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DENTAL SPECIALTIES
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BEST PRACTICES
Thinking about teledentistry? – buyer beware

PAST, PRESENT, FUTURE

A look at how far the dental industry has come from the analog products of the past, to today's cutting edge technologies and materials, to visions of what dental products and practices might look like in the future.

[ by Noah Levine ]

NEW DENTAL PRODUCTS

[ SOFTSMILE, INC. ]
Vision
Designed to make in-house clear aligner case design and production simple, this software provides guided workflows to make the production process accessible to more practices.

[ ANGELUS USA ]
Splendor™ SAP Single-Adaptable-Post
With a customizable sleeve for better canal adaptation and easier placement, these endodontic posts can fill a need.

[ UV ANGEL ]
UV Angel Air
Designed to fit seamlessly into any clinical space in place of a standard ceiling light, this air filtration system uses ultraviolet light to deactivate airborne viruses.

DENTAL TECHNOLOGY

PAST, PRESENT, FUTURE

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[ by Noah Levine ]

RESTORATIVE DENTISTRY

Material Thoughts
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DENTAL PRODUCTS REPORT
NEWS AND SOLUTIONS TO DRIVE PRACTICE SUCCESS
JUNE 2020 | VOLUME 54 | ISSUE 6
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Designed to be user friendly but powered by artificial intelligence and machine learning algorithms, SoftSmile aligner software allows orthodontists to create clear aligner treatment plans completely in-house. The software platform creates a 3D model of the treatment plan, including a visualization of teeth roots and lower jaw movements throughout treatment. The software’s AI generates key aspects of the treatment plan including the final set up of aligned teeth based on biomechanics to model optimized teeth movement and the number of aligners needed to achieve the desired results. The orthodontist maintains control of the process throughout. The SoftSmile software is not yet FDA 510(k) approved, but orthodontists can request use on a trial basis.

Why this software stands out:
Going beyond treatment planning, SoftSmile is designed to be an end-to-end solution, and the software automates the 3D printing to simplify the aligner production. The company is working with 3D printing company Carbon to tightly integrate the software with the manufacturing platform to make distributed dental printing accessible to more orthodontists and more patients.

SoftSmile, Inc.
softsmile.com
CIRCLE RS #2

Splendor™ SAP
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CIRCLE RS #3

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Why this system is different:
With its integrated LED light, UV Angel Air is able to hide in plain sight. Replacing existing ceiling lighting, the system is easy to integrate into many spaces and does not take up any additional space in the room. Because it is always working in the background, there is no need to adjust clinical workflows.

UV Angel
888-277-2596
uvangel.com
CIRCLE RS #4
PAST, PRESENT, FUTURE

DENTAL TECHNOLOGY | A look at how far the dental industry has come from the analog products of the past, to today's cutting edge technologies and materials, to visions of what dental products and practices might look like in the future.

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NEXT MONTH: The 2020 Technology Census. Dental Products Report asked you about the technologies you use in your practices, the technologies you’d like to use, and those you feel offer few benefits to practices and patients. Find out where you fit on the dental industry technology spectrum and see what your colleagues think about the innovative technologies changing the dental industry.

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Sometimes There’s Nowhere to Look But Ahead

The Spring of 2020 is one no one in dentistry is ever going to forget, even though I imagine most of us would like to chuck it in the bin and ask for a mulligan. But now we’re approaching the middle of the year and the start of summer, and while dentists are back to caring for patients, things are definitely different.

Our present situation is hardly full of comfort and stability, but it’s critical for us to be here now for patients with oral care needs, and for the dental professionals employed in practices as well. For many practices, the present reality includes a constant scramble to find suitable PPE, while we adjust to new practice workflows and new safety precautions for clinicians and patients alike.

But as always, our past informs our present, and long before the coronavirus pandemic upended the world, the dental industry was experienced in aseptic practices and preventing the spread of infectious diseases. Infection control is a part of the everyday operations of dental practices, as clinicians are used to disinfecting surfaces between patients, properly cleaning and sterilizing instruments and equipment, and practicing dentistry while wearing PPE.

While there might be some extra steps while cleaning practice areas, and there are certainly some extra layers of PPE on most clinicians, the concepts are not new, and for the most part, practice operations are not hindered by new infection control guidelines as much as by shortages of PPE supplies and social distancing recommendations that limit the number of patients a practice can schedule in a day.

So while past training has practices ready to meet even the unexpected challenges of the present, what you do now is setting you and your practice up for the future. Are you in regular communication with patients? Are you explaining all the things you’re doing to keep them safe while in your practice? Are you looking at what investments you can make in your practice now so you’re ready with new services when practices ramp back up to full speed once again?

The future is always an unwritten page, but text to fill it is based on the present, which of course, is built from the framework of the past. So, while this cycle is certainly one way to look at what we’re experiencing during this pandemic, it’s also a great lens to explore dental products and to size up what’s likely coming next. That’s exactly what we do in this issue’s cover story, Past, Present, Future. The article looks at the current state-of-the-art products in different areas of dentistry, while also showing how far we’ve come, and where things look to be headed.

We solicited input from clinicians and researchers from throughout the industry to build a picture of what the present really looks like on the cutting edge of dentistry. The coming future might be amazing, but the present is awesome as well. We hope this article helps showcase how much is already available to the dental industry today, as the technologies, materials, and services dental practices have at their disposal are ready to make dental care faster, safer, and easier for clinicians and patients alike.

Of course, this issue isn’t only about looking back to find the way forward. We also present data from our 2020 Materials Survey where we asked you what types of materials you prefer to use, how many you keep in stock, and how you evaluate new material options prior to bringing them into your practice.

But to return to the present, we also continue our special report on Dentistry During COVID-19, with new features examining what’s been done differently as practices reopen, strategies for getting patients back on your schedule, and managing to bring your team back on board after furloughs and shutdowns. There seems to be some light ahead for the dental industry as the wave of reopening ripples across the country. The lessons from the shutdowns were hard ones to have to learn, but they’ve put the industry in a stronger position today, where we’re set up for an even brighter future.

[Mike Hennessy, Sr.] Mike Hennessy, Sr. is chairman and founder of DPR’s parent company, MJH Life Sciences™.

Questions or comments? nlevine@mmhgroup.com
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The essential resources we provide to our Dental Resource Program members help them expand access to care and be a dental home to kids in need. Without them, low-income families would have no other place to go. Thanks to support from TSC EcoSolutions, last year our members provided dental care and preventive services, and the chance for a brighter future to more than 500,000 kids!

NEW DENTAL PRODUCTS

PERSONAL PROTECTIVE EQUIPMENT

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EndoSequence® BC Liner™ Blue
EndoSequence BC Liner is a next generation bioactive hybrid resin optimized for use with BC Sealer and BC RRM. This versatile, durable (241 MPa), and moisture-friendly material is dual cure and chemically bonds to dentin without the need for a bonding agent. The new Blue color version is optimal for office barriers and allows the clinician to easily visualize the material upon re-entry into the pulp chamber. The cost per application is described as economical when compared to other colored office barriers.

ORAL AEROSOL EVACUATOR

The HoverShield
Designed to provide protection for dentists adjusting to new PPE guidelines in the wake of the pandemic, The HoverShield is a clear acrylic shield that mounts to a dentist's existing dental light via an adjustable arm to protect the patient and staff from the splatter created in the dental chair. It can be easily positioned as needed depending on the procedure, and can be cleaned with Cavicide™ wipes from Metrex between patients. It is said to offer an extra layer of protection and help for those who cannot tolerate individual face shields.

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GUM® Soft-Picks® Comfort Flex Mint assist patients when it comes to between-teeth cleaning. Delivering a whole-mouth, minty fresh sensation, they are the newest offering in the GUM line of Soft-Picks, which includes GUM Soft-Picks Original and Advanced, clinically proven to clean between teeth as effectively as string flossing. They feature flexible rubber bristles that slide between teeth for gentle, safe, and effective food and plaque removal. Its bristles massage and stimulate the gums, helping to keep them healthy.

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EXTRAORAL AEROSOL EVACUATOR

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PPE SHIELD

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OROFACIAL THERAPY

Speed2Treat™ Home Healing Kit for Head, Neck & Jaw Injury
Developed by orofacial pain experts, the Speed2Treat kit is available to medical and dental professionals to prescribe for their patients, and is designed to minimize patient suffering, reduce dysfunction, and help prevent a musculoskeletal injury from progressing. It provides an evidence-based 4-week care plan along with multiple easy-to-use components, including a temporary overnight oral appliance, patient self-care instructions, and online resources.

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NEW DENTAL PRODUCTS

[ SURFACE DISINFECTANT ]

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AJK Engineering
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[ DISINFECTANT DEVICE ]

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Like other health care sectors, the dental industry was caught off guard by the COVID-19 pandemic. Practices were forced to shut their doors and could only see patients for emergency care or by using teledentistry. Many practices are just beginning to reopen after being closed for weeks or even months.

“Before the coronavirus hit, hard, we were looking at our best year on record,” Steve Thorne, CEO of Pacific Dental Services in Irvine, Calif., said during a recent panel discussion hosted by the American Dental Association’s Health Policy Institute. “I think our data showed that the industry would do somewhere near $150 billion in 2020. Our estimates for this year have dropped to $52 billion. To say it’s been devastating to the industry is a massive understatement.”

There is no way the industry can recover quickly from such a massive upheaval; aside from that, few predictions can be made. What will the “new normal” look like?

“There’s so much that we don’t know, and I am not sure if anyone can predict what the new normal will be,” says Karen Gregory, RN, director of compliance and education for Total Medical Compliance, a company in Indian Trail, North Carolina, that offers Occupational Safety and Health Administration (OSHA) and Health Insurance Portability and Accountability Act (HIPAA) training and consulting. “I do believe that there needs to be more documented science on how this is spread in an airborne manner. Our dentists, our hygienists, our assistants seem to be at increased risk because of the way dentistry is performed. What is the exact level of protection they are going to need?”

Preparedness Plans
At a high level, practices will need to have business and operation plans in place to better deal with how the practice will function should this type of crisis happen again.

“We need better planning and development of business continuity plans and safety plans,” says Mary Borg-Bartlett, president of SafeLink Consulting in Cumming, Georgia. “This pandemic has taken everyone off guard, from the availability of PPE (personal protective equipment) to financial readiness.”

It’s important that business owners have a contingency plan in place. This plan should outline every type of situation that could interrupt business operations and include strategies to overcome those obstacles at a moment’s notice, Borg-Bartlett says.

Pandemics such as COVID-19 also underscore the need for proper safety planning for the office. OSHA’s Guidance on Preparing Workplaces for COVID-19 can help practices develop an infectious disease preparedness and response plan, Borg-Bartlett says. OSHA also offers a COVID-19 guide specifically for dental practices. These guidelines can be accessed at osha.gov/publications.

“The importance of a health and safety plan has also come to the forefront,” she says. “Those plans must also be updated to now include airborne precautions. Dental practices are prepared for working with bloodborne pathogens and do not have the comprehensive workplace-specific plans that addresses standard, contact, and airborne precautions.”

Finding out if a patient or staff member is ill is key in preventing the spread of infection. The Centers for Disease Control and Prevention (CDC) urges sick employees and patients to stay home to mitigate the spread of the virus.

“This pandemic has also made business owners more aware of the expectations of their patients and staff,” Borg-Bartlett says. 

Expect more mandates and investments in measures to protect patients and staff from diseases such as COVID-19.

[by Robert Elsenpeter]
need for staff and patient screening,” Borg-Bartlett says. “Employers must also take the initiative to send staff members home when they are sick. COVID-19 can infect any of us, so I feel that it has opened our eyes to how vulnerable we can be to a virus that is nondiscriminatory.”

Updated Mandates
Expect agencies such as the CDC and OSHA to alter their recommendations and regulations to better suit the current risk landscape. It’s important to regularly check for the most recent updates from trusted sources to ensure that all safety protocols are up-to-date.

Practices can expect stricter respiratory protections, according to Leslie Canham, CDA, RDA, a speaker and consultant on OSHA and dental infection control. Anticipate widespread use of N95 masks, she says, but realize that just passing these out won’t cut it. “If someone is going to wear an N95 respirator, there are OSHA regulations that surround what employers have to do,” Canham says. “They have to provide fit testing for each person wearing a respirator.”

A fit test determines whether the mask properly creates a seal around the wearer’s nose and mouth, she says. Respirators are not one-size-fits-all, and an individual may need a different model.

Historically, OSHA mandated annual fit testing, but the administration has temporarily relaxed that requirement. That letup may have led to some misunderstandings. “Currently, OSHA has lifted the annual fit test requirement, but many dentists are confused, thinking that OSHA has waived the initial fit test. But that’s not the case,” Canham says. “It’s a little scary to think that you could just put someone in a piece of protective gear and assume that is going to be protecting them. Fit testing is the only way to confidently confirm that the employee is protected.”

Employees will also have to fill out a medical evaluation questionnaire that must be reviewed by a licensed physician, Canham adds. Plus, staff must learn how to correctly use an N95 mask. “They have to be trained in how to don it properly and how to remove it without contaminating themselves. They also need to learn how to perform a seal check to make sure every time they don it, they are checking to make sure it’s doing its job. There’s no sense in wearing an N95 respirator if it has leaks or if one is able to still inhale potentially infectious aerosols,” she says.

The COVID-19 closures have been devastating to practices’ bottom lines, but reopening will require special attention to safety. “We have to figure out a way to do it, but we also have to figure out a way for dental care to be delivered safely and to be able to assure workers that you’re going to be safe in the work environment,” Gregory says.

Designing for Distancing
Segregating patients and staff from unnecessary contact with each other can help mitigate transmission of infections. OSHA and the CDC recommend placing more barriers between operatory areas, which tend to be open to provide quick access to patients, Borg-Bartlett says. It’s also safe to expect changes to the reception and waiting room areas, she adds.

“Perhaps the future design of a dental office will be affected by this pandemic,” Borg-Bartlett says. “Front waiting areas may need to be more spacious to allow for physical distancing in that area. Also, the open concepts with the front office staff may need to be better designed to protect the front office staff from close patient contact.”

