestations of HIV as well as in Peru, where she conducted extensive research into head and neck cancers. Dr. Walter has authored numerous clinical articles, and she lectures internationally on topics relating to prosthodontics as well as systemic diseases and their effects on the oral cavity. Dr. Walter is an active member of the American College of Prosthodontics, the Greater New York Academy of Prosthodontics, the American Academy of Maxillofacial Prosthodontics, the American Dental Association, the New York State Dental Association and the Queens County Dental Society.
CREATE LONG-LASTING RESTORATIONS

A look at how one practitioner created a great restoration that still maintains great esthetic quality seven years later.

[by Dr. Mitri Ghareeb, information provided by Tokuyama Dental America]
Following isolation, the teeth were cleaned for 20 seconds with a 50% sodium hypochlorite solution and then rinsed. Preps were then etched with Pulpect® 38% phosphoric acid. The etchant was removed with a vigorous 15-second water rinse. Effective rinsing must be utilized to avoid post-op sensitivity. Teeth were then primed for 20 seconds with OptiBond™ XTR primer (Kerr). Following primer, they were bonded with OptiBond™ XTR bond (Kerr) for 20 seconds and light cured for 10 seconds. The Class III preparations were filled in with A2 Premise™ Flowable (Kerr) to the level of the veneer preparation and cured for 10 seconds.

Two shades of Estelite Sigma Quick were selected for the veneer preps: A2 in the cervical and A1 in the incisal 3/4. This two-shade technique mimics more natural tooth structure and gives the tooth a more life-like appearance. It is not necessary to use multiple shades of dentin and enamel, as many composites require. The design and blending abilities of Estelite Sigma Quick are all that most teeth need to impress clinicians and patients alike. The composite was placed with a plastic filling instrument in one application to the cervical 3/4. The composite was light cured for 10 seconds. The incisal 3/4 was placed in a similar way with the FFI in two increments and light cured for 10 seconds each. Following placement of all of the restorative material, the final fills were light cured for 20 seconds each.

Most any polishing technique produces brilliant restorative shine with this material. I prefer to start out by removing the bulk excess with the same round end cylinder bur with which the teeth were prepared.

Using a paintbrush style of removing excess composite, the teeth were shaped to nearly ideal. Developmental depressions were placed with the same bur as well. In a stepwise fashion, I then proceeded to a mandrel and Moore’s disc — plastic medium grit. Embrasure forms and line angles were defined with the disc. Diamond lines left from the burs were removed, and the restorations began to look complete. Enhance® Cups (Dentsply Sirona) were implemented to begin the final polish. The entire restoration was polished with the cup and developmental depressions were further defined. High shine was finally achieved using PoGo® cups and points (Dentsply Sirona). I prefer to have the teeth be dried by the assistant prior to a final polish with these products. In the post-op photo of all six completed veneers, a transformed smile is evident.

Seven years post-op

As many patients do after life-changing events, they get lost in the shuffle of a busy practice, or fail to keep up with regular recall appointments. This case study is no different. Nearly seven years after initial placement, the patient returned for hygiene treatment.

You will notice in the untouched, seven-years-post-placement photos that the direct restorations look nearly identical to initial placement. These restorations were not re-polished or even cleaned/scaled by our hygienist at the time of photograph. The patient has enjoyed the life-transforming restorations without complication, excessive wear or any significant concern during the time away from our practice.

This case study demonstrates the longevity, beauty and reliability one can expect from this product. Unlike porcelain veneers or indirect restorations, direct composite restorations can be easily repaired, should the need arise. It is the opinion of this clinician that these restorations and this product are placed in your treatment planning decisions.

**AT A GLANCE**

1. Patient presents with severe decalcification, stain and decay following long-term orthodontic bracket wear and lack of preventive dental care. Note: Teeth #8, 9 and 10 (#6, 7 and 8 were previously restored) were restored at previous restorative visit with the same technique and materials taught in this article.

2. Even the untrained eye can see the need for treatment in these severely decalcified, stained and decayed anterior teeth. Full anterior coverage is necessary for these restorations.

3. Window type veneer preps were completed and Class III areas of decay were excavated and removed. Notice the large “apple-core” style preps that resulted.

4. Isolation allows multiple surfaces in a single tooth to be restored at one time.

5. Immediate post-op photos reveal the chameleon effect of the two-shade technique, highlighting the blend and color match of the Estelite Sigma Quick composite.

6. Following finishing and polishing, the beautiful sheen and shine of Estelite Sigma Quick is unmistakable. Notice the natural-looking tooth shade and light reflection.

7. Following gingival healing, the patient is very pleased with his transformed smile. Restorations that mimic porcelain veneers were completed with Estelite Sigma Quick direct composite.

8. Upon recall appointment seven years after original restorations were placed, the untouched restorations look nearly identical to initial placement.

9. The patient has enjoyed years of use with natural tooth look, feel and wear. Estelite Sigma Quick can be trusted to stand the test of time.

10. Notice how the composite veneers have remained intact and the untouched lingual natural tooth structure is healthy and decay free seven years post-op.

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**TECHNIQUE**

Circle RS #56
WHY CELTRA IS AN ADVANCED GLASS CERAMIC

Examining the microstructure of Celtra and how it leads to long-term clinical success.

[ by Dr. Russell Giordano ]

There are many materials to choose from for ceramic restorations. Feldspathic-based materials have been used for many years now for veneers, inlays and onlays. Mechanical properties are low, with flexural strength typically varying from 70-100 MPa. With the introduction of glass ceramics, such as lithium disilicate, mechanical properties increased greatly and indications for use have expanded to full contour restorations throughout the mouth. These materials have approximately 70 percent crystal structure composed primarily of lithium disilicate crystals (Fig. 1).

Development of glass ceramics has continued to further improve properties by refining crystal structure. The innovations in Celtra, Celtra Duo and Celtra Press (the newest pressable version of Celtra created for dental laboratories) relate back to the microstructure of this material. It is a 10 percent zirconia silicate reinforced glass ceramic. The lithium silicate material has dissolved particles of zirconia that help decrease mean crystal size down to about 1.5 microns, with even finer submicron crystals in between these larger ones (Fig. 2). In creating dental materials, we seek to find materials that resist crack growth. In general, as the crystal size decreases and content increases, the resistance to fracture increases. Hopefully, our restorations behave like natural teeth that can sustain damage but also successfully exist for years without failure. Flexural strength is only one component to consider when selecting materials. There are a number of other important properties to contemplate for a given clinical case. Fracture resistance, color stability, polishability/gloss, margin integrity and creation of a smooth “wear-kind” surface free of subsurface defects. Color stability and a chameleon effect are also very important from an esthetic standpoint. How does the Celtra fulfill these requirements? And with so many glass ceramics available, what makes the Celtra family of materials so unique?

Unique properties of Celtra materials

One of the principal concerns with using ceramic materials is their ability to resist stress in the mouth. There are a number of methods to examine this, including flexural strength, fracture toughness and failure load of actual crowns. Although Celtra is a relatively new material, there has been research examining these various areas. The mechanical properties of glass ceramics were tested using different methods according to ISO Standard 6872, fracture toughness and load to failure of maxillary incisor crowns (Table 1).