Environmental changes in the practice can also go a long way in reducing the spread of COVID-19. OSHA notes the need for better local exhaust ventilation systems that capture and remove mists or aerosols generated during dental care, according to Borg-Bartlett.

“Personal aerosol-removing devices are available that will help capture the aerosol during procedures, and many offices we work with are incorporating these devices into their everyday patient treatment,” she says. “Because this virus is viable in the air for a period of time, OSHA has recommended, when possible, to use directional airflow, such as from fans, to move the air through staff work areas, before patient treatment areas, and not the reverse. This may take hiring a qualified professional to assess the need to ensure that ventilation removes, rather than creates, workplace hazards.”

Expanding PPE
Gone are the days when PPE consisted of just gloves and masks. Use of PPE, including N95 masks, gowns, and face shields, will rise sharply among staff members. “Think face shields will be the norm,” Canham predicts. “We will be required to use N95 respirators for aerosol-generating procedures and, likely, level 3 masks for other procedures. When it comes to the clinical jacket, I am quite fond of disposable gowns that are easy to remove and discard between patients. It would be something that solves the laundry problem, and people can wear scrubs underneath them.”

N95 respirators are not like traditional surgical masks. It’s hard to breathe in these masks, which, over an eight-hour day, can have health implications, according to Gregory. “Someone might feel a little more tired at the end of the workday,” she says. “If you have an underlying health issue, will you even be able to tolerate an N95 respirator all day long? There are a lot of unknowns, and I don’t think there are going to be quick answers.”

“I do think that clinicians will adjust to this process,” she continues. “There will be workers (who) cannot wear a tight-fitting N95 respirator. But there are options such as a powered air-purifying respirator. (Although) this option may provide protection, workers may sense their visual field is impacted.”

As individual states balance reopening with the health of their citizens, practices should prepare for a second wave of COVID-19 later this year. “Because we don’t have a vaccine and there are reports about the uncertainty of long-term immunity once you’ve had the virus, it really raises a lot of questions as to how are we going to move forward,” Gregory says.

Whatever the future brings, it’s clear that dental care will be dramatically different. But it’s important to balance the need to compensate for missed revenue with the need to protect patients and staff from COVID-19.●
Patients might feel hesitant about coming back to the dental practice after the stay-at-home orders are lifted and the Centers for Disease Control and Prevention (CDC) advises that routine dental appointments are allowed once again. We spoke to dental professionals about how to handle getting patients comfortable about returning to the practice and winning back their trust.

Madi Bullock, head of public relations for Weave, says getting back to work will take time and be different for everyone. Remote work strategies and tools practices are using now are here to stay, such as working from home, texting patients, curbside pickup, wellness forms, and email marketing.

“We’ve seen businesses get creative in how they can safely ‘stay open.’ That has created new channels for businesses to communicate effectively with their customers that we hope to see continue even after stay-at-home orders are lifted,” Bullock says.

Rebekah Pryles, DDS, an endodontist in White River Junction, Vermont, says that they have been seeing patients on an emergency basis during the COVID-19 pandemic. To bring comfort to the staff and patients, they have been following the guidelines of the American Dental Association (ADA), Occupational Safety and Health Administration (OSHA), the CDC, and local dental societies. They also continue to monitor what those guidelines are to keep up with their rapid change.

“At the beginning of this, the guidelines were changing every single day. We make it our best effort to read them every morning and implement things immediately. So, the staff knew that we were taking things incredibly seriously, and our patients knew that we were doing what we could based on the best evidence,” Pryles says.

Pryles says that the “best evidence” included many things. Early on, they learned that N95 masks were the most appropriate and made the switch. Also, Vermont recommended creating partitions between operators to create a closed space, so their practice did that.

“We implemented all disposable PPE for the staff, and we explained these things and the reasoning behind them to our staff and also to the patients, to show them what we were doing to keep them safe in the practice setting,” she says.

Regarding the personal protective equipment (PPE) changes, the practice made them early enough that there weren’t shortages at the time. They could obtain some of their PPE equipment as they usually would. However, once the state of Vermont designated their practice as an ER diversion site, they were also able to obtain PPE from the state as well.

Set the Proper Expectations About What is New Upon Returning

Katrina Sanders, RDH, a practicing dental hygienist, dental hygiene educator, and international speaker, says that for patients, there has always been a fear around dentistry. Moreover, patients don’t like surprises, especially when it’s about something of which they are afraid.

“There’s always been a fear about dentistry. There are smells and sounds; it’s a 4D experience going into the dental practice. And now, let’s add on the extra layer of uncertainty around COVID-19,” Sanders says.

“The more that we can support our patients and educate them about the things that will look and feel or smell different, the more prepared they can be to step back into the operatory.”

Some of the changes Sanders anticipates will begin before the patients arrive. Sanders says patients should get a phone call before their appointment, screening them for exposure and symptoms of COVID-19. This questionnaire will delve into any inflammatory conditions the patient might have, and for a good reason.

“We have noticed that there are certain types of inflammation that have elevated the individual’s risk for propagating or potentially losing their life to SARS-CoV-2,” Sanders says.

The more that we can support our patients and educate them about the things that will look and feel or smell different, the more prepared they can be to step back into the operatory.”

Dental professionals offer guidance about how to handle getting patients comfortable and alleviating anxiety about returning to the practice after the COVID-19 pandemic stay-at-home orders. [by Terri Lively]
patients might be used to showing up early and getting coffee or leafing through magazines. However, practices need to limit congregations of people, so there may be fewer patients allowed in the waiting area, or, in some cases, no patients in the waiting area; they will come in directly from their cars.

“A lot of people are doing a texting service saying, ‘I’m in spot number one.’ When your hygienist is ready, they retrieve you from your car to limit the number of interactions within the dental practice,” Sanders says.

Pyles says one of the most important things they have implemented in the practice to make patients and staff feel safe is the heavy screening of COVID-19 symptoms and exposure ahead of appointments. Patients that don’t pass the screening or present febrile are not treated.

“We are at a point now where patients don’t even come into the office,” Pyles says. “They call when they arrive, and a staff member meets them on the front porch to take their temperature.”

The Vermont clinician sees these safety measures continuing in the short term until vaccination or widespread testing becomes available. Recent ADA guidance supports the early steps Pyles and her partner, Brook Blicher, DMD, made to keep everyone as safe as possible from the start.

“But I don’t think this is permanent in dentistry. I should make that very clear,” Pyles says. “These are temporary fixes for a short-term problem, and once COVID-19 is managed, I hope and foresee that these things get taken away.”

Once you get to the operatory, Sanders says all dental professionals should perform impeccable hygiene, especially hand hygiene. They should also encourage patients to do the same. Sanders says patients often stick their hands in their mouths to show the team where the pain is.

“No, we may be asking them not to stick their fingers in their mouths and instead describe where the pain is coming from,” Sanders says.

Sanders says that dental practices also may provide mouthwashes before dental visits to reduce the viral and bacterial load of the patients’ mouth before arrival.

The operatory will also look different, with more plastic and disposable things and less paper. Display units will likely be put away, along with samples, because they will get contaminated from patients’ aerosolized mouth droplets.

“We have taken the time within the dental community to examine what those risks are and ultimately are working to remove them so that we don’t have to sanitize or sterilize them in between every patient,” Sanders says.

Also, the staff will look different with larger masks, like level 3s or N95s, and maybe even plastic shields. Staff will also probably wear disposable or laundered garg with hair coverings like bonnets or surgical caps. All of this equipment is hot to wear. Sanders says you might tell the patients that the dental office might seem cooler than before in the past in an effort to help keep the dental team comfortable.

Finally, Sanders says you should warn patients that you might need their patience. Appointments might run a little late. Sanders says that turning rooms, wiping them down with hospital-grade disinfectants, and changing PPE between patients could delay appointment starts more often.

“We anticipate that may take a long time. And so if you’re looking at your watch, waiting for us to bring you back, know that we’re not sitting in the backroom eating chicken fingers and enjoying a soda,” Sanders says, laughing. “We are working around the clock to be very sterile, sanitized, and very clean.”

Winning Back Patient Trust Takes Consistency and Communication

Bullock thinks a significant obstacle to getting patients back into the office will be a lack of trust and a sense of security. She says it’s hard for consumers to know if it is the right time or if it is safe, or even necessary, to get back into the office for routine or elective appointments and surgeries. To overcome these challenges, Bullock recommends frequent and effective communication.

“This lack of trust can stem from a lack of information communicated, which, in turn, can exacerbate the problem and spiral into fear and the unknowing,” Bullock says. “Knowledge is power—arm them with that.”

Lynne Slim, RDH, is a dental hygienist writer and speaker has practiced for 40 years. She says her patients have a tremendous level of trust with her based on her background, experience, and active role in the industry as a writer and researcher. However, she thinks it is also based on predictability. When people and practices become erratic, that can erode trust.

“Trust is also cumulative. Whatever you have promised people, they have certain expectations. When they come in as new patients, it’s like being presented with a blank check. It’s like deposited money, and you have to treat it like that. Do what you say you are going to do over and over again. Patients counted on us to do that,” Slim says. “In my practice, where I was for 12 years, I was confident, so my patients felt safe.”

Bullock recommends opening new communication channels to connect with customers and share with them the practices you’re putting in place to keep communities and people safe while serving them. For example, you can let patients schedule appointments and make payments over text. Reduce paper by completing wellness forms online and increase communication through email marketing about all the changes in the practice day-to-day. Practice analytics can come in handy here, as well, Bullock says.

“Similar to grocery stores, we’ve seen success in targeting business hours to customers with impacted immune systems and with the right tools that can be done easily and efficiently,” Bullock says.

When it comes to alleviating anxiety about infection zones in the office and rebuilding trust, Bullock thinks careful attention to the tone of your communication, and a message of togetherness is essential. She also thinks open lines of authentic and empathetic communication are crucial, as well as being responsible for the infection control practices put in place. Following these guidelines will help people understand and empower them.

“This may be a waiting game, but it is also a creative game; how creative can a business get to serve safely,” Bullock says.

As far as dealing with patient anxiety, Pyles says so far, most of their patients are grateful the practice is open to relieve their pain. Pyles says they are comforted also to see the practice is following the guidelines.

However, if a patient were reticent to come in, the conversation about precautions you are taking is a critical one between doctor and patient to make them comfortable getting the care they need.

“Some may still not feel comfortable, and that’s something we have to recognize as practitioners. We can’t make everybody comfortable in a pandemic setting, and that’s okay,” Pyles says. “We need to do our best to keep everybody safe.”

Many practices might ask for payment before you even come in to eliminate stopping at the front desk on the way out. Or they could be going paperless or using epayments to become touch-free. Plus, moving forms online can be daunting to less tech-savvy patients.

“If they don’t feel comfortable going out to all the platforms to complete a lot of this content or they need help or support with that, we want to be able to help our patients with that,” Sanders says.

Sanders says it is also vital to communicate to patients that before opening the practice, the team has been “working around the clock” researching information from the CDC, OSHA, the Organization for Safety Aspesis and Prevention (OSAP), the ADA, and the American Dental Hygienists Association (ADHA) about what guidelines they need to meet to be safe.

“We are not opening our practices until we can promise that we are as safe as possible,” Sanders says. “We have been working tirelessly as an industry to ensure that we are aligning with what those guidelines are to protect our patients best.”

“Honest and open communication has always been important in dentistry, and it remains incredibly important now—even more so than a non-pandemic setting. So, the more you can explain to staff and patients why you are doing what you are doing, as well as the guidance that you are following to make your decisions, it will go a long way in making people more comfortable,” Pyles says. “Transparency in dentistry has never been more important.”

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Since March, the practice day-to-day has been anything but typical. But with stay-at-home orders having been lifted for some, dental practices will be seeing patients for non-emergencies once again. Among the many challenges practices will face as they reopen will be rebuilding the dental team. The team needs to be rebuilt and get back to business. How will the team rebound while dental care is anything but typical?

It’s an easy question to answer. Dentists and hygienists are concerned about their jobs and want to get back to work, according to Lynne Slim, RDH, MS, a Georgia-based dental hygiene writer and speaker. The Occupational Safety and Health Administration (OSHA), which was founded to protect employees at the workplace, says hygienists are not essential workers. However, dental practices see hygienists as crucial to a successful reopening.

“Right now, I think that it’s an impossible choice for the RDH to go to work, business as usual, knowing that we’re putting ourselves and our families at risk.”

Joe Fogg, CEO of onDiem, a national, on-demand dental staffing firm, and his team have been talking to dental offices and dental professionals about how the shutdown has impacted them. Not surprisingly, the disruption has been significant. Making plans to move forward is challenging as rules and guidelines change daily.

Regarding staffing specifically, there are a range of issues, Fogg says. Some staff are afraid to return due to the risk of contracting COVID-19 in a dental practice, while others are ready and willing to go back. Still other team members wish to return to work but do not have access to regular childcare, as many daycare centers throughout the country are still closed. Plus, if any team member is exposed to COVID-19, they must self-quarantine for at least two weeks.

“It’s been so significant,” Fogg says. “From the loss of income, to making plans to go ahead that change on a daily basis, to the loss of benefits due to the dental professional or their partner losing their job, all of these are different challenges.”

onDiem believes health benefits shouldn’t be a luxury, Fogg says. The company provides access to medical, dental, and vision insurance through a comprehensive nationwide network for all dental professionals working through the platform.

“We offer our dental professionals medical benefits so the practice doesn’t have to worry about whether their favorite temp is covered,” Fogg says.

The lack of life insurance or health benefits is a problem for many RDHs, Slim agrees. However, hygienists have a high risk of exposure due to the nature of what they do for patient care, and these risks are more than health related. FAIR Health, an independent non-profit health insurance data collection agency, published a brief on March 25, which estimated that the average charges for patients treated for COVID-19 range from $42,486 for a patient with no complications or comorbidity to $74,310 for patients with major complications or comorbidity.1

“This is not an easy time for a dentist, employer, for a hygienist, or any of us in dentistry,” Slim says. “But I do think dentists have a moral responsibility to protect workers and create financial security for their workers and their workers’ families.”

How to Rebuild the Team
There have been two extremes regarding the management of the team for dental practices during the
COVID-19 pandemic stay-at-home orders, according to Tina Clarke, RDH, and instructor at Lane Community College. Some offices are having weekly meetings to stay in touch and talk about what life looks like, which she sees as a healthy team approach. Others are not, and in some extreme situations, there is zero communication. In one case, an office manager said they would be starting patients on a specific date with no conversation with the team about availability, new protocols, and the team’s comfort level, Clarke says.

“That is a big red flag of team building and having a cohesive team,” she says.

Clarke recommends that before reopening, practices should start an open conversation about staff concerns. Discussing ways to incorporate everyone’s comfort level is crucial, she says.

“That way, when the doors open and you’re bringing in patients, it’s not this scramble of, ‘Oh, wait, who’s doing what? Am I doing this? I’m not comfortable with that. How is this happening?’” Clarke says.

The whole practice will feel the repercussions of the post-pandemic new normal, Clarke adds. The front office staff will have different ways that the practice will greet and intake patients, such as staggered entrances and exits. This could also mean different scheduling days for different types of dentistry (i.e., two days per week are for operative dentistry, and two days are for hygiene appointments), Clarke says.

Another significant shift will be in the area of PPE due to new infection control protocols that require changing outerwear while patients. Practices will need to decide if they are moving to disposables or reusables, and the related ordering, storage, disposal, or laundry means to do that, Clarke says. These shifts will take some planning before they become the new normal.

“These changes may not always be the case, but it could be for the interim starting back up and until there’s a vaccine,” Clarke says.

However, Clarke believes the most significant shift in care will be on the hygiene side. There has been a push for practices to implement high volume evacuation (HVE) during hygiene appointments. However, the addition of HVE to appointments where the hygienist is using a scaling system, polishing, or even air-water could create poor ergonomics and additional strain on the hygienist’s body, she adds.

“So, now you are going to have to be looking at staffing reallocation,” Clarke says. “Is it going to be a dental assistant that is dedicated to hygiene to assist with the HVE?”

Practices with proper team rebuilding are those that are having an end-of-day check-in, allowing the team to recap the day and identify areas of concern, Clarke notes. This plan would be a way to find holes in the net that need to be addressed. The practice’s OSHA officer will be key, too.

“It boils down to having very open and honest communication,” Clarke says. “And then everybody feels very safe to share that communication. That puts a lot on the leader in the office, whether it’s the dentist or the office manager.”

**What to Watch**

The hygienist community should be relying on evidence-based science, Slim says. There are a lot of suggestions being circulated, some of which have no evidence to support them, she adds. For example, some dental practices are combining regular mouthwash with hydrogen peroxide as a pre-rinse, but there is no guidelines that back up this protocol, she notes.

“Right now, in the midst of the COVID crisis, there are too many unknowns about safety issues, so we need to follow guidance from OSHA when returning to work,” Slim says.

To avoid contamination, hygienists should be putting on and taking off PPE using the buddy system in a room separate from the patient, Slim suggests. As the pandemic continues, dental practices will have to balance the need to provide dental care while minimizing risk to patients and RDHs, she adds.

“The hygienists are in the dark. When somebody tells them to do something, they sometimes accept it hook, line, and sinker because they don’t know any better or they are afraid of losing their jobs,” Slim says. “They should learn how to use the best resources and evidence, and pretty much all we have to follow right now are the OSHA and CDC guidelines. That’s what I would do and what I will continue to do as I go back into the operatory.”

Slim also suggests that the dental community return to asepsis as taught in dental school. Over the years, dental professionals have tended to relax these standards, so Slim supports a back-to-basics approach. She also recommends the work by Noel Kelsch, RDHAP, and her infection control training, articles, and courses.

“Review infection control and make sure that there are no breaks in the chain, so to speak,” she says.

Clarke has found that some hygienists have been asked to take a pay cut in anticipation of fewer patients coming in for appointments. This will only increase the challenges for rebuilding the team, especially as hygienists are hearing their position is high-risk during the pandemic.

Leaders should validate their team’s fear, but she cautions against making decisions based on these emotions because it may not be the best decision in the long run. “When the team is talking it through, emotions can run high,” Clarke says. “When that happens, take a five-minute break and when the meeting resumes, bring it back to the facts of what OSHA and the CDC indicate for current protection for the clinician and patient.”

**A New Staffing System**

Dental practices have always struggled with the overall cost of labor, Fogg says. As the labor rates rise, the practices have to ramp up production to cover the expenses. Also, staffing agencies’ fees add more to the overhead. All of these factors affect the business, and for many practices, it gets “pretty tight,” Fogg says.

OnDiem is responding to the uncertainty dental practices are facing regarding staffing availability and the need to manage overhead costs by launching their new On-Demand functionality, onDiem Pro, to their platform as a public offering. onDiem Pro is usually a subscription service, but onDiem is offering it for free to solo practices for 90 days. The new technology allows dental practices to have a flexible schedule with a contingent labor force. They also extended terms so practices using onDiem for staffing will have time to collect receivables. In addition, the company lowered the labor markup to 20 percent, which is essentially the costs a practice has for their permanent staff.

“Our goal was to offer practices on-demand, flexible staffing that’s priced comparable to their team and then defer the payment of that payroll for 30 days,” Fogg says.

Dentists use onDiem in different ways. Many times, practices will find they have a temp through onDiem that’s a great fit, so they book them over and over on different days. Fogg says it’s like the dentists are using onDiem for payroll and scheduling. Some doctors want their team to sign up for onDiem to be able to work on the days he or she can’t provide a full schedule.

“Practices aren’t the only ones who need flexibility right now,” Fogg says. “Team members are dealing with the question of how to simultaneously protect their families and provide for them. Hard decisions are being made at home. We want to be there with options for them, when and if they choose to resume working.”

The onDiem team has been developing this new feature to launch this quarter for 18 months, long before the first cases of COVID-19 were making headlines around the world. The timing allows onDiem an opportunity to help practices rebook with low-cost labor solutions and to start to build the business up again. At the end of the 90 days, Fogg says, there is no obligation.

“It’s us doing our part to help the community get back on its feet, so it can get back to the patients,” Fogg says. “Our community is hurting on both sides, practices and professionals. If offering onDiem Pro for free can help practices rebuild, and support the needs of professionals, then we’re all for it.”
MANY OF THE ADVANCES IN RESTORATIVE dentistry are driven by advances in materials. Every generation of new composites, adhesives, and every other dental material category aims to achieve an end result closer to natural dentition in looks, function, and durability. They also aim to be easier to use and more convenient for clinicians and patients alike.

This consistent development of new material choices means dental professionals are constantly challenged to stay informed of all of the options that could bring benefits to their practices and their patients. But adopting new materials can be more complex than opening a package with different branding on the outside. New materials often mean new clinical workflows, sometimes new operatory equipment, and even new training. This means changing what’s used in a practice is a choice rarely made on a whim.

To find out what goes into those decisions and what types of material choices dental professionals are making of late, Dental Products Report conducted our 2020 Materials Survey. We asked you, our audience, about your materials decisions and the reasoning behind your choices. Read on to see how your material preferences fit with those of your peers, as well as for material advice from Editorial Advisory Board Member Dr. Sarah Jebreil.
Bonding Decisions
The perfect bonding agent has been an area of debate forever. There are so many bonding agents it hard to know which one really is the best. Bonding is case sensitive and technique sensitive. So, do you choose one go-to agent for everything, or do you choose a plethora for each situation? Do you choose according to colleagues and articles’ approval, or what has been tried and true in your hands? Also, how expensive is the risk if this product fails in your hands or fails to deliver as promised?

I don’t know about you, but the health of my practice relies on the strength and predictability of my bonding agent because I use it for almost every procedure. Because it is such an essential part of my practice, I can’t afford to just try something new. When I started practicing, I used the bonding agent that was given to me at the practice I was associating. After a time, I started to realize I was having a lot of failures with de-bonding and patient sensitivity. I immediately ordered my tried and true bonding agent that I was familiar with since dental school, and everything improved.

Switch Decisions
Other materials, such as liners and matrix systems, are easier to change as they are not as impactful. It is noted that many clinicians debate for some time before buying a new piece of equipment because the price tag is much higher and oftentimes the learning curve can be cumbersome. Clinicians and dental teams often become stuck in their routines and it can be challenging to bring a new piece of equipment in to disrupt the usual flow. If the equipment is guaranteed to save time and money but the price tag is high, it is often the thought of training our staff something new that drives our decision whether the investment is right for our practice.

I personally debated a while before buying an intraoral scanner, and then after buying it I had buyer’s remorse because initially impressions were so much quicker than scanning. As we became more adept with the scanner, I cannot imagine not having it in my practice. I believe it is good for our teams to constantly change and evolve—it keeps us our brains working and alert rather than on autopilot.

Keeping Patients in Mind
Lastly, the other big driver in what determines our material choice is our patients. Do they like our rubber dams, or do they complain too much? Do we try a different isolation system to wow our patients, or will they complain about that too? Oftentimes, it’s consumer behavior, meaning it’s the way we present our materials and methods to our patients.

Having conversations with our patients on what materials we are using and how great it is for them and their overall health usually wins their satisfaction. But what about when it comes to appearance of our restorations? There’s not much sweet talking we can do if our restorations stick out like a sore thumb. In those instances, patients definitely drive the clinician’s material choice. We are all so eager to “wow” our patients we will often try anything that sounds promising in hopes of gaining our patients’ approval.

As you can see, there are three big factors that motivate clinicians’ material choices: Cost of failure, barrier to entry (cost vs. changing the team’s routine), and patient approval. Each material choice is unique to each practice. Oftentimes, if we work for a DSO or large group, we choose from a curated formulary or simply use what we are given. If you do have the ability to pick and choose what materials your practice utilizes you should consider that a gift with which you chose carefully.
When it comes to new materials, I consider myself a:

- **EARLY ADOPTER**
  - I like to try out new materials regularly to see what works best

- **RESEARCHER**
  - I look for published research on efficacy and durability before trying a new material

- **PATIENT PURCHASER**
  - I wait for products to have a long track record of clinical success before I adopt a new material

- **UPDATE FOLLOWER**
  - I rarely adopt or try new materials unless my favorites are no longer available

- **UNCHANGING CLINICIAN**
  - I rarely try new materials but I’m eager to try new generations of materials I trust in my practice

**[MATERIAL REFLECTIONS]**

When conducting these surveys, we always ask how you describe yourself and your material decision-making process. The two most common categories were the researcher and the patient purchaser, both relying on a published track record before adopting a new material. The least popular description in this survey—chosen by just 4% of respondents—was of someone uninterested in trying new things. With so many material options available all the time, there is no shortage of options for curious clinicians to try.

**[MATERIALS INVENTORIES]**

The properties of dental materials, such as shade and shelf life, play a big role in the way those materials are stocked at dental practices. Having the material you need on hand when you need it is key. Our survey shows dental composites are the material where the largest variety is kept on hand. 44% of respondents stock six or more, and another 37% stock four or five. The choices simplified for other types of materials, with fewer than 10% of respondents keeping more than 3 resin cements or adhesives on hand.

**[MATERIALS OF CHOICE]**

It’s no big surprise that different types of materials are the go-to choices for different types of restorations. However, universal composites are the go-to for most direct restorations. For direct posteriors, 51% of you grab the universal, while 32% prefer a bulk fill option. However, in the anterior, 82% of you say a universal composite is your first choice. When it comes to indirect crowns, zirconia is the choice for 58% of you, while glass ceramics such as lithium disilicates were the preference for 18%, and porcelain-fused-to-metal crowns are still the go-to for another 18% of you.
Modern dental materials offer a wide array of features. Knowing which factors are most important to you is key. Our survey looked at which of these factors matter the most. Enhanced durability stood out as the most important factor, as 79% of you say it’s a very important consideration, and an additional 18% listed it as important. The other considerations rated very important by more than 50% of the survey respondents were enhanced esthetics, simplified technique, and bioactivity. While almost every aspect of a new material was considered important enough to be taken into account, one product enhancement—a reduced number of shades—did not receive 50% of the respondents listing it as very important or important. When it comes to fewer shades, 27% of respondents said it was not important or slightly unimportant, while an additional 29% of respondents said it was neither important nor not important.

The most important factors when considering a new material for my practice are:

- Enhanced Durability: 78.60%
- Enhanced Esthetics: 54.67%
- Bioactivity/Biocompatibility: 53.27%
- Ease of Use/Simplified Technique: 52.56%
- Compatibility with Materials Currently in Use: 48.63%
- Reduced Number of Shades: 44.39%
- Free Samples (Ability to Try It First): 42.14%
- Very Important

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Clean up contamination and improve bond strength

This new cleaner helped one doctor boost bond strengths and offer minimally invasive dentistry. [by Renee Knight]

Dr. Joe Willardsen is committed to providing patients with minimally invasive dentistry. When placing a restoration, he aims to save the tooth structure, so he focuses on increasing bond strength without relying on mechanical properties that require cutting down the tooth. High bond strengths require clean restorations, and that’s where Kuraray’s KATANA Cleaner comes in.

“In the process of trying to make sure the fit is tight, it gets contaminated with blood, saliva, and plaque,” Willardsen says. “If the restoration isn’t cleaned out properly, my bond strength is almost cut in half.”

A few months ago, he started using KATANA to clean restorations. Although relatively new, the product is backed by research that shows its ability to clean effectively, both intraorally and extraorally, something other cleaners can’t do. Combining a pH of 4.51 with the surface-active characteristic of MDP salt quickly and thoroughly cleans restorations, ensuring that patients leave Willardsen’s office with a restoration that lasts.

“KATANA Cleaner is a huge advantage for me,” he says. “It’s the only cleaner that not only disinfects the restoration but is also safe to use in the patient’s mouth. So, I decontaminate the restoration and the tooth itself. With other cleaners you’re not able to do that, usually because the pH of the product isn’t right.”