The overall conclusion from this is that the refined microstructure of Celtra appears to improve properties in all categories important to long-term clinical success. Of particular importance is toughness and load to failure of actual crowns. Although bar and disc testing are helpful in evaluation, testing of crown failure resistance as used clinically is extremely important. Celtra was very resistant to aging, indicating a good resistance to the stresses of oral activity over time.

An important issue in shade matching is the color stability upon firing of finished restorations. Often it is necessary to apply additional colorants (stains) to get the best match to the patient’s teeth adjacent to the restorations. One problem with glass ceramics, or any ceramic, is to maintain both the structure and color upon repeated firings.

Initial examination of color stability of two glass ceramics is shown in Table 2. Color is measured with a spectrophotometer to determine the values in color space: value, red-green and blue-yellow. An equation is used to determine the position in color space called ΔE. Color testing has shown that a value of ΔE of 2-4 can usually be seen by most people as a clinically obvious difference in color. The table is combined with gloss, measured of polished restorations and those subjected to prophylaxis that occurs routinely when patients come for recall to visit the hygienist. Celtra maintains the color over repeated firings.

In addition, a pressable version of Celtra has recently been introduced exclusively for laboratories called Celtra Press. Celtra Press has all the same durable and esthetically pleasing properties that Celtra Duo possesses.
Case Study

Ceramic materials are in widespread use with a myriad of choices. Material selection is designed to maximize the esthetic and longevity of that restoration for the patient. The novel Celtra glass ceramic is demonstrated to show improved mechanical and physical properties that should enhance our ability to provide a reliable long-term positive clinical outcome for our patients.

References

ARE YOU A FACIAL ESTHETICSODONTIST?

It’s probably not a term you’ve heard before, but every dentist is also a facial estheticsodontist.

[by Louis Malcmacher, DDS, MAGD]

Every reader certainly knows what the suffix “dontist” means, as used in the words endodontist, periodontist and orthodontist. Imagine my amazement when I came to the American Academy of Facial Esthetics (AAFE) course on Botox Therapy for Every Dental Practice, which I led with outstanding AAFE faculty at this past American Dental Association Annual Meeting in Atlanta (the 2018 ADA Annual Meeting is in Hawaii — see you there!). The sign outside the designated room identifying the AAFE course took the opportunity to coin a brand-new phrase I had never seen before — facial estheticsodontist. I am not sure how this came about, but this is the term as it was posted on the sign outside the room. At the start of the course, I congratulated the attendees of the course as being the first ever group of facial estheticsodontists being trained by the AAFE at an ADA Annual Meeting. This is just one of the dozens of AAFE live patient training courses gives each year and it is most certainly the first meeting to ever coin the phrase “facial estheticsodontist.”

In truth, every dentist is a facial estheticsodontist, whether they realize it or not — and has always been. In over 40 years of taking and giving different dental continuing education courses, lip service (pun intended) has been given to how dental treatment affects facial esthetics. You and I have been to removable prosthodontics courses that have used the term “dental facelift” when the vertical is open on these cases. Orthodontists and general dentists who perform minor and comprehensive orthodontics can significantly alter the facial esthetics of a patient, which may or may be entirely desirable to each individual patient.

Implant dentistry has made a huge impact in patients’ lives, not only with the function of teeth, but also with dental and facial esthetics. We have the opportunity to fully restore dentitions with fixed alternatives like never before. With implants, removable prosthetics and orthodontics, there will be additional lip support and lower facial support. As practitioners, we can sometimes control the outcome, but sometimes it is a challenge — the final facial esthetic result may not be good enough for the patient.

Teeth vs. smile

In nearly every esthetic dentistry course that I have taken or given, we hear this concept of how to talk to patients about more comprehensive esthetic dental treatment: “You know, Mrs. Jones, if I treat these four teeth with porcelain veneers, you will have good-looking teeth but not a great-looking smile. If I treat 10-28 teeth with porcelain veneers, then you will have a great-looking smile!” It sounds like we have all been facial estheticsodontists for a long time.

Here is the truth — whether it is a case of a few simple tooth colored restorations, 10 porcelain veneers, restoring a single anterior tooth with an implant or a full mouth implant reconstruction, the only thing accomplished is giving people great-looking teeth and not a great-looking smile. By only treating the hard tissues inside the mouth, even if you are changing the facial and lip support to some degree, that still does not translate alone into giving people a great-looking smile. A great-looking smile includes not only the teeth but also all of the soft tissue of the face. Dental esthetics is facial esthetics and facial esthetics is dental esthetics!

What it takes

To be a true facial estheticsodontist, you need all the skills and education to not only treat teeth but also to treat the oral and maxillofacial areas and really give patients great-looking smiles with non-surgical, minimally invasive treatments such as Botox, dermal fillers and PDO Threadlifts. This is exactly what dental professionals who attend AAFE live patient training courses are able to accomplish, once they have been properly trained in these skills that will last for the lifetime of their careers. The thousands of AAFE dental professional members are now able to achieve better treatment outcomes than ever before for dento-facial esthetics and also for TMJ and orofacial pain therapy.

It is time for you to start your journey with the AAFE and get trained in the use of Botox, dermal fillers and PDO Threadlifts. These are the most popular esthetic services that patients want and are already getting somewhere else — why not at your office? Become an AAFE facial estheticsodontist today!

ABOUT THE AUTHOR

Louis Malcmacher, DDS, MAGD, is a practicing general dentist and an internationally known lecturer and author. Dr. Malcmacher is president of the American Academy of Facial Esthetics (AAFE). You can contact him at 800 952-0521 or email drlouis@FacialEsthetics.org. Go to FacialEsthetics.org where you can find information about live patient Botox and Dermal Fillers training, PDO Threadlifts, Frontline TMJ/Orofacial Pain Trigger Point training, Dental Sleep Medicine, Bruxism Therapy and Medical Insurance, and sign up for a free monthly e-newsletter.
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10 GOLDEN RULES FOR TAKING IMPRESSIONS

Good impressions are vital, but getting quality impressions is easier said than done. [Information provided by 3M]

1. Keep the margins clear
   Keeping the margins free of blood and saliva is key for an accurate impression. If a patient is bleeding a lot, dentists could consider using hemostasis agents, mechanical retraction with cords or retraction paste, or a combination of any of those to ensure that the margins remain visible and dry. (Fay Ashley, New Image Dental Lab, Inc.)

2. Use hydrophilic material
   To counteract any unavoidable blood or saliva that does occur near the margins, then impressioning with a hydrophilic impression material like 3M™ Impregum™ Soft Polyether Impression Material or 3M™ Imprint 4™ VPS Impression Material becomes critical for success. (Dr. Luke Presley, DDS, Kimche & Presley Cosmetic & Sports Dentistry)

3. Tray size matters
   Trying the tray inside a patient’s mouth prior to adding impression material makes the impression easy and predictable. It also gives the patient a practice round so that he or she knows what to expect when the actual impression is taken.