Appreciative Patients
Willardsen’s goal is to spare patients the downward progression from fillings to restorations to root canals to extractions. The best way to do that is to keep more of the tooth structure, which KATANA helps make possible.

“With this process, I don’t have to be as aggressive,” he says. “I don’t have to rely on mechanical retention, and I can keep more of the natural tooth, which, in the long run, prevents my restorations from having to be changed over and over again.”

Patients appreciate Willardsen’s determination to provide long-lasting restorations. He tells them about the cleaner and explains that it disinfects their tooth to ensure that no bacteria will be permanently cemented underneath.

“With this new material, which has the research to back it up, I can 100 percent tell patients their restoration is completely clean, and we don’t have to worry about any bugs being left behind. And I let them know it’s going to make their dental work last longer,” he says. “We tell them we’re using different materials and technology to conserve more tooth structure than traditional methods. We like to talk about that because it sets us apart.”

KATANA Cleaner
With KATANA Cleaner, you can clean up contamination and improve bond strength. The cleaner has a high cleaning effect due to the surface-active characteristic of MDP salt. In contrast to other cleaners, it has a pH value of 4.5, which allows usage not only extraorally but also intraorally. It is easy to restore the original bond strength for your cementations. It offers an easy, two-step workflow prior to cementation.

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Cost and Time Savings
KATANA can be used intraorally and extraorally, offering a big advantage. It not only saves him the cost of multiple products but also is a timesaver.

“It saves times in two ways,” Dr. Willardsen says. “If the restoration comes off or the patient has sensitivity, you’ll need two more appointments to redo the restoration. It also saves time throughout my day. If I’m seating multiple restorations, I’m saving anywhere from 10 to 15 minutes just in cleaning and prep.”

It’s also easy to use. The cleaner takes 10 seconds to apply, and once it is rinsed and dried, normal protocols for cementation can be followed.

KATANA can be used on any restorative material—metal, ceramic, resin, or zirconia, Willardsen says—and is indicated for most scenarios. He also uses the cleaner before taking impressions to ensure clean margins and clear impressions of any debris.

Peace of mind
Willardsen’s associates also use KATANA, so he is confident everyone in the practice is taking the necessary steps to ensure solid work and satisfied patients.

“You know your restorations are going to be seated stronger, so there are fewer remakes and failures. There are fewer restorations falling off, and fewer re-cements,” he says. “It gives me a new tool and it’s one more thing that allows me to be minimally invasive in my dentistry because it is increasing my bond strengths for my indirect restorations.”
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COMPLETE DIRECT RESTORATIVE CASES WITH CONFIDENCE

A clinician uses a variety of Centrix materials to tackle a difficult case for a sensitive patient and ends up with a strong, good-looking final restoration. [by Marian Fanica, DDS]

Information provided by Centrix.

HOW TO

“Finishing, and especially polishing, are often overlooked, but they play key roles in the longevity of the restoration.”

After anesthesia and isolation with rubber dam, most of the decay was removed first with a diamond-coated spherical bur and then on low RPM with a carbide bur for dentin (Fig. 3). Even when using a dental microscope, it can be impossible to tell with confidence which is infected, affected, stained, and sound dentin. For this reason, I always use caries detectors. I prefer Expose from Centrix because it is dried and already contains the dye, and the results are predictable, with no false staining of sound dentin. After applying it on moist dentin, the tooth just needs to be washed, and what is left stained is infected dentin. As shown in Figure 4, the caries detector reveals what part of the dentin is still infected.

A direct restoration was chosen, and after applying the etchant on enamel for 20 seconds, dentin was also etched for 10 seconds. Figure 5 shows use of Meta Etchant gel from Meta Biomed. A bonding agent was used after washing the etching gel with water spray and the dentin was left slightly moist. Because the cavity was so large and stratification would take a long time and require multiple layers, most of the cavity was filled with core buildup material. Encore D/C MiniMix from Centrix was applied up to 2 millimeters to the occlusal plane. First, a thin layer of flowable composite was placed to fill all the micro relief using VersaFlo from Centrix (Fig. 6). Next, the VersaFlo composite material was adapted with an explorer (Fig. 7). Encore was then applied as bulk fill, with small adjustments made to adapt the material better with the help of Benda Micro (Figs. 8 and 9). Encore was left to self-cure to avoid additional shrinkage caused by light curing. A 1- to 2-millimeter space up to the occlusal plane was left to allow for the final layer of composite (Fig. 10).

Use of a delayed cure technique avoided additional shrinkage by light curing the material first. With this technique, when working with dual-cure materials, let it first self-cure for 3 to 5 minutes, then light cure the material. The benefit is less shrinkage, usually half of that from light curing first. Just be sure the bonding is compatible with dual-cure materials.

In the end, light cure composite was placed cuspal with cusp by cusp with ceram.x from Dentsply Sirona (Figs. 11 and 12). A final light curing was performed through glycerin to remove the oxygen-inhibited layer. Finishing, and especially polishing, are often overlooked, but they play key roles in the longevity of the restoration. After using carbide burs for finishing the composites (Fig. 13), points were used, and Couture diamond coated paste from Centrix was used for high-gloss polishing (Fig. 14). Fortunately, no adjustment to occlusal relief was necessary after removal of the rubber dam.

The final completed restoration can be seen in Figs. 15 and 16. This was a tricky case with a sensitive patient, but the end result was a good one for both the clinician and the patient.

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1. The patient's initial radiograph.
2. Clinical image with tooth No. 15 showing decay.
4. Expose is showing what part of the dentin is still infected.
5. Etching gel is also applied on the dentin.
6. Apply a thin layer of VersaFlo on dentin to have a better adaptation to the cavity walls.
7. Adapt VersaFlo composite with an explorer.
8. Encore is then applied as bulk fill and left to self-cure to avoid additional shrinkage induced by light curing.

Continue on pg. 26
9. Applying Encore as bulk fill and making small adjustments and adapting the material more with the help of BendaMicro.

10. Image with Encore after self-curing and the space left for the final layer of composite.

11–12. Applying composite cusp by cusp to recreate the function and the esthetic.

13. Finishing the obturation with a carbide finishing bur.

14. Final high-gloss obtain with Couture polishing paste.

15–16. Fortunately, no adjustment to occlusal relief was necessary after removal of the rubber dam. The final completed restoration illustrates a strong end result.
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Through the looking-glass, into the unknown

Reopening offices is forcing dental practices to discover uncharted terrain. [by Dr. John Flucke]

For now, we see through a glass darkly; but then face to face.” With all apologies to St. Paul, truer words might never have been spoken. As regular readers of this column will know, I love to talk about change in our profession and all the excitement that normally comes with it. Yet, as much as it pains me to say this, sometimes change is not exciting; sometimes it’s scary. This appears to be one of those times.

We are suddenly seeing massive changes in our profession to keep our patients, our teams, and ourselves as secure as possible from SARS-CoV-2. Probably the perfect solution to this would be to simply press “pause” on dentistry and wait for the science to catch up. Unfortunately, the problems our patients trust us to deal with couldn’t care less and won’t wait for the science to catch up. They will continue to wreak havoc on our patients until we can return and get things back under control.

My office did not reopen until May 18, which meant I had not done an elective procedure for almost 60 days. During the pandemic shut down, I treated emergencies only for that time and had chosen to work alone in an effort to decrease the number of potential exposures and to conserve PPE. I couldn’t even remember how long it had been since I had worked without an assistant. Amazingly enough, I didn’t struggle nearly as much as I had anticipated. Granted, I was only seeing emergencies and only treating as little as possible to get the situation stabilized, but it also made me appreciate how important my dental assistants are to the equation. There is a reason it’s referred to as a “team”—something every doctor needs to remember.

Into the Great Unknown

Now here comes the tricky part. Dentistry is an evidence-based scientific profession, and it tends to attract people who want to see proof. In Dental Products Reports’ recent Technology and Materials Survey, 54.09 percent of respondents classified themselves in the category, “I’m a researcher. I need to see clinical studies, hands-on demos, etc.” That’s a good thing. Our patients definitely do not want someone who is just “winging it.” But that’s the crux of the problem we are currently facing in our profession. We just don’t have enough scientific information to be able to act with steadfast assurance.

As I type this, the Centers for Disease Control (CDC) has not updated its recommendations for dental treatment since April 27. The American Dental Association has requested that the CDC update its guidance for dental personnel returning to work, but that information appears to be slow in arriving. The current CDC guidelines still encourage the postponement of elective dental procedures, but at least 28 states are now reopening. That means 28 states have cleared dental offices to open again and begin seeing patients for elective procedures.

(Editor’s Note: The CDC finally released updated recommendations for dental settings on May 19.)

While I understand the science is lagging in the battle against COVID-19, at some point the specialists in infectious disease and epidemiology will have to take their best shot at this. I cannot say with any degree of certainty, but it’s certainly starting to look like everyone is so concerned about making the wrong recommendations, that no one will make a recommendation at all.

Because of that, we are approaching three weeks of some offices performing elective procedures and being forced to use a “best guess” scenario.

Place Your Bets

As we all either proceed with treating or proceed with getting ready to treat, the question I am hearing the
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We are going to have to be even more vigilant about our inventory control. Running out of critical PPE could stop treatment in its tracks."

five-day span, the CDC considers them ready to wear again.

Gowns have also become a sought-after item. Whether disposable or reusable is up to the office, but "gowning up" will become a part of standard operating procedures for the foreseeable future. These should be waterproof and should protect underlying garments as much as possible. Some disposable gown manufacturers switched over to making masks due to demand, which has now created a disposable gown shortage.

Hair bonnets have been discussed a lot and no one seems to have a really good answer as to whether or not they are needed. The normal "gauze" types certainly won’t prevent virus penetration, but some individuals feel better with them during treatment. Perhaps the best option for those who desire to cover their hair are the good old fashioned shower caps. These are basically a thicker ploy plastic bag with elastic. While these would keep viruses out, they will also be very warm for those who choose to wear them.

Face shields are also a popular option. While the CDC is currently advising either safety glasses, goggles, or a face shield, many are choosing to wear glasses and a face shield. The problem with face shields is that most are not very compatible with magnification. More than 80 percent of doctors are currently wearing some type of magnification and fitting a plastic shield over almost all of them is difficult if not impossible. Adding to the problem is the fact that most wearing magnification also have a light attached to the glasses. This makes the mask even more difficult to fit, while also creating reflection problems as the light bounces off the mask and reflects back into the user’s eyes.

And That Isn’t All

Then let’s add in the temperature factor. All of this PPE is going to surround us with non-breathable materials. Viruses cannot get in, but the tradeoff is that heat cannot escape. We are going to get very hot. Spending hours wrapped in layers of insulating materials is no one’s idea of a good time.

Plus, we are going to have to be even more vigilant about our inventory control. Running out of critical PPE could stop treatment in its tracks, meaning we’ll have to be hyper aware of inventory levels. Also, because the supply chain is so out of sync, we can’t just pick up the phone and place an order with the expectation it will arrive in a day or two. We’ll have to scour all available supply chains in an attempt to find items that are in stock and purchase before those items are sold out. This is going to require a careful balancing act that we’ve never had to perform before.

Wrapping Up

Is this going to be difficult? Absolutely. However, we’ll get through it. Dentistry may not have faced this kind of challenge before, but we’ve faced challenges in the past and we prevailed. I’m no happier about the current situation than any of you, but as my grandfather used to say, “Son, if it was easy, everyone would be doing it.” Here’s to doing what is NOT easy. See you on the other side.

ABOUT THE AUTHOR

John Flucke, DDS, is Technology Editor for Dental Products Report and dentistry’s “Technology Evangelist.” He practices in Lee’s Summit, Mo., 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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DENTISTRY IN ONE FORM OR ANOTHER
dates back thousands of years, as humans have long sought ways to reduce or eliminate oral pain, replace missing teeth, and even enhance cosmetics. But while the goals of dentistry remain similar, the paths toward achieving these goals continue to evolve and improve.

Changing dental products often drive these enhancements in both clinical and operational approaches. Sometimes they even impact the physical space of a dental practice, such as switching to digital X-rays and eliminating the need for a room for processing the images. Of course the past isn’t static, as some practices today are completely digital in both practice management and patient care, and others still operate with films and paper forms. In fact, a practice that has rarely invested in new equipment, today’s state of the art dental technologies might seem plucked right out of science fiction, but the truth is, lasers, 3D imaging, digital treatment planning, and even robotic systems are not the future, but are all parts of dentistry’s present.

What do all these advancements mean for the industry’s future? No one really knows exactly what’s going to revolutionize the industry and set a new standard of care, but, whether it’s technologies from other industries or based on research underway right now, there are plenty of hints to where we’re headed. Read on for visions of the Past, the Present, and the Future of dental practices and dental products.
THE PAST

If there was one word to describe the hub of dental practice front offices of the past it would be “paper” because paper was used for everything from patient records, to patient forms, to practice marketing, and patient communications. Practices advertised for new patients in local newspapers and The Yellow Pages, mailed postcards to patients’ homes, and managed the practice’s operations with literal paper trails for every appointment. The telephone was also a key tool for connecting patients with the practice. Billing and insurance was handled with the telephone, letters, and eventually the fax machine. Needless to say, this was a slower, less efficient situation for practices where losing information was as simple as a page of paper falling out of a folder unnoticed.

THE STATE OF THE ART IN PRACTICE OPERATIONS

THE FUTURE

The future of practice operations is likely to include even more automation and deeper AI integration into all parts of the practice workflow, including patient communications. While teledentistry is taking off now during the COVID-19 pandemic, this is a technology likely to play a larger role in the future, as more diagnostic and screening services will be able to be provided remotely via secure platforms and enhanced commercial imaging capabilities. Practices will also involve less physical contact as voice operated systems from patient forms to charting to scheduling are handled without the need to physically interact with an input device. The technologies ready to hit dentistry will make managing a practice more streamlined, more reliable, and even safer for staff and patients.

Although software that is professionally managed in the cloud is widely adopted in most industries today, it is just now catching fire in the dental community.”

— MARK BLOUNT, Vice President, Curve Dental

THE PRESENT

Today practices can leave the paper behind and manage their practice digitally.