4. Be conscious of the tendency to gag
   For patients who are more susceptible to gagging, try using the least amount of material possible. Usually, an excess of heavy body material is what triggers the gag reflex. Also, it can help to have patients sit up straight, and sometimes even put their legs on the ground so that they are sitting sideways in the chair. This way, they can lean forward to lessen the feeling that the material is going down their throats. In more severe cases, we may have the patient focus on breathing through his or her nose or may try some distraction techniques like lifting a leg during the impression. (Dr. Jared Lee, DDS, Juneau, Alaska)

5. Air out the prep
   One method to ensure the margins are visible is to syringe around the prepared tooth once with material, lightly blowing air all around the preparation and then continuing to syringe the remaining material. (Dr. Luke Presley, DDS)

6. Pay attention to the packaging
   A warped impression is occasionally a result of expired materials or improper mixing. To overcome this, it’s important to consult the Instructions for Use included with the material, and make sure to keep track of the material expiration date. (Fay Ashley)

7. Use the art of distraction
   An impression can become distorted if a patient gags and moves too much. Even if a patient has been given instructions, they might move on accident, so it’s helpful to have an assistant chat with the patient during the procedure. The conversation serves as a diversion that takes the patient’s mind off of any discomfort or gagging sensations. Reminding patients to take deep breaths through their nose or wiggle their toes helps distract them from the process. Giving the patient verbal updates as to the time remaining is also very helpful. (Dr. Geetha J. Damodaran, DDS)

8. Go slow
   Take your time on parts that are most critical, like packing retraction cord. Make sure the cord is packed in well and has enough time to push the tissue. If the cord doesn’t have enough time to sit before taking the impression, then the cord does little other than to traumatize the area around the sulcus.

9. Get your timing right
   The best way to make sure you’re giving the impression enough time to set is to follow the material instructions every single time. Especially since materials handle differently in varying temperatures, the manufacturer’s directions are your best bet to ensure perfect timing. If you’re not sure, talk to your manufacturer’s representative. He or she will be able to help you make sure your product is functioning to its optimal ability.

   Once you know the instructions by heart, be consistent. In my practice, we have physical timers that we use to keep track of our mixing time and set time. This has allowed me to achieve incredibly accurate impressions and minimize my chairside time at cementation. (Dr. Ben Record, DDS, Record Dental Center)

10. Get the full arch
    Many labs would say that they appreciate all the information that full-arch impressions give them, and many dentists who are concerned about occlusion will often do full-arch impressions. A quadrant impression will allow the opposing arches to rock buccal and lingual.

    With a full-arch impression, the opposite side of the arch stabilizes the occlusion and will also give more accurate excursive movements to better control occlusal interferences. To confirm that a full-arch impression is preferred, a dentist should have a conversation with their lab and come to a mutual decision. (Mark Ferguson, Vulcan Custom Dental Laboratory)

ABOUT 3M

3M Oral Care offers several free resources for dentists and dental labs at 3m.com/GreatImpressions and 3m.com/DentalLabs. Among these resources are an impression material selector tool, a comprehensive Impression Troubleshooting Guide, cementation guides and much more.
It’s no secret that most people desire pearly white, straight teeth. Perhaps it’s our obsession with Hollywood or our irrational need to capture the perfect selfie to post on Instagram. Regardless of the reason, one thing is certain: The demand for cosmetic dentistry is skyrocketing.

Most adults don’t want their mouths filled with wires and brackets, but unfortunately not everyone has the financial resources to afford inconspicuous clear aligners. That’s where mail-order orthodontic businesses like SmileDirectClub have entered the picture. SmileDirectClub was founded in 2013 as the first digital brand for straightening consumers’ smiles. The process is broken down into a few simple steps. First, the patient has a 3D image created of his or her teeth either by using an at-home impression kit or stopping by a local SmileShop for a scan. Next, a SmileDirectClub affiliated licensed dental professional reviews the case and determines whether the patient is a candidate for the invisible aligners. If the patient is deemed a candidate, SmileDirectClub sends a preview of what the patient’s new smile will look like and begins production of the invisible aligners. Once the aligners are delivered, the patient is instructed to wear them for a prescribed number of months. Invisible retainers are also available for purchase after treatment is complete.

The treatment is designed for minor to moderate tooth correction such as spaces between teeth, crowding and rotations. Patients who have missing teeth, implants or wisdom teeth have their cases evaluated to determine if they are a candidate for the treatment, according to the manufacturer’s website.

One of the reasons mail-order aligners like those from SmileDirectClub are so appealing to consumers is the price. SmileDirectClub aligners can be created for a one-time payment of $1,850, or 24 monthly payments totaling $2,170. Compare that to Invisalign, which can range from $3,000 to $8,000, according to the manufacturer.

But is the low cost worth it? Maybe not, according to several organizations.

The American Association of Orthodontists, which represents 19,000 orthodontist members, has cautioned consumers from using do-it-yourself orthodontic treatments. According to its website, nearly 13 percent of orthodontists who are members of the AAO are
seeing patients who have tried DIY teeth straightening treatments, with some attempts causing irreparable damage.

“Moving teeth is a medical procedure and needs personal supervision by an orthodontist,” the AAO says on its website. “Moving teeth without a thorough examination of the overall health of the teeth and gums could result in the permanent loss of teeth, which may result in expensive and lifelong dental problems.”

The American Dental Association also “strongly discourages” the use of DIY orthodontic treatments, according to a new policy passed by the 2017 ADA House of Delegates.

“Patients are being inundated with direct marketing campaigns encouraging them to initiate and manage their own orthodontic treatment,” says Dr. Craig Ratner, chair of the ADA Council on Dental Practice. “This year’s ADA House of Delegates recognized the need for the ADA, as America’s leading advocate for oral health, to take steps to educate patients about the potential pitfalls of self-managed orthodontic treatment. This new policy supports the importance of dentists being in charge of diagnosing and treating patients to ensure the safe delivery of appropriate care.”

Adrian LaTrace, CEO of Boyd Industries, says he has conducted market research and seen some poor outcomes experienced by SmileDirectClub customers.

“An individual who is requesting orthodontic treatment,” says Dr. Craig Ratner, chair of the ADA Council on Dental Practice. “This year’s ADA House of Delegates recognized the need for the ADA, as America’s leading advocate for oral health, to take steps to educate patients about the potential pitfalls of self-managed orthodontic treatment. This new policy supports the importance of dentists being in charge of diagnosing and treating patients to ensure the safe delivery of appropriate care.”

Adrian LaTrace, CEO of Boyd Industries, says he has conducted market research and seen some poor outcomes experienced by SmileDirectClub customers. Take, for instance, Charlene Burnham, a 60-year-old SmileDirectClub customer who told BuzzFeed News that the aligners she received were too tight, which ended up cutting her gums and exposing part of her tooth near the root. Burnham claims she spent a week trying to speak with a SmileDirectClub dentist on the phone to no avail.

According to the Better Business Bureau, about 278 consumer complaints have been lodged against SmileDirectClub in the last three years. Most of the complaints are about the product itself, while others deal with shipping or billing issues.

“Although there will be people that SmileDirectClub gets right, there will be many they don’t. What is the acceptable number of patients that are harmed by this method? This will have to be answered by the regulators and marketplace,” LaTrace says.

According to a blog post on SmileDirectClub’s website, the clear aligners are offered through a network of more than 225 Endorsed Local Providers (ELPs) throughout the country. The network is reportedly comprised of state-licensed, board-certified orthodontists and general dentists who assess each individual case.

“An individual who is requesting treatment by using SmileDirectClub’s aligners is receiving the same level of care from a treating ELP as an individual visiting a traditional orthodontist or dentist for treatment,” says Jeffrey Sulitzer, DMD, chief clinical office at SmileDirectClub. “The tele-dentistry platform allows for more convenient access and flexibility for individuals who may not have access to local care.”

However, most patients don’t visit a dental office or orthodontist during their invisible aligner treatment, which is an area of concern for the Michigan Dental Association. The MDA created a resolution stating that “supervision by a licensed dentist is necessary for all phase of orthodontic treatment.”

From a commercial perspective, LaTrace says, SmileDirectClub is another outside threat to the orthodontic profession.

“Orthodontists have faced stiff competition from general dentists who prescribe orthodontic procedures or aligners and more recently from the ‘do-it-yourself’ tooth realignment crowd,” he says. “SmileDirect, unlike the teenager who ties their teeth with elastic, does provide a level of screening before producing and supplying the clear aligners to correct a person’s malocclusion. From publicly posted results, it is apparent that at times the end results do not meet the customers’ expectations. In contrast, an orthodontist provides a continuum of care to make the necessary adjustments to assure good patient outcomes.”

SmileDirectClub, however, stands by its product and treatment process.

“The medical industry has been here before,” says co-founder Jordan Katzman in a release. “Products like hearing aids, contact lenses and dialysis supplies faced resistance at first too. We are confident in our product as well as our process and independent providers and will not let the opposition keep us from providing more accessible and affordable services.”
The revolutionary one-visit crown: CAD/CAM not required

Same-day dentistry is becoming increasingly popular and easier than ever — and the Rhondium OVC₃ is leading the way.

NO DOUBT MANY OF YOU read my Top 5 Test Drives column in the December 2017 issue. In that column, one of my favorite new products from 2017 was the OVC₃. While I got a chance in December to give you a rundown of the product and why I like it, I really felt that in order to do the product justice it needed a complete article. So sit back, prop up your feet, and see how OVC₃ may just be a dramatic world changer for dentistry.

CAD/CAM in dentistry has, believe it or not, been with us for more than 30 years. I remember being in a fixed prosthetics class in the spring of my fourth year, which was 1987. I can clearly recall one of the instructors talking about a new concept for crowns that relied on “Computer Assisted Design and Computer Assisted Manufacturing,” or CAD/CAM. During the lecture the instructor told us that while the system was in its very early stages, he could envision a time in the future when impressions materials would be limited in use — if they were needed at all.

I remember this as if it were yesterday for the simple reason that I really, really disliked taking impressions. It wasn’t that I was terrible at it. I suppose my skills were “adequate,” but the whole process (especially in the late ‘80s) was complicated, messy and the patients hated it. I recall thinking during the lecture, “If I don’t have to take impressions, I need to buy one of those things.” It’s funny now because the “thing” didn’t even seem to have a name back then, or if it did, my instructor didn’t know what it was.

That device became CEREC and it sure changed our world. It ushered in the entire category of digital impressions and in-office milling.

Of course, starting around 2004–2005 we began to see an increase in the entire category of digital impressions. Then the entire product category exploded somewhat around 2010 and now we continue to see new players enter the acquisition market. We are also seeing lots of companies enter the market with mills. This allows the doctor to mix and match their preferences and budgets with what they need to accomplish their tasks.

However, let’s stop and take a breath in this discussion. There are lots of reasons why same-day fixed prosthetics are a game changer for both patients and providers. ... most of us who have been in the practice for even a year or two can clearly see the ‘why’ of same-day dentistry.”

What if I told you that you could answer for a long time. However, let’s stop and take a breath in this discussion. There are lots of reasons why same-day fixed prosthetics are a game changer for both patients and providers. From patient satisfaction to increased hourly profitability for offices, most of us who have been in practice for even a year or two can clearly see the “why” of same-day dentistry. Those “why” questions have all been answered for a long time.

“ There are lots of reasons why same-day fixed prosthetics are a game changer for both patients and providers. ... most of us who have been in the practice for even a year or two can clearly see the ‘why’ of same-day dentistry.”

What we, as a profession, are asking now is not “why,” but “how.” And by that I mean:

• Selecting the proper acquisition unit
• Selecting the proper milling unit
• Learning to use the acquisition unit
• Learning to use the milling unit
• Learning the design software
• Deciding which material/block to purchase and use
• Deciding (somewhat based on material/block selection) do we need to purchase an oven
• How much chair time based again on material/block selection

And then there is the biggest “how” of them all, which is “How do I pay for all of this?” Here is an example of this: I was recently speaking with a dentalsalesperson who does not have any financial interest in this particular area of dentistry. She told me one of her customers had told her that composite sales in dentistry would soon be seeing a massive decrease as most dentists were now doing inlays instead of Class II direct restorations. She wanted to know if that was my opinion as well. I asked her if the office in question had recently purchased a CAD/CAM unit. She said they had and my reply was “I thought so.” That’s the unfortunate part that sometimes happens with purchases like this. The father of behavioral psychology, Abraham Maslow, once said, “When the only tool you have is a hammer, every problem begins to resemble a nail.”

What if I told you that you could offer a solution to your patients that allowed you to do one-visit crowns without a near six-figure investment in hardware? That is the concept from a company called Rhondium and their product, the OVC₃. The product is named for the concept of one-visit crowns and may very well change some aspects of our perspective on same-day crowns.

The OVC₃ is a fairly unique idea. The system consists of either a hybrid composite/porcelain or lithium disilicate prefabricated crown that is designed for molars or premolars in a variety of shades. The difference between the OVC₃, preparation and a traditional crown preparation is that the OVC₃, prep requires reduction of the occlusal surface only and, if possible, keeping the margin above the height of contour. This allows the tooth to retain its maximum internal strength.

The OVC crown comes in a variety of sizes for every posterior tooth. A plastic “blank” that is identical to the OVC₃ is used after occlusal reduction to determine the proper size and if enough reduction has
been accomplished. When proper fitting and isolation have been accomplished, the natural tooth is etched and bonded with whatever bonding system the doctor is comfortable with. The OVC itself has a layer of composite added to the crown-tooth interface area during manufacture. The OVC is pressed into place and tack-cured. Then, the excess composite is removed and the system is cured from multiple angles by a high-intensity curing light. Once properly cured, the margins are finished and polished.

The OVC kit comes with everything necessary to complete the case. This includes a special matrix band, the plastic “blank” and traditional plasticized wedges. There are also Rhondium’s special “Stretch Wedges” that provide greater separation force than sectional matrix rings and the OVC porcelain crown itself.

For years, practice management professionals have been telling doctors that the greatest potential source of income in our practices is the undone dentistry in our patients’ charts. That is definitely something I agree with and it is definitely something the OVC can help with. Many patients have reasons against getting crowns done and two of the most common are expense and time. Many simply cannot afford a crown and many others do not have a job that allows them to take off from work for two crown visits.

In my office, we have positioned the OVC as an affordable option to the more expensive lab-fabricated crown. In our offices, we are all frequently faced with clinical situations where a tooth is just too broken down to support a direct composite. However, if the patient does not have the finances or the time for the two appointments required for a crown, what is there we can offer? The OVC provides the restorative option dentistry has been looking for without the need of a large capital outlay. Since the cost of an individual OVC kit is less than a traditional lab-fabricated crown and requires less time and fewer appointments, that savings can be passed along to the patient.