This means keeping practice schedules, patient records, and more in a digital database that can even be stored in the cloud and accessed from anywhere. Patient communication is managed via text messaging and emails more often than phone calls, and video calls and even remote, teledental appointments are growing more common, partially due to the COVID-19 pandemic.

In the up-to-date practice, new patients are found with varying digital marketing campaigns with the ability to focus efforts on specific types of prospective patients. Many of these digital tasks can be automated with software and artificial intelligence constantly reviewing efforts and adjusting in real time for optimal impact.
**THE PAST**

This is an area of dental practices that is advancing at an incredible pace. But in the past, the technology in a dental practice was likely to be mechanical rather than digital. Sure patient chairs tipped back and handpieces were driven by air turbines (after belt drives went out of fashion), but things needed to be moved and adjusted manually. X-rays were captured on film, and those exposed films had to be properly processed before the clinician knew if the image was usable or not. Impressions were captured using physical materials, and those impressions—or models poured from them—had to be shipped to a lab for dental restoration fabrication. The past of dental technology was noisier, clunkier, and often bulkier and heavier.

**INTEGRATING A CO₂ ALL-TISSUE LASER AND DOING VIRTUALLY ALL OF MY FILLINGS NEEDLE-FREE AND DRILL-FREE HAS DRAMATICALLY INCREASED NEW PATIENT FLOW. IT HAS ALSO MADE ME MORE EFFICIENT AND ENABLED ME TO PERFORM SURGICAL PROCEDURES I COULDN’T DO BEFORE.**

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— DR. MICHAEL YOUNG

**THE PRESENT**

The cutting edge of dentistry these days might seem like science fiction to some. A practice up to date on its clinical technology is likely using lasers in place of handpieces, providing same-day crowns via CAD/CAM, 3D printing anything they can produce on their printer, and using 3D imaging to diagnose and plan treatments. Today’s clinical technologies make diagnostics faster and safer, while also allowing clinicians to do more for patients in fewer appointments with less pain and discomfort than was possible with previously available technologies.

**THE FUTURE**

The motto for the future of dental technology could easily be, “Better, faster, stronger” as each new generation of imaging system, laser or CAD/CAM solution gets easier to use to produce better results in less time. The next wave of new technologies is likely to include radiation-free imaging solutions that provide safer ways to capture diagnostic quality images. A laser solution designed to treat healthy teeth to provide protection from dental caries is in development now as well. Other improvements that could be the future of dentistry include automated clinical assistance (i.e. robots to help clinicians), as well as integrated, intelligent diagnostic platforms that produce a potential diagnosis based on the imaging input provided. Virtual and augmented reality solutions will also be likely to be integrated into loupes and microscopes to allow visual prep guides and other information overlays during treatment.

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DENTAL MATERIALS

THE PAST

Restorative dental materials date back as far as dentistry. When all or part of a tooth is missing, replacing it with something is important to helping that patient regain full function, not to mention esthetics. In the distant past these materials were found in nature, but synthetic dental materials have been around for a long time as well. The dental materials of the past were rarely tooth colored, so dental restorations stood out in a patient’s mouth regardless of the clinician’s skill. These materials could also be touchy to work with, as they offered less than optimal working and set times. Still it wasn’t all bad, especially for patients, as materials from the past often provided durability and functionality, which is likely one reason some older materials, such as gold—as well as the related clinical techniques—are still in use today.

I believe restorative materials will see an increase of products that focus on the streamlining of the restorative process. Technological and scientific advances allow manufacturers to develop composites and bonding agents that reduce the guesswork in bonding protocols, depth of cure, and shade matching.” — MARA OSATA, CEO, Tokuyama Dental America

MATERIALS AT THE CUTTING EDGE TODAY

THE PRESENT

The dental materials available today are generally simpler to use, while producing highly functional, and highly esthetic outcomes. The word universal is now a common descriptor, as tooth-shaded composites are the norm, and incredibly strong adhesives that work with a wide range of materials are growing increasingly common. But the real push for cutting edge materials today are ones that do more than fill a hole, but add in beneficial bioactive properties or even anti-microbial properties to provide lasting protection and benefits. Modern dental materials are easier to use, and provide better results for patients.

THE FUTURE

The trajectory for dental materials is ever and ever closer to something that looks, feels, and functions like the tooth it’s replacing. In the near future products such as GreenMark Biomedical’s LumiCare™ Caries Detection Rinse and CrystiCare™ Caries Prevention Gel will hit the market to offer new approaches for early, incipient lesion detection and treatment. Eventually, regenerative technologies will likely make many materials obsolete, as a combination of better decay detection and prevention and the ability to spur a patient to regrow missing tooth structure is likely to take over. The good news is more patients are likely to keep their teeth throughout their lifetime, even if they have to regrow one or two along the way.

DENTAL TECHNOLOGY

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Apex Dental Materials | apexdentalmaterials.com
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3M Flowable Composites
3M’s current flowable composites, 3M™ Filtek™ Supreme Flowable Restorative and 3M™ Filtek™ Bulk Fill Flowable Restorative, have now improved syringe design to simplify placement, eliminate bubbles, and make material placement easier.
3M | 3m.com | CIRCLE RS # 40

TheraCal LC
TheraCal LC is a light-cured, resin-modified calcium silicate. Its unique apatite stimulating ability makes it ideal for direct and indirect pulp capping and as a protective liner.
BISCO | biscocom.com
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PANAVIA SA Cement Universal
PANAVIA SA Cement Universal is a self-adhesive resin cement containing a dual-monomer technology that adheres to virtually every material without the need for a primer.
Kuraray Noritake Dental | kuraraydental.com
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OraCare Health Rinse
OraCare is a revolutionary product that utilizes activated chlorine dioxide to kill pathogens. Its most common uses include gingivitis, periodontal disease, dry mouth, in office pre-rinsing, and bad breath.
OraCare | oracareproducts.com
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Futurabond U
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VOCO America | vocodental.com
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ACTIVA BioACTIVE RESTORATIVE
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Dental specialists handle some of the biggest challenges in dentistry, and require unique instruments and technologies specifically designed for the clinical tasks they face. Early endodontics required fine manual dexterity as clinicians worked small files in smaller spaces manually throughout the case, while early implants were placed freehand. Because these procedures required both specialized skills and specialized equipment, these cases were handled by specialists rather than by general practitioners.

“This technology can provide guidance for the most complex implant cases. Now complex restorative cases can be pre-planned and delivered easily with the accuracy of robot-assisted technology.”

In dentistry, diagnosis has always stemmed from what is visible. Damage, and of course pain, were the indicators. Smart, wearable devices have opened up the world of dentistry to a new level of insight with quantitative data and indicators of unseen behaviors and symptoms. Cost-effective, easy-to-use wearable technologies increase dentist and patient confidence and compliance with diagnosis and prescribed treatment.”
— BROCK PREDOVICH, Founder of Bravrr

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In light of COVID-19, airway health and treating patients for sleep breathing disorders is more important than ever before. — DR. BRYAN LASKIN, Founder of OperaDDS

“Though Baking Soda has been around for over 150 years, it is continually being proven to have unique benefits in oral care. Baking Soda is a 100 percent natural ingredient that has unique properties, such as alkaline pH for acid neutralization, low abrasion for safe and gentle whitening, and biological cleaning action for superior plaque removal.” — JAIME SHEPLER, Professional Marketing for Arm & Hammer Oral Care

In the wake of the COVID-19 quarantine and subsequent shutdown, dentists across the country are implementing innovative strategies to allow continuity of care for their patients. Through the use of teledentistry and various models of mobile care delivery, practice owners are creating non-traditional patient touch points outside of their brick and mortar practice.” — MELISSA TURNER, BASDH, RDHEP, EFDA, Chief Hygiene Officer, Cellerant Consulting

“Home care is going to eventually become simpler, and easier as whole mouth brushing solutions eventually take over. The ability to insert a mouthguard-like device that will brush, floss, and rinse teeth in a matter of seconds might help with home care compliance. Additionally, connected devices are gathering more and more useful data for dental professionals. Home care will eventually include caries diagnostics that will be able to report to a dentist, and home intraoral imaging will play into this as remote screenings become a part of the routine.”

“Dental care away from a medical professional has also been around for a very long time. Humans have long sought ways to care for and preserve the lifespan of their dentition, while also reducing bad odors. In the recent past, home care focused on a manual toothbrush with rather stiff bristles and a toothpaste that likely came in just one flavor. Dental floss was around, and some people used it—the same with mouthrinses. But one thing that hasn’t changed when it comes to home care is that humans often need a lot of advice and encouragement to maintain good habits. However, in the past these failed homecare efforts led to more people with fewer teeth later in life.”

“Artificial Intelligence and Machine Learning hyper-efficiently analyzing, automating, completing, or delegating tasks is the cutting edge of front office management. What could be more helpful than an AI Virtual Office Manager pre-educated with the best practices, KPIs, successes, and failures of some of the nation’s top practices?” — PAUL INTLEKOFER, CEO MMG Fusion
The definition of a “successful” practice has changed a lot in the past 20 years. The clinical and esthetic results you deliver will always be the leading indicator. But in a world where so much of patient choice is decided online, no modern practice can truly be successful without a plan for sustainable, sophisticated digital engagement with both current and potential patients.

Numerous companies, some of which I’ve written about before, have stepped up to help dentists better steer their online presence. Every year brings new and improved tools to help practices manage social media, search engine optimization (SEO), reviews, and more. When I think about what the most exciting next step in this space might be, I can say with confidence that it isn’t another tool. It’s Ava.

Technology that Talks Back
Ava is the internal name for the virtual assistant that seamlessly integrates the three core MMG Fusion offerings: ChairFill, Unified Communications, and Patient Portal. “A lot of people have tools, but we’ve developed every tool. With Ava, we make every tool work better, improving the overall performance of the staff,” says Paul Intlekofer, CEO of MMG Fusion. “Ava, as a program, is able to think, learn, analyze, and do. It can work independently in ways that will surprise you. While our competitors are constrained by having DNA in a specific area, like phone systems, we are able to deliver Ava as a force multiplier for every tool in our system.” Ava is able to evaluate the verticals, prescribe what is necessary to maximize the growth of the practice, and be the central hub making sense of increasing amounts of data, including potential patients, schedules, and treatment acceptance.

“SEO, phones, scheduling, treatment plans, payments, reviews — Ava is able to read, analyze, and write back all these end points,” Intlekofer says. “That level of fluency leads to a more sophisticated set of results, not just filling a scheduling gap, but also getting the best possible patient into the chair based on the practice’s patient record. Ava is tracking everything so that, instead of getting overwhelmed, the practice can get better. For example, Ava can find patterns in patient calls, send demographically targeted marketing assets, and more.”

Some tools can make morning huddles more informative and more strategic. With MMG Fusion and Ava, huddles can happen in real-time with specific recommendations rooted in data unique to your practice and patients.

“We can still sell bundles that stack up against our competitors,” Intlekofer says, “but our goal for the next phase of MMG Fusion is to help people appreciate that while you can buy the tools, this will change your practice, and your life if you see it as a system—one platform that does it all.”

For more information, email MMG Fusion’s chief operating officer, Chris Rom, at chris@mmgfusion.com for a personal introduction, or go to mmgfusion.com to schedule a demo.

ABOUT THE AUTHOR
Dr. Lou Shuman is the CEO of Cellerant Consulting Group, dentistry’s leading corporate incubator and accelerator; a venture-in-residence at Harvard’s i-Lab; the chairman of the technology advisory board at WEO Media; a long-time contributor to Dental Products Report; and the founder and creator of the Cellerant Best of Class Technology Awards.

Ava is tracking everything so that, instead of getting overwhelmed, the practice can get better.

— PAUL INGLEKOFER, CEO, MMG FUSION

It’s Alive! Breathe new life into your practice
A valuable virtual assistant doesn’t just run in the background—it moves your practice forward.

[ by Lou Shuman, D.M.D., CAGS, CEO and founder of Cellerant Consulting Group ]
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None, of course—each tooth has a circular channel to receive the final restorations, so the gingival tissue forms a gingival tissue. The bone and through the soft tissue.

Dental implants rank among dentistry’s most successful procedures. With many more practitioners placing implants around the world, this type of dentistry has grown incrementally every year. Given implant therapy’s rather high out-of-pocket cost to the patient, combined with consumers’ increasing knowledge of this treatment modality, patients have high expectations for outcomes. Patients expect their implant restoration to be esthetically pleasing and mimic the natural dentition. Because time is a premium for all stakeholders, patients want their treatment completed in as few appointments as possible, an objective the clinical team shares.

One area that is critical to the esthetic and functional outcome yet sometimes receives less attention is the formation of the gingival tissue, or emergence profile, created during the healing phase. Most implant manufacturers provide circular titanium or titanium alloy healing abutments, so the gingival tissue forms a circular channel to receive the final crown/ restoration.

Which natural teeth emerge from the bone and through the soft tissue in a completely spherical manner? None, of course—each tooth has a unique geometry and emergence profile appropriate for its location in the arch. Some implant companies have created flared healing abutments to improve the emergence profile, but once again, the soft tissue channel that is created is uniform circumferentially and not ideally matched to the tooth being replaced. These healing abutments also do not lend themselves to chair side customization, which is necessary in a high percentage of cases to produce an optimal emergence profile.

An absence of proper emergence profile can have clinical implications. First is the risk that the dental laboratory creates a restoration that matches the spherical geometry created in the soft tissue. This can result in the “popsicle on a stick” crown form, which creates undercuts and food traps for the patient. If the lab does produce a more natural emergence, the restoration is unlikely to passively fit in the tissue geometry that was formed. This can impinge tissue or require a secondary soft tissue procedure, increasing chair time and patient inconvenience. Ultimately, there is the risk of the restoration not properly seating on the implant. Second, a lack of matched emergence profile between the restoration and soft tissue may result in tissue recession over time and deterioration of the esthetic result.