There is a brief learning curve, but I will emphasize the word “brief.” After two or three cases, the procedure can be completed easily in under an hour.

The company has created training videos that will help you to come up to speed, but perhaps the best way to become proficient is to do a hands-on course. These training courses are offered in lots of different areas.

The company’s website also has lots of doctor specific information and tutorials. To order your own OVC Kit or to learn more, check out www.rhondium.com.

ABOUT THE AUTHOR
John Flucke, DDS, is Chief Dental and Technology Editor for Dental Products Report and dentistry’s “Technology Evangelist.” He practices in Lee’s Summit, Missouri, and has followed his passions for both dentistry and technology to become a respected speaker and clinical tester of the latest in dental technology, with a focus on things that provide better care and better experiences for patients. He blogs about technology and life at blog.denticle.com.
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FROZEN SHOULDER AND DENTISTRY

When it comes to shoulder pain, prevention is the best option.

[by Dr. Bethany Valachi, PT, DPT, MS, CEAS]

Perhaps nowhere in the body is the phrase, “If you don’t use it, you lose it” more applicable than the shoulder joint. Frozen shoulder syndrome, also known as adhesive capsulitis, is a gradual loss of movement resulting from tightening of the joint capsule. Although the exact cause is unknown in many cases, evidence points toward poor posture, post-traumatic injury, and lack of movement or exercise as well as a multitude of hormonal and genetic predispositions. In dentistry, the obvious culprits are poor posture and prolonged, static postures. Symptoms include lateral shoulder pain that worsens when lifting the arm above shoulder level. Sleeping on the shoulder may also be painful. Flexibility gradually worsens and makes everyday activities like fixing hair, fastening a bra or reaching into a back pocket difficult.

Once it develops, the treatment for frozen shoulder is usually a long and painful rehabilitation, involving aggressive stretching exercises and mobilizations by a physical therapist to regain normal shoulder range of motion. Once it develops, frozen shoulder can take up to three to five months to resolve. Therefore, prevention is the wisest course of action.

To prevent this condition, dental professionals must take time for frequent stretches during the day. Extension, flexion, abduction and internal rotation stretches should all be performed frequently during the day. One example of such a stretch is the pectoralis stretch. Clasp the hands behind the back and slowly bring the arms upward, until a gentle stretch is felt. Hold for 2-3 breath cycles and repeat. At home, a towel may be used behind the back to lift the opposite arm until a gentle stretch is felt. Hold 2-3 breath cycles and repeat. Never stretch in a painful range. Applying moist heat prior to the stretch will help increase blood flow and improve flexibility. An excellent resource for a quick, microwavable moist hot pack is MediBeads Moist Heat Therapy packs, available at painreliever.com and other sites as well. These packs are also excellent for treating trapezius myalgia. ●

ABOUT THE AUTHOR

Dr. Bethany Valachi, PT, DPT, MS, CEAS is Ergonomics Editor for Dental Products Report. She is author of the book “Practice Dentistry Pain-Free” and clinical instructor of ergonomics at OHSU School of Dentistry in Portland, Oregon. A doctor of physical therapy who has helped thousands of dental professionals prevent pain and extend their careers, she is recognized internationally as an expert in dental ergonomics and has provided over 700 lectures worldwide. She has published more than 50 articles in peer-reviewed dental journals and offers additional dental ergonomic resources on her website at www.posturedontics.com.
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Which is better: SEO or PPC?

Dr. Lou Shuman and Ian McNickle, MBA, discuss the ins and outs of optimizing your online marketing results.

Each month, Dr. Lou Shuman consults with a dental digital marketing specialist to discuss the latest developments in SEO strategies, website optimization, social media trends, online reputation management, marketing and more.

This month, Dr. Shuman sat down with Ian McNickle, MBA, partner and co-founder of WEO Media, to talk about online dental practice marketing and the benefits of search engine optimization (SEO) and pay-per-click (PPC) advertising.

Do you think SEO or PPC is a better tactic for online marketing results?
SEO consists of a wide range of activities that are done every month in order to get a website ranking highly on Google search results (or any search engine). PPC consists of using paid ads to generate traffic to a specific webpage. PPC ads can be used on search engines like Google and Bing as well as social media platforms like Facebook and YouTube.

SEO and PPC results show up on different sections of a search result page. PPC ads typically show up in the advertising section of search results, which are located at the very top of the page in the first three or four positions listed as well as the very bottom of the page. By contrast, organic search results (which are driven by SEO activities) are shown in the Local Map section as well as in 10 organic listings below the Local Map. It is estimated that more than 90 percent of all clicks are on the Local Map and organic listings.

SEO and PPC both can get your website found on page one of Google, but which is better?
SEO and PPC are both recommended for any online marketing program that wants to drive new patient growth. When implemented properly, they work together to complement each other.

For local businesses like a dental practice, each location has a physical address that serves that local market. Google will rank a local business in the organic results for the city corresponding to the physical address of the business but typically not for the neighboring or surrounding geographies.

This creates a problem. Your practice could serve patients in these nearby areas, but you won’t show up in search results for those areas because you don’t have a physical business address there. (Note: A P.O. box is not a legitimate physical address as far as Google is concerned).

This is where PPC ads come in, correct?
Yes. What we like to do at WEO Media is use SEO and PPC together to strategically maximize results. When we set up a PPC campaign, what we’ll often do is analyze the search terms and geographies where the practice website is already ranking well and compare that to a map of all the geographies they could realistically pull people in as new patients. The areas on the map where the website is not ranked on page one are good candidates for a PPC ad campaign. It is best to target the top two or three services (such as dental implants, cosmetic dentistry, braces, etc.), and focus those ads on the geographic areas where the website is not on page one.
This approach is a smart way to get the maximum number of clicks from potential new patients for a given marketing budget. Obviously, the bigger the budget, the more clicks we can generate.

**How should doctors select an SEO/PPC provider?**

It is a good idea to ask to see some client examples. We often send potential clients a PDF that highlights a bunch of our clients ranking high on page one to demonstrate what we can do. In addition, I would recommend asking these questions:

- Is your company a Certified Google Partner company? If so, that indicates they probably have some people who technically know what they’re doing — though it doesn’t necessarily mean they will do a good job for you. I see practices getting ripped off all the time by companies that just aren’t putting in the hard work to get results.
- Do you have a lot of experience in the dental industry? There are lots of companies that offer SEO and PPC services, but not too many that focus entirely on the dental industry. We work with hundreds of dental practices and that experience makes a big difference in our ability to get results.
- Do I have to sign a long-term contract? It often takes time to get results with online marketing, but I would avoid 12-month contracts (or longer). It is reasonable to agree to a six-month contract, but I would recommend against longer contracts.

If an agency cannot demonstrate improving trends after six months, something is probably wrong with what they’re doing. ●

If you have questions about your dental practice’s website, social media or online marketing, you may contact WEO Media at 888-246-6906 or info@weomedia.com for a consultation to learn more about the latest industry trends and strategies. The consultation is free if you identify yourself as a reader of this publication.