Although it is possible for the clinician to create an anatomically correct custom healing abutment for the site using temporary abutments and restorative materials, this is time-consuming and lacks predictability. One innovative solution involves off-the-shelf custom healing abutments, Gingival Cuff Links from GCL Systems. The branchchild of an oral and maxillofacial surgeon and a general dentist who wanted to improve soft tissue management in implant dentistry, Gingival Cuff Links have changed how I practice.

This product not only addresses the soft tissue but also helps maintain the bone graft, especially in immediate implant placement. Anecdotally, this technology has reduced pain for my patients undergoing a procedure that before required some sort of narcotic, but now involves just a few OTC acetaminophen or ibuprofen tablets.

In my practice, when a molar tooth requires extraction and there is an ability for an immediate implant placement, this technique offers a predictable way to obtain ideal bone and soft tissue healing and decrease bone loss and pain.

I have also noted the practice-building potential as patients discuss with friends and neighbors how they had just one appointment for a tooth extraction and implant placement, with little to no pain. For practitioners who are specialists, it helps general dental colleagues create the ideal emergence profile for a customized abutment and crown. The following example illustrates the technique.

Case Study
This patient is a healthy 49-year-old man with a non-restorable tooth #14 requiring extraction (Fig. 1).

Tooth #14 was extracted with immediate implant placement (Fig. 2).

Then, the implant screw was placed and a particulate allograft is packed into the socket to fill voids (Fig. 3). Because conventional healing abutments do not properly fill the post-extraction space, there is the potential for bone graft particles to be expelled from the surgical site, even with good suturing technique and the appearance of primary closure.

The Gingival Cuff Link Abutment is seated into the implant (Fig. 4). GCL Abutments are available for most popular dental implant systems and these healing abutments engage the anti-rotational interface of the implant. There are 11 configurations to ensure an ideal geometry is being selected for the given tooth location in the arch. As these abutments are anatomical, their rotational position is important. In addition to allowing for easy handeng, the T-Handle on the abut-
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1. The patient is a 49-year-old man with a non-restorable tooth #14.
2. Tooth #14 was extracted with immediate implant placement.
3. The implant screw is placed and particulate allograft is packed into the socket to fill voids.
4. The GCL Abutment is seated into the implant.
5. Small gaps were closed with additional composite material.
6. The abutment is removed and placed on an implant body analog for modification.
7. The occlusal aspect of the abutment was removed with a bur.
8. The final abutment is seated.
9. A side view of the abutment in place.
10. Final PA showing implant with the GCL Abutment in place.
11. One month post-placement, soft tissue is healing.
ment allows the clinician to properly orient the abutment in the correct 360-degree position. The top of the T should be aligned with the adjacent dentition. If there is significant discrepancy, it provides an opportunity for the surgeon to slightly rotate the implant position.

Because the GCL Abutment is fabricated from bis-acryl material, it allows for customization with the use of flowable composite material that will bond to the abutment. In this case, small gaps were closed with additional composite material (Fig. 5). This would not have been possible with a metallic healing abutment. The GCL Abutment is then removed and placed on an implant body analog for easy modification (Fig. 6). The remaining gaps/voids are filled with more flowable composite. The use of flowable composites also allows us to change the shade of the GCL Abutment in the aesthetic zone if necessary.

Once the final desired geometry has been achieved, the T-handle is removed with a dental bur. In this immediate implant case, it was desirable to ensure the healing abutment was out of occlusion to prevent any unwanted micromovement of the dental implant. Therefore, the occlusal aspect of the GCL Abutment was removed with a bur (Fig. 7). The versatility of the GCL Abutment would also allow the clinician to create a provisional crown if desired by either adding composite material or incorporating a crown shell.

The final GCL Abutment is seated and torqued into place per the implant manufacturer’s recommendations (Fig. 8). Note that given the ideal adaptation to the gingival margins, there was no need for suture. The access hole is covered with Barricaid® periodontal light-cured surgical dressing or a pink flowable composite.

The seal between the GCL Abutment and the gingival margin eliminates the loss of particulate bone graft and minimizes pain for the patient (Fig. 9).

The patient arrived for a follow-up appointment one month post-placement of the GCL Abutment. A proper emergence profile was created for this molar location (Fig. 11). Given the nice adaptation of the gingival tissue to the GCL Abutment, there was no loss of the particulate bone graft and bone volume was maintained. An implant level impression can now be taken allowing the dental laboratory to fabricate a final crown with a matched emergence profile to what was created with the GCL Abutment.

ABOUT THE AUTHOR
Adam P. McCormick, D.D.S., FACS, attended dental school at The Ohio State University, graduating magna cum laude, and did a four-year surgical/medical residency in oral and maxillofacial surgery at Virginia Commonwealth University/ Medical College of Virginia. He joined a practice near Washington, DC, then started the first oral and maxillofacial surgery program at Roseman University of Health Sciences, the first dental school in Utah. He now cares for patients at Oral and Maxillofacial Surgeons of Utah and has been on humanitarian missions to Honduras, China, Mexico and Ecuador.
WE MAY BE HEADED TOWARD A NEW MOUTHRINSE PROTOCOL

With the renewed interest in pre-rinsing for dental procedures, chlorine dioxide deserves a closer look. [by Dr. Robert Martino, D.D.S. and Dr. Richard Downs, D.D.S.]

Information provided by OraCare

As dental offices across the country look at the steps to take to reopen after the COVID-19 pandemic, having patients pre-rinse has become a must. Pre-rinsing has been shown in many study findings to reduce microbes in the mouth before they become part of dental aerosols. A pre-rinse must kill not only bacteria, but also viruses and fungi. One of the few compounds that can safely accomplish this is activated chlorine dioxide, available from OraCare.

Activated Chlorine Dioxide

Though newer to dentistry, activated chlorine dioxide has been used for disinfection in other industries for nearly 200 years. An important characteristic of this chemical compound is its versatility as a disinfectant, suitable for textile, medicinal, wastewater treatment, public health, food safety, personal hygiene, and household uses. It has even been used against anthrax because it is effective against spore-forming bacteria.

Chlorine dioxide is a gas and a strong oxidizer. “It effectively kills pathogenic microorganisms such as fungi, bacteria, and viruses. It also prevents and removes biofilms,” according to the website of Lenntech, a water treatment solutions company in The Netherlands. The gas can be potent enough to sterilize medical instruments but mild enough to be used intraorally to fight germs. Chlorine dioxide can be activated in small or large quantities and at varying strengths.

A key point is that “high oxidation potential” means that a chemical reacts with more substances as the power increases. The oxidation power of chlorine dioxide is high, but low enough to prevent it from reacting with cells in a detrimental way. As an oxidizer, chlorine dioxide is very selective, so it has a high therapeutic index. In contrast, ozone and peroxide are less discriminating in what they break down.

Another quality of chlorine dioxide is that less is needed to disinfect a given volume of water or saliva than required with some higher-power oxidants (ozone and peroxide). A molecule such as ozone will react with many other contents of saliva and be used up before it has a chance to react with the pathogen. This is why in many instances, including water treatment, chlorine dioxide is preferred over higher-power ozone.

The chlorine dioxide reacts with the volatile sulfur compounds and bacteria but ignores other organic compounds that don’t require treatment. So, even though a product with a high potential strength theoretically would kill at lower concentrations, in reality, it requires a higher concentration to do the job compared with chlorine dioxide.

Its high oxidation abilities also make chlorine dioxide an ideal choice for dental use. Chlorine dioxide has an oxidation capacity of 5e, which means it can accept five electrons from the molecule it is oxidizing. Hydrogen peroxide and ozone can accept just two; thus, chlorine dioxide’s oxidation capacity is 2.5 times higher. Simply stated, it strips off more than twice as many electrons from a pathogen. This causes chlorine dioxide to be reduced to sodium chlorite. Then the sodium chlorite is reduced to sodium chloride, or ordinary table salt and water, which are harmless.

The chlorine molecule remains in the substance until the end; that’s why chlorine dioxide does not produce harmful chlorinated substances such as trihalomethanes.

Chlorine dioxide is sometimes confused with chlorine bleach, but they differ not only in structure but also in behavior. As an oxidizer, chlorine dioxide is very selective compared with traditional chlorine bleach. When bacteria are eliminated using chlorine dioxide, the cell wall is penetrated.

“Bacterial cells react with chlorine dioxide, causing several cellular processes to be interrupted. Chlorine dioxide reacts directly with amino acids and the RNA in the cell. It is not clear whether chlorine dioxide affects the cell structure or the acids inside the cell, but the production of proteins is prevented. Chlorine dioxide affects the cell membrane by changing membrane proteins and fats and by prevention of inhalation,” according to Lenntech.

At minimum, chlorine dioxide is as effective a bactericide as chlorine, but in many cases it is superior. Specifically, it excels in its role as a virucide.

Chlorine Dioxide and Viruses

To kill viruses, chlorine dioxide reacts directly with amino acids. According to Lenntech, bacterial cells react with chlorine dioxide, interrupting several cellular processes. Chlorine

**Figure 1** Chlorine dioxide illustration courtesy of ProKlean Services.
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Dental products react directly with amino acids and the RNA in the cell. It is not clear whether chlorine dioxide attacks the cell structure or the acids inside the cell, but the production of proteins is prevented. Chlorine dioxide affects the cell membrane by changing membrane proteins and fats and by prevention of inhalation (see Figure 1).

Chlorine dioxide’s radical nature makes it an excellent agent in a large pH range. The permeability of living cell walls to gaseous chlorine dioxide radicals seems to increase, allowing easier access to vital molecules.2

The U.S. military has even used chlorine dioxide to sterilize medical equipment and electronic items to treat patients on the front lines of the war on Ebola in West Africa. It has also shown historical use and effectiveness against the influenza A virus.

Activated Versus Stabilized

Some products use the term “stabilized” or “naturally activated” chlorine dioxide. However, this is not true activated chlorine dioxide and does not give the full benefits of chlorine dioxide. The compound “stabilized” or “naturally activated” chlorine dioxide is in fact sodium chlorite, a salt.

True chlorine dioxide, which is a gas, requires mixing a basic salt solution with an acid. This gives off the chlorine dioxide gas. This is the reason OraCare comes in a two-bottle system and must be mixed before each use. The stabilized compound is not the same as chlorine dioxide, nor does it have the same oxidizing properties. The oxidizing potential is much lower, and the compound is far less useful as a product in general. Sodium chlorite has some benefits but nowhere near those of activated chlorine dioxide; specifically, it does not kill viruses.

Chlorine Dioxide and Dentistry

Chlorine dioxide is having greater application in dentistry. It is used not only as an alternative to chlorhexidine, but also for implants, periodontal disease, bad breath, dry mouth, pre-rinsing, post-op, and more. Its ability to kill bacteria as effectively as chlorhexidine,2 without side effects, and additional benefits has brought dental professionals to a new level.

Activated chlorine dioxide meets all the profession’s needs and can provide protection daily in the office as a pre-rinse, especially with the raised concern regarding viruses. Activated chlorine dioxide can be found in OraCare products and is used in combination with xylitol. OraCare Health Rinse is exclusively sold in dental offices. Patients who have used OraCare have seen results such as the following cases: (see Figures 2-5).

Dentistry has changed since 1954; so should the rinse being used. Because pre-rinsing has proved in many studies to reduce oral microbes before they become part of dental aerosols, it is important to consider using this new type of pre-procedural rinse. For more information, visit OraCareProducts.com or call 855-255-6722.

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HOW TO DELIVER IMPROVED QUALITY OF LIFE FOR PATIENTS WITH XEROSTOMIA

GUM Hydral from Sunstar provides meaningful relief for dry mouth. [Joan Otomo-Corgel, DDS, MPH, FACD, FICD]

IT HAS BEEN REPORTED that a high percentage of patients with xerostomia are not receiving help or are dissatisfied with their current dry mouth remedy.

This case series provides detailed reports on individual patients that summarize dry mouth symptoms and the study participants’ quality of life before and after the use of GUM® Hydral™ from Sunstar Americas, followed by an examination of the possibility that the product will be a new advanced solution for patients with xerostomia.

In a recent study of seven patients with dry mouth symptoms, researchers examined how using GUM Hydral products from Sunstar affected participants’ quality of life.

GUM Hydral, approved by the Food and Drug Administration for dry mouth relief, contains a unique combination of ingredients that stimulate natural saliva. The products in this line, which also contain sugar-free sweeteners, offer lubrication, hydration, and electrolyte balance and create a protective film over the oral mucosa, providing moisturization with little irritation. Relief options include an anti-cavity toothpaste, an oral spray for on-the-go use, an oral rinse, and an oral gel for nighttime relief.

This article will highlight three of the seven participants in this study, most of whom experienced xerostomia caused by medications and/or medical conditions. Most of the patients received a diagnosis of xerostomia from their primary physician. The average age of the participants was 67-years-old, ranging from 51 to 79-years-old. All had been receiving periodontal maintenance.

The participants were asked to complete a 30-second rinse with 15 mL of the GUM Hydral Rinse up to five times a day for two weeks. They were asked to keep a diary and, after the two weeks, evaluate their quality of life, dry mouth relief, and other benefits.

Next, the participants were asked to place a half-inch length of the GUM Hydral Gel directly on the tongue and then spread it evenly inside the mouth. They were instructed to use the gel as needed for symptom relief, especially once before bedtime. This step was added to the rinsing routine for two weeks, after which participants again evaluated the effects.

All patients were directed to a visual analog scale (VAS) to rank their oral dryness on a 10 cm line, with 0 cm meaning “not dry at all” and 10 cm meaning “no saliva at all, extremely dry.” Participants also received oral exams throughout the study from dental professionals, recording objective parameters.

CASE 01 A 63-year-old woman had a medical history of hypothyroidism, cardiovascular issues, and angular cheilitis. Her prescribed medications included Lipitor (atorvastatin) and Synthroid (levothyroxine sodium tablets, USP), both of which, in addition to hypothyroidism, could contribute to xerostomia. The patient had previously used Biotene for dry mouth relief.

She used the GUM Hydral Rinse an average of three times a day and the gel once per day. This case successfully demonstrated symptom relief in subjective and objective evaluations.