**ABOUT IAN MCNICKLE, MBA**

Ian McNickle, MBA, is a national speaker, writer and marketer. He is a co-founder and partner at WEO Media and winner of the 2017 Cellerant Best of Class Award for Dental Marketing and Dental Websites. If you have questions about any marketing related topic, please contact Ian McNickle directly at ian@weomedia.com or by calling 888-246-6906. For more information, you can visit them online at weodental.com.

**ABOUT DR. LOU SHUMAN**

Dr. Lou Shuman is a long-time contributor to Dental Products Report and president and CEO of Cellerant Consultant Group. He is also the chairman of the Technology Advisory Board at WEO Media, a Venturer-in-Residence at Harvard’s Innovation Lab and he founded a dental-education internet company.

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5 things you need to know about dental marketing

These proven strategies are designed to give your marketing plan a jump-start.

[by Naomi Cooper | President, Minoa Marketing and CEO and co-founder, Doctor Distillery]

Do you cringe when you hear the phrase “marketing trends”? If you’re like most dentists, you don’t need to hear trends; you just want to know what you need to do to promote and build a profitable long-term practice.

The good news is that the “trends” that you may have been hearing about over the last few years aren’t changing — they’re actually compounding. The trends that were highlighted as trends in 2016 or 2017 have now become the staples in any dentist’s marketing toolkit. With the right mix of these online and offline efforts, you can be confident that you’re spending your time and money on the right marketing ventures.

1. Mobile-first strategy
In a recent study by Google, 96 percent of people use their smartphone to access information online, and dental patients are no different. That’s why the need for dentists to have a dynamic website that is designed for the mobile user continues to be so incredibly important.

A mobile-first strategy goes beyond the idea of just being mobile-friendly; it’s the concept of designing a website for the mobile user first, instead of simply adding functions that will help it operate on mobile devices. This is no longer a nice-to-have feature; if your website isn’t compatible with mobile, you stand to lose out on a tremendous amount of new patient opportunities.

You now have the time to reach out to a trusted website designer to be sure your site is enabled for the mobile user.

2. Visual online content
Videos, photos and infographics are all visual components that are incredibly engaging to patients, along with having the added benefit of being more memorable than text alone. When marketing to patients online, adding visual content helps make your efforts more effective.

The rise in popularity of video content, in particular, will only continue. Fortunately for dentists, creating a quality video doesn’t require a fancy production company or even a large budget. The cameras built into today’s computers and smartphones are often sufficient for shooting brief videos, and uploading your content to your practice website or social media profile has never been easier. Q&A sessions with the dentist, office tours and patient testimonials are all powerful ways to utilize the power of video for the dental practice.

3. Big data
The term “big data” is one you might have heard of but perhaps never thought it applied to your dental practice. With new technology available to dentists today, it’s now possible to see the results of your marketing efforts in real time, allowing you and your team to make quick, fluid adjustments in order to maximize your returns.

Big data provides you with valuable information, helping you base your marketing decisions on hard numbers, not feelings and emotions, so that you can be sure you are spending your money most wisely.

It’s always been important for dentists to track and review the returns on their marketing efforts — big data just makes it easier and faster to do so. Luckily for busy dentists, there are numerous dental industry specialists with software tools to help organize the information, including Sesame Communications (sesamecommunications.com), Lighthouse360 (lh360.com) and MMG Fusion (mmgfusion.com).

4. Outsourcing
With all of the tasks that dental practice owners are charged with, marketing can get pushed to the back burner. Yet nearly every dental practice now has an online presence, making it increasingly difficult to get your message seen by the right patients.

Marketing is one of the areas where outsourcing can truly pay off, whether you choose a marketing consultant, an SEO company, a social media expert or an online reputation management service. There are certified specialists in all of these areas whose job is to focus on marketing. Delegate these tasks to the professionals and ensure you are effectively getting your message across to patients online — without having to take time away from your ever-growing to-do list.

5. Brand evangelists
These are the patients who never hesitate to refer patients to your office, regardless if it’s a friend, a stranger in the grocery store checkout line or through a positive testimonial online that can be seen by hundreds of local prospects.

It’s up to the dentist and team to identify a core group of patients within the practice and cultivate relationships with each one to develop a pipeline of consistent referrals. It takes time and effort to create the momentum, but there’s no doubt that word of mouth will continue to be one of the most powerful — and inexpensive — marketing tools in 2018.

One final thought…
It’s important to remember to be authentic with your marketing. Keep your messages true to your values, and personalize your marketing to reflect your genuine personality. And don’t forget about the power of the personal touch. No amount of flashy tech tools or fancy software programs will replace old-fashioned, quality customer service.

Take advantage of the tools available to you, both online and offline, to align your marketing goals with the vision you have for your practice.

Reference:

ABOUT THE AUTHOR
Naomi Cooper is president of Minoa Marketing and CEO and co-founder of Doctor Distillery. Naomi is a respected dental marketing executive, strategist, consultant, author, speaker and industry opinion leader. Naomi also blogs regularly at minoamarketing.com. For more information about Doctor Distillery, email naomi@doctordistillery.com or visit doctordistillery.com.
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4 ways to make software warranties work for you

Warranties are a key component of any software contract — here’s how to end up with a good deal. [by Mike Uretz]

So, you finally decided to purchase that new dental software that you’ve been thinking about for a couple years now. You believe you got a good deal and are excited at the prospect of finally implementing a new system that will support both your administrative and clinical operations. The last step is to structure a solid software contract with your vendor that protects you moving forward.

Unfortunately, too many times this is where you wind up on the wrong end of the deal. When it comes to software contracts, many practice attorneys just don’t have the specialized experience needed to structure solid software contracts and vendors typically have an upper hand in their never-ending goal to protect themselves.

Having negotiated many software contracts over the years, I can tell you that there are numerous things to think about when structuring and negotiating a winning contract. One area that isn’t talked about enough is the concept of software guarantees and warranties.

**Software functionality warranties**

Software functionality means that the software works as advertised. This is usually guaranteed for a reasonable period of time after go-live (120-180 days). If bugs, errors or problems occur, the contract needs to include specific timeframes and steps for communication and fixes as well as specific remedies for non-compliance. The software functionality section should include but not be limited to:

- The standard for acceptable functionality, which may be in user manuals, reference materials or other documentation
- Timeframes for fixing broken or inadequate functionality
- Remedies such as financial penalties and/or software refund if timeframes are not met
- Warranties about performance. *Bottom line:* If a vendor cannot repair broken functionality after the timeframe has elapsed, then remedies should be spelled out. Don’t leave it open.

**Regulatory compliance**

Regulatory conditions change over time as rules and circumstances alter. Regulatory compliance is a commitment by the vendor to address and meet future regulations, such as changes to HIPAA. A key question to ask is whether compliance upgrades are free to the practice or if there will be additional costs or fees. The timeframe for vendors to reach compliance should also be specified.

*Bottom line:* Ensure that your vendor commits to keeping up with regulatory compliance, preferably at no extra cost.

**Standards compliance warranties**

Standards compliance refers to specific kinds of functionality. For instance, interoperability with other systems or the ability to interface with certain standard devices. Contracts usually spell out compliance for specific standards and specify which standards are met by the software.