- SUBJECTIVE: VAS improved from 7 to 0 after two weeks of using the rinse, and the relief was maintained after another two weeks of using the rinse and gel together.
- OBJECTIVE: Examiners observed functional improvement in oral mucosa throughout the duration of use. Before her use of GUM Hydral products, the patient’s tongue was grade 2, with moderate papillae and dry coating. By days 14 to 28, her tongue improved to grade 1, and her saliva, which was grade 2 prior to use, also improved to grade 1.

CASE 02 A 69-year-old woman had a medical history of arthritis and cutaneous squamous cell carcinoma treated by laser. His medications included hydroxyzine, diclofenac, and famotidine. He had a 12-year history with xerostomia, although he stated that he had tried no other products to ease this condition.

She used the GUM Hydral Rinse an average of three times a day and the gel once per day. This case successfully demonstrated symptom relief in subjective and objective evaluations.

- SUBJECTIVE: VAS improved from 8 to 7 after two weeks of using GUM Hydral Rinse and from 7 to 5 after another two weeks of using the rinse and the gel.
- OBJECTIVE: Examiners observed the functional improvement in oral mucosa throughout the duration of use. Prior to use, the oral mucosa was grade 2, with areas that were dry or had discoloration or coating. Days 14 to 28, the oral mucosa was grade 1, meaning the mucosa was pink and moist. The patient’s total score of oral health impact profile (OHIP)-14 decreased from 7 (of 56) to 2 after four weeks of using GUM Hydral products, indicating improved quality of life. She experienced outstanding improvement in painful aching in the mouth and long-lasting relief of several hours with the gel.

CASE 03 A 79-year-old man had a medical history of hypothyroidism, thyroid issues, prediabetes, arthritis, depression, and allergies. Her medications included hydrochlorothiazide and aspirin. She had a 10-year history of xerostomia and previously used Biotene to treat dry mouth symptoms.

This participant used the GUM Hydral Rinse and/or the GUM Hydral Gel twice per day. This case also demonstrated symptom relief in subjective and objective evaluations.

- SUBJECTIVE: VAS improved from 3 to 0 after two weeks of using the rinse, and the relief was maintained after another two weeks of using the rinse and gel together.
- OBJECTIVE: Examiners observed functional improvement in tongue and saliva throughout the duration of use. Before her use of GUM Hydral products, the patient’s tongue was grade 2, with moderate papillae and dry coating. By days 14 to 28, her tongue improved to grade 1, and her saliva, which was grade 2 prior to use, also improved to grade 1.

GUM Hydral Dry Mouth Relief
- Works like natural saliva to provide relief
- Gentle mint flavor that moisturizes and soothes
- The rinse is suitable for daily use and provides relief up to four hours
- Ideal for nighttime use, the gel moisturizes and lubricates the oral mucosa

Sunstar Americas, Inc.
800-528-8537 | gumbrand.com
CIRCLES $5 #59
CASE 01—63-YEAR-OLD WOMAN

| AT A GLANCE | Case No. 1 presented with a history of xerostomia (Figs. 1-2). The participant used the GUM Hydral Rinse three times daily and the gel once daily (Fig. 3). VAS improved from 8 to 7 after two weeks (Fig. 4). VAS improved from 7 to 5 after four weeks of use (Fig. 5). A functional improvement in the oral mucosa throughout the duration of the study was noted (Fig. 6). |

CASE 02—69-YEAR-OLD WOMAN

| AT A GLANCE | Case No. 2 presented with a 10-year history of xerostomia (Figs. 1-2). This participant used the GUM Hydral Rinse and/or Gel twice daily (Fig. 3). Her VAS improved from 7 to 0 during the first two weeks of use (Fig. 4). The tongue improved to grade 1 by Day 14 (Fig. 5). A functional improvement of the tongue and saliva was noted during use of the Hydral products (Fig. 6). |

CASE 03—79-YEAR-OLD MAN

| AT A GLANCE | Case No. 3 presented with a 12-year history of xerostomia (Fig. 1). Prior to the study, participant’s lips were cracked and dry (Fig. 2). Participant used the GUM Hydral Rinse two times a day and the gel once a day (Fig. 3). After two weeks, participant’s lips improved to grade 1 (Fig. 4). Tongue and saliva improved to grade 1 (Fig. 5). OHIP score improved from 11 to 2 during the study (Fig. 6). |

Conclusion
Overall, the majority of the patients who used the GUM Hydral Rinse and Gel reported improvement in their mouth moisturization and quality of life. Most patients reported dry mouth relief after two weeks of using the rinse, and most also reported additional effectiveness after two weeks using the rinse and gel together. Quality of life was also improved throughout the study period in the majority of patients. Some reported applying the gel before going to bed reduced their waking up at night. In addition, dental professionals observed improvement in oral functions throughout the use period. The effectiveness was confirmed both objectively and subjectively.

This case report indicates that GUM Hydral products offer a new, effective solution for dry mouth symptoms in patients with xerostomia who are not satisfied with their current remedy.

REFERENCES
TAKING CARE AT HOME

[ compiled by Stan Goff ]

Walk into your local pharmacy or super store and head to the oral care section and you’re likely to find several shelves with a wide variety of products, including manual and power toothbrushes, toothpastes, floss, interproximal brushes, mouthrinses, and more.

The selections can be overwhelming for your patients, who trust you to offer advice and to answer questions about which products are best for their oral care regimen. Keeping up with the constantly updated designs, formulations, and features can also be a tough task for practitioners.

In this month’s product roundup on home care products, we offer up just a small-scale showcase of the many products available.

Essentials
- Arm & Hammer’s new baking soda toothpaste is safe, effective, and features “the right amount of natural”
- Free of SLS, peroxide, and artificial sweeteners, but still contains critical ingredients, such as baking soda and fluoride
- Essentials is the optimal choice of toothpaste to recommend for patients who are requesting a more natural toothpaste with trusted results

ARM & HAMMER™ (Church & Dwight Co., Inc.)
800-786-5135 | armandhammer.com
CIRCLE RS #60

Waterpik® Sonic-Fusion®
- Described as the world’s first and only flossing toothbrush
- Combines the power of a sonic toothbrush with the clinically proven effectiveness of the Waterpik® Water Flosser
- Allows your patients to brush and floss at the same time and is clinically proven twice as effective as traditional brushing and flossing
- Offers three cleaning modes: Brush, Floss, or Brush + Floss. Thoroughly cleans the surfaces of the teeth while the water flosser in the center of the brush head cleans between teeth and below the gumline

Water Pik, Inc.
800-525-2020 | waterpik.com
CIRCLE RS #61

Colgate® Zero
- This line of products has offerings for kids and adults with zero percent artificial sweeteners, preservatives, and colors in the Colgate Zero toothpastes and zero percent artificial flavors, sweeteners and dyes in the mouthwashes
- The Zero Toothpaste for Kids 2-6 Years strengthens enamel and protects against caries. The kids’ toothpaste is also available for 3- to 24-month-olds in a fluoride-free formula that gently cleans teeth
- For adults, the line includes peppermint or spearmint toothpaste with a micro-foaming formula that deep cleans and provides cavity protection

Colgate
800-468-6502 | colgate.com
CIRCLE RS #62
GUM® Soft-Picks® Comfort Flex Mint
- A fresh mouth can be a real patient motivator and these picks are designed to deliver a minty fresh sensation
- Features flexible rubber bristles for gentle, effective between-teeth food and plaque removal
- It’s the newest offering in the GUM line, which includes GUM Soft-Picks Original and Advanced, clinically proven to clean between teeth as effectively as string flossing
Sunstar Americas
800-528-8537 | us-professional.gumbrand.com/gumbrand
CIRCLE RS #63

Crest Gum and Sensitivity Toothpaste
- Formulated to provide clinically proven healthier gums and sensitivity relief, allowing you to enjoy the foods and drinks you love
- Features stannous fluoride that starts working immediately to reportedly relieve sensitivity pain within days
- The toothpaste is designed to occlude exposed tubules to provide relief from sensitivity and create a layer of protection to shield exposed dentin
Crest
800-492-7378 | crest.com/en-us
CIRCLE RS #64

CURAPROX Hydrosonic PRO Power Toothbrush
- Comes with three specialized brush heads created with high-density CUREN® filaments—CURAPROX’s softest and most advanced material used in toothbrushes
- Instead of bristles, it uses CUREN® filaments—an exceptionally gentle and effective material with seven cleaning modes
- Powerful motor with 22,000 to 42,000 sonic waves
- The special handpiece design helps you to brush at the correct angle; also recommended for use with implants and braces
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800-919-0120 | curaprox.com
CIRCLE RS #65

PerioSpot® Antimicrobial Gum Treatment Gel
- A powerful gum treatment gel designed to target harmful bacteria and inflammation on the spot
- Formulated with the same Truly Natural® ingredients as the company’s recognized Tooth & Gums Tonic®, this concentrated soothing gel can be placed directly on the affected site to provide an antimicrobial boost and protection for the gums
- Indicated for both in-office treatment and patient home care, it is ideal for post-procedures gum therapy, soothing stubborn sores and inflammation, or to enhance periodontal care
Dental Herb Company
800-747-4372 | PerioSpotgel.com
CIRCLE RS #66

RiseWell Mineral Toothpaste
- Made with naturally-derived hydroxyapatite, a mineral that makes up 97 percent of tooth enamel and has been proven to strengthen and protect your teeth without fluoride. RiseWell didn’t just remove the toxic ingredients found in traditional toothpastes, it swapped in 100 percent safe and natural alternatives that clean and protect just as effectively
- Made with essential oils, such as peppermint and tea tree, and extracts, such as cinnamon and echinacea, that not only naturally freshen breath, but have been shown to reduce inflammation, fight bacteria, boost your immune system, and more
RiseWell
843-384-1282 | risewell.com
CIRCLE RS #67

OraBrite® natural
- These natural bamboo toothbrushes are available in one child and five adult styles
- Offer orthodontic v-trim, compact and full head, prepasted, and indicator bristle models
- Manufactured from highly sustainable Moso bamboo, OraBrite natural toothbrushes feature soft bristles, attractive stone paper sleeves, and recyclable nylon bristles
- Other eco-friendly products included in this line are four sizes of bamboo interdental brushes, natural waxed silk dental floss with natural mint flavoring, and cotton mesh dental bags
OraBrite
888-296-6730 | orabrite.net/Natural-Products
CIRCLE RS #68
A staffing solution that provides quality staff when you need them most

onDiem’s on-demand staffing platform helps practices scale staffing to match patient demand. [compiled by Kristin Hohman]

Information provided by onDiem.

THE PROBLEM

Staffing shortages can result in fewer patients seen and lost revenue

Finding qualified permanent and temporary staff to fill vacancies is costly and time-consuming.

THE SOLUTION

onDiem

- An on-demand staffing platform that connects dentists, hygienists, assistants, and front office personnel to temporary or permanent opportunities
- Offers the flexibility to find hours or personnel in real-time
- Eliminates staffing compliance burdens by offering pre-vetted employees
- With a free account, practices can create posts for a new temp shift, search for professionals in their area, and communicate directly with candidates
- Offers employees versus individual contractors
- onDiem employees are covered by malpractice and worker’s compensation insurance
- Professionals who are searching for a job on the platform have the option of signing up for healthcare benefits
- Eliminates the hassle of adding employees to the practice’s payroll and covers employer-paid taxes
- Allows practices to increase revenue and reduce patient wait times, without taking on additional permanent labor costs
7 ways dentists can maximize downtime

Even under the best circumstances, marketing plans get shelved. This lull is a great time to dust off those plans and put them to work. [by Naomi Cooper—CEO, Doctor Distillery]

Under normal circumstances, with operatories full of patients and a practice full of team members, dental practice marketing gets pushed to the back burner. But with offices across the country working on a limited basis or at partial capacity, many dental professionals wonder what to do with the unexpected extra time.

The silver lining: Most dentists have never had such an extended period to focus on their practice undistracted by constant tasks. To make the most of this time, pull out your years-old to-do list and start there. Need more inspiration? Consider these seven action items.

Reach Out to Patients
Many people are feeling extra anxious during these uncertain times. Take this opportunity to help put your patients at ease and be a source of information. Send an email or post updates on your social media feeds with links from trusted sources. Describe the extra steps you’re taking to maintain social distancing in your office and the type of personal protective equipment (PPE) team members are using. Explain how you’re doubling down on your already strict infection control procedures to keep everyone safe. Underscore the importance of maintaining optimal oral health at this time and build even more value for the care that your team provides. The possibilities for positive messages are endless; the main goal is to reassure your patient base and encourage them to come in for hygiene recall and dental procedures.

Enhance the Environment
If you’ve been wanting to make some cosmetic improvements to the office, dive in. Whether that involves a full redesign, new reception area furniture, a fresh coat of paint or a Marie Kondo approach to organization, you will likely never have more time and energy than right now. Even if cash flow is limited, lining up vendors and finalizing plans will make it easier to move forward when you’re ready.

Upgrade Technology
Improving business technology infrastructure is difficult to do around back-to-back appointments, so now might be an ideal time to think about how to bring your practice into the 2020s. Whether you’re ready to update your website, switch to a cloud-based practice management software, finally go paperless, upgrade to a Voice over Internet Protocol (VoIP) phone system, or implement teledentistry services, take the time to contact vendors and conduct the necessary research to make the best decision for your practice’s future.

Develop Employee Resources and Capabilities
Give your practice management consultant a call and brush up on communication skills at the front desk. Have team members take online continuing education courses. Update patient forms or, better yet, digitize your patient intake and health history processes. Review your infection control and privacy law procedures to be sure you and your team are following current protocols. Review your employee handbook if you haven’t done so in a while—and if you don’t have one, develop one.

Do Some Spring Cleaning
Many people staying home are cleaning and organizing closets and pantries, so why not do the same at the practice? Head into the office and go through your inventory. Safely discard any expired products, organize instruments, implement a color-coding system, and donate extra PPE to local health care facilities.

Conduct a Marketing Audit
Many components go into dental practice marketing, including name and logo, interior and exterior signage, patient forms, and even on-hold music, as well as all online properties—website, social media listings, and review sites. Conduct a comprehensive marketing audit to make sure everything is up to date and consistent across all online and offline materials. Reach out to your graphic designer for a logo update, and contact your website designer to ensure your online presence is up to date and HTTPS compliant.

Create Educational Videos
Video offers a powerful way to boost trust, traffic, and engagement online. With a smartphone in the palm of your hand, you can create web-quality patient videos. The hardest part can be brainstorming topics; it’s helpful to keep the patient in mind when considering content. Answer frequently asked questions. Shoot videos that explain your services. Describe care instructions for before and after the most common procedures. Explain the patient benefits of your latest and greatest technology. Talk about your practice’s robust infection control procedures. Find a spot with good lighting and a decent backdrop and get started. Don’t forget to upload the finished products to your website and share them via social media.

The author’s biography is available online at dentalproductsreport.com.
A ransomware checklist

Encrypting data and having a cybersecurity plan in place can help prevent ransomware attacks. [by Dr. Lorne Lavine]

Many practices are starting to see the light at the end of the COVID-19 tunnel and are starting to re-open to the “new normal.” However, there are still many issues related to the “old normal,” as well as this new reality. In my discussions with dental offices all over North America, there is little doubt that fear of the network being hacked and data being compromised is the number one IT concern that dentists are facing.

Ransomware is a specific concern for most offices. The reports of 400 offices in Wisconsin and 100 offices in Colorado all being hit with ransomware last year helped bring this issue to the forefront. For those unfamiliar with what a ransomware virus is, it’s a specific type of malware that locks your critical files and demands that you pay a ransom, always in untraceable cryptocurrency, in order to get the files unlocked. Many dentists are unaware that if you get hit with a ransomware virus, according to Health and Human Services guidelines, you’ve suffered a breach and must follow the Breach Notification Rule, which includes notifying all patients in writing. This would be devastating to any dental office.

The approach I take to dealing with ransomware follows this sequence: Prevent ransomware from getting onto your network, deal with the viruses that do get through, make sure that a ransomware virus can’t get unencrypted data, and have a plan to restore the data without paying the ransom. Let’s evaluate each of these.

The best way to keep ransomware and other malware from entering your network is to invest in a good firewall. While there are HIPAA guidelines that dictate one firewall as being more compliant than another, I always recommend a good business-class firewall. The firewall that comes with your cable modem or with consumer-level routers like those from Linksys, D-Link, and Netgear are a good start, but there are better options out there. I normally recommend firewalls from companies like Sophos and Sonicwall.

Of course, no firewall is foolproof, especially considering that the vast majority of ransomware enters the office network through email, so you’ll need to supplement the firewall with anti-malware software. While most general-purpose antivirus programs claim to handle ransomware, in my experience, that isn’t always the case. Investing in additional ransomware-specific software is the route to go. I use a software program called Intercept-X. Other good choices are Crypto-prevent and Hitman Pro.

One of the hallmarks of the Breach Notification Rule is that if there is evidence that data is encrypted, you don’t have to declare a breach. There is no reason for offices to leave their data unencrypted. All server operating systems from 2012 onward have a built-in encryption program called Bitlocker. There’s no additional cost, other than getting an IT company to activate this software if you’re not familiar with doing so yourself.

Finally, because not all ransomware attacks can be prevented, practices should have a system in place to recover from this type of cyberattack. Restoring a recent backup is usually the best way to avoid paying the ransom. Having an encrypted backup can help restore data without having to pay the ransom, as most (but not all) ransomware viruses cannot infect an encrypted backup. You absolutely need an offsite backup in case the local backup does get infected. And, obviously, you need to identify where the ransomware virus entered your network and remove it before restoring the backup to prevent a repeat occurrence.

Ransomware is a significant threat to all dental offices and continues to be a major concern. With a pragmatic approach to dealing with these viruses, you can limit your risk and have the peace of mind that your critical patient data is safe and secure.

About the Author

Dr. Lorne Lavine, founder and president of The Digital Dentist, has more than 30 years invested in the dental and dental technology fields. A graduate of USC, he earned his DMD from Boston University and completed his residency at the Eastman Dental Center in Rochester, N.Y. He received his specialty training at the University of Washington and went into private practice in Vermont until moving to California in 2002 to establish TDD, a company that focuses on the specialized technological and HIPAA needs of the dental community. He can be reached at dlavine@thedigitaldentist.com or 866-204-3398.
The CoVid-19 Crisis is changing how we protect our staff and patients forever

“Health care workers are at the greatest risk — they can encounter diseases and infections daily and their patients.” Gamio, Lazaro. “The Workers Who Face the Greatest Coronavirus Risk, New York Times, March 15, 2020

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Teledentistry is finally getting the recognition it deserves, not just as a short-term solution for COVID-19, but as a long-term play for innovative groups, DSOs, and practices as we accelerate toward an online world in healthcare. However, as a dental software consultant, educator, and writer over these past years, as well as having been involved with telehealth from its early days, I am alarmed by the number of vendors that have cropped up over these past few months offering “Teledentistry” solutions.

That’s to be expected as the COVID-19 crisis has presented business opportunities to software vendors. But it is also important to recognize that in a post COVID-19 world, teledentistry will prove to be a long-term game changer for many dental organizations and practices as we move into an increasingly online world. What is most alarming though is that in seeing the business opportunity presented by the present pandemic, a number of companies have quickly thrown together basic teleconferencing capabilities marketed as “Teledentistry” solutions.

This reminds me of the early days of electronic health records (EHR) when, because of the quickly growing demand for this new technology, it became a competitive advantage for a software vendor to say they had EHR, whether they did or not. As groups, DSOs, and practices look to incorporate teledentistry into their workflows, it is getting more and more confusing just navigating the landscape with the sheer number of vendors offering solutions. Adding to the confusion are homegrown options being talked about, which are based on culling together disparate third party apps (video conferencing, scheduling, payment apps, etc.) So, what’s a group or practice to do if they want to embrace teledentistry as an offering for their patients—both during COVID-19 and beyond—but don’t know where to start or how to effectively navigate through the maze of vendors and solutions offered?

As I have told my group, DSO, and practice clients, the first step is defining how you will use teledentistry both now and in the future, and understanding the features and functionality that will support those objectives and goals. Let’s be clear, true teledentistry is not just about doing teleconferencing with patients (that’s the easy part). But it’s all the additional functionality within the virtual visit workflow including asynchronous communications, collaboration, etc., which make it a solution that a dental organization can truly embrace.

To that end, I’m going to put on my dental software consulting cap here and offer up a few features that you should be thinking about as you evaluate teledentistry vendors and their technical platforms. These have come from distilling interviews and demos with teledentistry vendors. There are numerous features to look for when evaluating the teledentistry platform that’s right for your group, DSO, or practice. In this article we can only cover so much and will focus on just a few of them.

**Customized Consent and History Forms**

Make sure the system you purchase gives you the ability to send and receive consent forms for your virtual visit just as you would do during an onsite visit. It’s also critical that you add COVID-19-specific consent forms to the packet your patient fills out online. Remember, the virtual visit holds as much liability as an in-person visit. In addition, the teledentistry solution you use should have online clinical history, problem, and medication forms similar to what you would gather during an onsite visit.

**EHR and Patient Documentation**

A virtual visit wouldn’t be very helpful with a little homework, you can evaluate some of the many teledentistry solutions and come away with what’s best for your group or practice. [by Mike Uretz]
without the ability to document all aspects of the visit, just as you would do during an onsite visit. Teledentistry platforms I have reviewed run the gamut on this. Some offer no ability to document within the teledentistry software.

When I ask how a provider can document the virtual visit, their answer is that they are either working on interfaces to the group or practice’s present practice management software, or the providers need to keep two windows open—one for the teledentistry virtual visit and the other for the practice management system. Be skeptical, however, of teledentistry vendors that claim they are working on interfaces to send a clinical visit data to another system as most practice management vendors do not allow that.

Other vendors offer a rudimentary documentation system similar to a notepad or electronic health records Word document. What most impressed me, though, as a proponent of dental EHR, is the actual incorporation of a true EHR-based clinical documentation system within the telehealth software itself. To understand what I mean by a “true EHR” please refer to some of my past articles published by Dental Products Report.

Asynchronous vs Synchronous Patient Communication
There is much confusion surrounding these teledentistry buzzwords. For the most part think of synchronous communication as a real time patient-facing component of a visit using secure HIPAA compliant teleconferencing. Asynchronous communication in teledentistry is more commonly referred to as store and forward capability. So, for example, a patient takes a picture of their mouth and sends it with the message to their provider. The provider in turn messages back to the patient. And on and on—all in a secure portal.

What I have found is some teledentistry platforms offer real time synchronous visits, and some support asynchronous text or chat-type visits. But not all support both types of visits, which when you think about it, is really needed to meet the needs of a true teledentistry workflow. Also, if you are evaluating platforms that have both types of visits, make sure that it is easy enough to switch back and forth and there are alerts which help both provider and patient know what’s going on at any one point.

“Some teledentistry platforms offer either synchronous or asynchronous visits, while others offer both components.”

Collaboration
Another important feature I feel is essential in a teledentistry system—collaboration—can actually give you functionality that typically would not be available in an onsite visit. Both the synchronous and asynchronous functionality should allow for collaboration between the patient, yourself, and other providers that are involved in the case. From a patient care standpoint, it is very helpful to bring in a care team during the video portion of the virtual visit, as well as supporting capability to share records, images, comments, etc., with other specialists using asynchronous store and forward functionality—both before and after the patient visit.

Getting a Fair Contract
Over the years I have written articles, produced podcasts, conducted webinars, and presented tips at conferences on negotiating contracts that level the playing field with dental software vendors. One of my passions has been to help clients obtain winning contracts and agreements. Teledentistry contracts should incorporate many of the same ideas and structure as cloud-based dental software contracts. So, after having properly evaluated and chosen your teledentistry software, do yourself a favor and don’t just sign on the dotted line without first understanding and negotiating your contract to your benefit.

Where Do You Go From Here?
Hopefully this article has given you the inspiration to evaluate teledentistry vendors by drilling down on their features and functionality. Your goal as you determine the vendor who best fits your strategy is to separate the true full featured teledentistry vendors in it for the long haul from the vendors that are not as committed and in it for the short-term buck. Consider this article just the tip of the iceberg. There are many more innovative features to consider such as HIPAA and security, real time patient education and image presentation, cell phone based intraoral image capture, and artificial intelligence, among others. And in fact, with the explosive growth of this technology, there are new features and functionality being created by innovative companies all the time.

To keep up with this explosion of information including tips for negotiating your software deal, you can download your free copy of The Teledentistry Survival Guide for a limited time at teledentistrysurvival-guide.com.

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. As a leading industry consultant and educator, Uretz has helped DSOs and dental groups 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 muke@dentalgrouppartners.com or 425-434-7102.

DATA MANAGEMENT

BEST PRACTICES

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Mike Uretz is a nationally recognized dental software, IT and Electronic Health Records (EHR) expert. He is the founder of DentalSoftwareAdvisor.com. As a leading industry consultant and educator, Uretz has helped DSOs and dental groups 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 muke@dentalgrouppartners.com or 425-434-7102.
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Dental composites first hit the industry in the mid-20th century. From the development of the acid etch technique by Dr. Michael Buonocore in 1955 to today’s materials with biorestorative properties, dental composites have revolutionized restorative dentistry for the past 60 years and changed the way dental professionals approach restorative dentistry.

**They changed treatment in the anterior and improved esthetics in the posterior.**

By the 1990s, tooth-colored restorative materials had helped usher in a new era of esthetic dentistry. Composite resins have improved their polishability over the years. Many of today’s composite materials have proved to have the mechanical and wear properties restorative dentistry seeks while providing the look of a natural tooth patients demand. Dentists now use composite resins in a range of cosmetic procedures, including anterior veneers, diastema closings, and small class III and extensive class IV restorations. Moreover, all classes of posterior restorations use composite resin restorative materials. They are pursuing bioactive and biorestorative properties for restorations.

**They allow for more conservative preparations.**

For many years, dentists had to remove what was otherwise healthy tooth structure to ensure retention of the filling material or to prevent recurrent decay. However, the ability to adhere the material to enamel and dentin eliminates the need to remove additional healthy tooth structure to create retentive features. Adhesive methods, not prep design, retain dental composites.

**They made isolation critical.**

Resin composites require excellent isolation because saliva, blood, and other contaminants interfere with the adhesion of the materials with patients’ natural tooth structure. Contamination of the restoration with bacteria, bacterial enzymes, or oral fluids that get between the tooth and the restoration leads to premature failure and recurrent decay. Ensuring a pristine field for the bonding is crucial.

**They require a delicate balance between being too wet or too dry.**

While isolation is critical to the success of placing dental composite restorations, dentists must be careful to not over-dry the tooth. When the tooth is too dry, potential exists for post-operative sensitivity. Dentists must find the balance between the two to facilitate bonding with isolation while preventing post-operative sensitivity by keeping the tooth moist enough during the procedure.

**They mandate reading the manufacturer’s instructions.**

Dental composites are technique sensitive, and techniques often vary by brand. When working with a dental composite material, dentists must follow many steps for placing them correctly specific to their system. Following the instructions is essential to ensuring the best possible result from the material dentists are using for composite restorations—and for avoiding a compromised result. Moreover, many experts agree that being familiar with a system can boost productivity and efficiency when placing composite restorative materials.

**They are pursuing bioactive and biorestorative properties for restorations.**

Today’s manufacturers are attempting to take bioactivity to the next level by developing materials with biorestorative properties. Marketers of biorestorative materials say they can help the tooth structure repair itself by releasing essential building blocks such as calcium, phosphate, and fluoride.

Since Dr. Buonocore developed the acid etch technique to increase the adhesion of acrylic materials to enamel, composite resins have been a popular restorative material for dental practices the world over. Little did Dr. Buonocore know that his discovery would change clinical dentistry in many ways. More dental composite materials and more choices are available now than ever before for restorative dentistry. With the innovation in the material, it will be exciting to see what changes in clinical dentistry are in store for tomorrow.

References available online at dentalproductsreport.com.
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