Practices may also want the vendor to commit to meeting new or revised standards. That may be difficult, particularly if the standards have not yet been completed. However, understanding how the vendor will work to remain in compliance with industry standards over time, as well as government and certification standards, is key to ongoing software functionality. Practices should ask if standards compliance is included in regular upgrades or if there are additional fees. If a practice has unusual interfaces, the contract should specify any charges for a specific interface that does not meet an industry standard.

*Bottom line:* Make sure your vendor is committed to keeping up with evolving industry standards.

**Meaningful Use warranties (If eligible for EHR Incentive Subsidies)**

Eligible groups and practices that wish to attest for Meaningful Use need guarantees that the vendor will continue to provide necessary functionality as program rules change. Certification is crucial to receiving the incentive and reimbursement, which is a vendor responsibility.

Often, vendors try to stick customers with the cost of keeping up with certifications. They are selling you software that supposedly allows you to get your subsidies, so shouldn’t they be responsible for any costs incurred for changes that will continue to allow their customers to be eligible for complying with Meaningful Use?

Another question is whether the main software is Meaningful Use complaint itself or if additional modules are needed to attest. Some vendors offer separate meaningful use reporting tools or package their software with a third-party vendor’s certified software. Reporting of Meaningful Use measures (typically by “Meaningful Use” dashboards) is a critical component to address. The Meaningful Use section should include, but not be limited to:

- Functionality commitment
- Timing and information around upgrades
- Certification commitment, and which stages are included
- Remedies and steps for non-compliance
- Customer responsibilities and vendor responsibilities.

*Bottom line:* The contract should include steps and remedies for non-compliance both for present and future stages of meaningful use. Remedies can include such provisions as service credits, financial penalties or, ultimately, refunding software costs.

**About the Author**

Mike Uretz is a nationally-recognized dental software, IT, and Electronic Health Records (EHR) expert. He is the founder of DentalSoftwareAdvisor.com and DentalSoftwareCompare.com as well as the Dental Software Editor for Dental Products Report. As a leading industry consultant and educator, Uretz has helped Dental Groups, DSOs, and individual practices evaluate and select software vendors and solutions, structure and negotiate vendor contracts, and provide vendor management. He also has assisted dental clients with obtaining millions in technology subsidy payments through the EHR Incentive Program. Mike can be reached at mike@dentalsoftwareadvisor.com or 425-434-7102.
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6 myths about data encryption

Encryption may seem like a scary process, but can you really afford to have unsecured data? [by Dr. Lorne Lavine]

Myth: Encryption doesn’t make data stored in the cloud more secure.
Truth: Storing encrypted data in the cloud is more secure than storing non-encrypted data in the cloud. Do you know where cloud data is stored? Who truly has access to it? The answers to these questions underscore the reason that all data that’s sent to the cloud should be encrypted, with the encryption keys controlled by you.

Myth: Encrypting data is more important than key management.
Truth: Encryption without careful key management is pointless. Too many organizations fail to manage their encryption keys, either storing them on the same server as the encrypted data or allowing a cloud provider to manage them. You wouldn’t want to lock your car and leave the keys in the door.

Myth: If your data is encrypted, it can’t be stolen.
Truth: Encryption doesn’t stop data loss or theft, but it does keep data safe by making it unreadable and unusable. Choose an encryption solution that provides proof that your data was indeed encrypted.

Dental offices should consider encryption of any and all devices that contain patient data — it’s your only “Get-Out-Of-Jail-Free card” if you ever suffer a breach.

Data breaches are in the headlines almost every day, yet only a small percentage of cyber attacks target the big organizations like Sony, Anthem or the U.S. government. If you’re a small- or mid-sized business (SMB), like a dental practice, your data is under attack too.

More than 700 million records were compromised in 2014, and 53 percent of confirmed data loss incidents are in organizations of less than 1,000 users, according to a report by Verizon. No business or institution anywhere in the world is immune to data theft, regardless of geography, size or industry.

Much of IT security is focused on protecting physical things — servers, desktops and laptops, mobile devices — but dental offices should think more about how to protect the valuable data on those computers. With the proliferation of data and the need to access data from anywhere at any time, encryption is rapidly emerging as the best place to start your security strategy.

Despite the cold, hard facts of data breaches and accidental data loss, practices are slow to adopt encryption. Why? In part, it’s because encryption has long been shrouded in myths.

Myth: Only businesses that have compliance requirements where encryption is mandated by law need to use encryption.
Truth: For any type of organization, data has value and needs to be protected. That may be customer information (names, emails, credit card information), internal finance or competitive information, employee information, intellectual property and more. Simply put, data is currency — it has value and should be protected as such. Companies should always encrypt sensitive data, whether legally obligated or not. Of course, HIPAA requires encryption, so it’s sort of a moot point!

Myth: Encryption is too complicated and requires too many resources.
Truth: Data encryption can be very simple to implement and manage. The key is to understand the types of data you need to encrypt, where it lives and who should have access to it. Plus, if you choose full-disk encryption, it becomes even easier for everyone to secure their data on a daily basis.

Myth: Encryption will kill database and application performance.
Truth: Performance of applications, databases, servers and networks is a top priority of IT and end users. When designed and implemented properly, encryption can not only protect the critical data running through those systems, but its presence can have minimal impact on performance that’s imperceptible to users.

Myth: Encrypting data is more important than key management.
Truth: Encryption without careful key management is pointless. Too many organizations fail to manage their encryption keys, either storing them on the same server as the encrypted data or allowing a cloud provider to manage them. You wouldn’t want to lock your car and leave the keys in the door.

Myth: If your data is encrypted, it can’t be stolen.
Truth: Encryption doesn’t stop data loss or theft, but it does keep data safe by making it unreadable and unusable. Choose an encryption solution that provides proof that your data was indeed encrypted.

Dental offices should consider encryption of any and all devices that contain patient data — it’s your only “Get-Out-Of-Jail-Free card” if you ever suffer a breach.

ABOUT THE AUTHOR
Dr. Lorne Lavine, founder and president of The Digital Dentist, has more than 30 years in the dental and dental technology fields. Dr. Lavine has vast experience with dental technology systems. As a consultant and integrator, he has extensive hands-on experience with most practice management software, image management software, digital and intraoral cameras, computers, networks and digital radiography systems. He also writes for many well-known industry publications and lectures across the country. Dr. Lavine can be reached at 866-204-3398 or by email at drlavine@thedigitaldentist.com.
5 ways to conduct infection control training for your office

Infection control training doesn’t have to be boring or redundant. Instead, look for new ways to engage your staff.

[ by Robert Elsenpeter ]

Infection control training can—and very regularly should—be an important part of your staff’s continuing education. Training encompasses not only new topics in the world of infection control but also helps to correct deficiencies that may be present.

“The CDC’s 2016 release of the ‘Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care’ stresses the importance of training. In fact, the term ‘training’ appears 37 times,” says Karen Daw, an infection control consultant and former clinic health and safety director for The Ohio State University College of Dentistry. “The summary specifically states, ‘Education on the basic principles and practices for preventing the spread of infections should be provided to all DHCP. Training should include both DHCP safety (e.g., OSHA bloodborne pathogens training) and patient safety (e.g., emphasizing job- or task-specific needs).’”

But there is no one-size-fits-all approach for training. Each practice has unique needs and there are unique ways to meet those needs.

**Decide who will lead**
The trainer presenting the material can differ based on the material and how it is to be offered. If someone from the office conducts training, generally it is the infection prevention coordinator. Consultants and trainers can also deliver educational instruction.

“You can work with very credible consultants and bring in a consultant who can really help to do the train-

ing,” says Kathy Eklund, RDH, director of occupational health and safety at The Forsyth Institute. “You want to make sure it’s very specific to the setting and specific to the policies and procedures of that setting. How are they applying the recommendations to ensure they’re in compliance? And how are you doing the training to ensure everybody understands what’s to be done and is consistent in doing that?”

Within the practice, training is ideally conducted by the infection prevention coordinator. “One of their roles is education and training staff — both new staff as well as your annual training, as well as when things arise that need to be addressed,” Eklund says. “You don’t always have to wait an entire year to do education and training. It may be that you’ve changed products or devices or you see a trend when you’re doing some evaluations and you want to bring everybody together to talk about it, as opposed to saying, ‘We only do training once a year.’ Minimal that’s true, but you should be doing intermittent training by various triggers.”

Daw adds that if the infection control training is also designed to fulfill OSHA’s Bloodborne Pathogens requirement, then the trainer should be experienced with the components of the standard. Per OSHA, individuals may conduct the training provided they are, “Knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace. One way, but not the only way, knowledge can be demonstrated is the fact that the person received specialized training.”

Eklund notes the Organization for Safety Asepsis and Prevention (OSAP) has resources, tools and training materials for infection prevention coordinators.

“The infection prevention coordinator should be knowledgeable in relevant current CDC recommendations, OSHA regulations, and other state and local specific requirements,” Eklund says. “And
that depends on the setting. In addition to the resources and tools on the OSAP website, each year in January, OSAP holds a boot camp. The boot camp is three solid days of education and training on infection prevention and safety. It helps individuals to be able to go back into their own settings to not only manage their own programs, but also to be able to do some internal education and training.”

Hands-on training
Training need not be conducted in one lengthy session. In fact, it is best digested when taken in a bit at a time. “You might want to break it apart into specific areas, across different lunch-and-learn times where you really delve into one area of the training,” Eklund says.

Hands-on activities can enhance the training sessions. “Medical emergency drills, for instance, are a very good example,” Eklund explains. “You can’t just talk about it; you need to engage staff in activities to demonstrate how to respond to a medical emergency. Have staff demonstrate how to use the oxygen tank or take the vital signs until the EMTs come.

“The same training techniques can be applied to infection control and safety training,” Eklund adds. “Reviewing CDC recommendations and looking at site-specific policies can be done in a classroom setting, but it’s more effective to take staff into the sterilization area, talk through the processes, and refresh and remind everyone what needs to be done. In that way, it becomes more interactive, and that also engages staff to have more discussion and ask questions.”

Hands-on training can extend beyond the sterilization area and should include more than the hygienists and assistants. “The assistants and the hygienists are primarily the ones who set up an operatory and break it down, but the dentist plays a big role as well, to be a second check or a second look,” she says. “When the dentist sits down with the patient, they should do an environmental scan to ensure that something hasn’t been missed. The dental assistants are extremely busy and having the second check helps to reduce the risk of an infection control breach due to human error. Infection prevention and control requires a team effort.”

A live setting
Conventionally, training is conducted by the office’s infection prevention coordinator or a consultant in a live setting. Meaning, the practice’s staff is gathered and the topics are covered face-to-face. Live training could be presented to a large group, too.

“Whether it’s the local dental society, sponsored event or a major dental convention in a popular destination, live training allows the attendee to get out of the office for a day or so,” Daw says. “Many times, group training outside the office is a great opportunity for team bonding as well. Plus, there are those who prefer the face time. Like with online live training, an attendee can ask questions either during or after the presentation and participate in activities that solidify the content of the training.

“Speakers can also adjust their presentation style based on continuous audience non-verbal feedback,” she adds. “A skilled speaker can look at a large group and tell if the training elements are well absorbed, or if they need to shift gears and revisit or drill down on a concept.”

In other cases, training can be conducted on site. “This is great for practices that prefer a live presenter, but either can’t take their entire team out for training, need training but can’t make it to an event on a certain date or time, or who prefer the personalized attention that a live trainer can provide,” Daw says. “This is a highly customizable option because the trainer assesses the practice and builds a training session around their needs. A smaller group size also provides opportunities so that the information sticks. People are showing positive responses to experiential learning. Many people find the hands-on, personalized attention invaluable.”

Online training
Training need not be in person; it can also be conducted through prerecorded materials or virtually.

“The nice thing about prerecorded or online modules is that participants can revisit the courses as often as they like according to their own timeline or if a refresher is needed,” Daw says. “Some things to consider: Are we doing the same module or watching the same video year after year without updates? Also, how are we going to ensure interaction and retention? It’s not enough to provide infection control training; you want to do it in a way that lends itself to the team easily recalling the information as well.

“In addition, I can tell you from experience that people start the prerecorded online video, or press ‘play’ for the DVD, and then tune out. There’s little accountability and the systems I have seen are limited in exercises and interaction to keep the participant engaged. The last thing a team member wants is to sit through an hour or so of the same video year after year that does not keep them engaged. One office I visited had been watching the same VHS tape for over a decade.”

The internet affords the opportunity for training to be conducted in real-time via a conferencing application.

“Some prefer a live trainer and online live training is great for broadcasting the same message to a large group,” Daw says. “This style also allows information to be tailored to the audience background, interest level and needs in real-time. Training can be customized so that information is presented in bite-size chunks for those with difficulty focusing for long periods of time.

“I’ve participated in several online live events that allowed for an opportunity to ask questions,” she adds. “The attendee is able to leave with the answer immediately, which is a nice bonus. It’s hard, however, for the presenter to gauge the audience level of interest because there is no feed-back loop. In-person training at least allows for the presenter to assess if the participant is lost on a concept.”

Staff involvement
The best training, Eklund observes, generally occurs when staff is actively involved. “You want to engage the staff;” Eklund says. “Not only just sitting and listening, but being able to interact, to be able to not only ask questions but also to make suggestions or say, ‘I know you say do this, but let’s talk about the challenges,’ and you can use part of that training to actually engage staff in problem solving. I’ve written policies and procedures for many, many years. I have learned through experience that even when the written policies and standard operating procedures (SOPs) are consistent with the CDC recommendations, consistent with specific OSHA regulations, and other state and local requirements, they may not be written effectively to be implementable. Clear, concise policies and standard operating procedures require communication and interactive review.

“It is also extremely important that staff believe the implementation of the policies and SOPs are important for their safety and for patients’ safety,” Eklund continues. “It is far less effective to say to your staff, ‘You must do training. Now, here: Sign this paper saying that you have attended the training.’ That’s not really training and education, that’s just attendance. Education should be much more engaging.”

Encouraging staff to make the most of training is also key. “People may take infection control training because it is a mandatory requirement or because they truly want to learn more,” Daw says. “Because there are only so many hours in the day and it all seems to be accounted for, make the most of infection control training by participating in training regularly and select a method that engages the participant. This helps them to retain and then apply the information, which ultimately is the goal.”

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