Florida's Outlook On the Dental Laboratory Profession
1st Quarter 2019
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PREVENTING ERRORS in the Dental Laboratory

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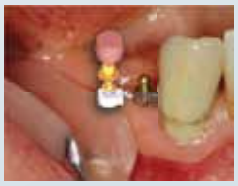

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Get Involved

In this message, I am reaching out to those who may not be involved as a member of an industry organization at either the state or national level. There is power in numbers and I would like to encourage you to support your industry and become involved.

"With the power of more involvement, we have a better chance to build the resources necessary to help ourselves. We need you."

We are a small industry that provides a very important service to millions of people, yet hardly any of those who benefit from our service know what and how we do what we do. However, why does that matter? You know in some ways it is nice to work incognito, it seems to be less pressure. But when I want to learn something, I have a very difficult time finding resources to tap into. It seems like all the information on the subject matter I want to research is provided by the very vendors who are selling it. Look, I'm not saying it is bad information, but it isn't without some bias.

So, what does that have to do with getting involved in an organization? I know, at least at our annual Southern States Symposium & Expo, we try very hard to keep the content of our program educational. The way FDLA can fund the programs that we do is because of our vendors' support—and it is greatly appreciated. However, if we had more membership involvement, we could expand our offerings not only at the Symposium, but throughout the year.

We need you.

Also, with the power in numbers comes the power of more ideas on important issues, such as how we can better address the issues of lack of schooling for the future of our businesses and industry. Myself, I am constantly being challenged by my lack of knowledge about many of the processes we need to use to provide the services that we do. I don't have any formal education on chemistry, biology, computer science or business. That means that, like so many of us, I have learned by the seat of my pants. Don't get me wrong, our business has been very successful in spite of that fact, but the technology that is being used today needs a more formal approach to the education of the future dental technicians.

With the power of more involvement, we have a better chance to build the resources necessary to help ourselves. We need you.

So I ask, please get involved with FDLA. Pay your dues. Participate in the decision making. Make sure that FDLA's money is being used wisely. If we love what we do and nurture it, it will pay dividends for all of us. Thank you and I hope you all consider more participation in FDLA and other dental laboratory organizations because dental technicians keep America smiling!

Tim Stevenson, CDT
FDLA president

FDLA Mission

Serving Florida's dental technology professionals as a valued part of the dental team enhancing oral health care.

FDLA Vision

Advancing the individual and collective success of Florida's dental technology professionals in a changing environment.

Values Statement

FDLA's board of directors and professional staff are guided by these principles:

- Integrity
- Leadership
- Recognition
- Safety
- Acceptance
- Innovation

Contents

focus

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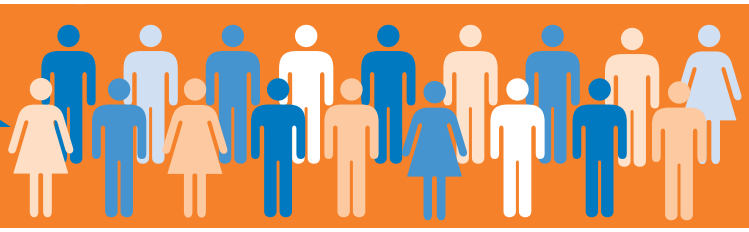

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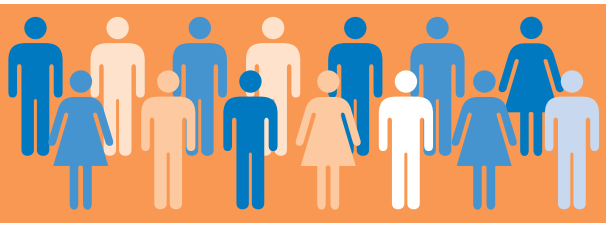

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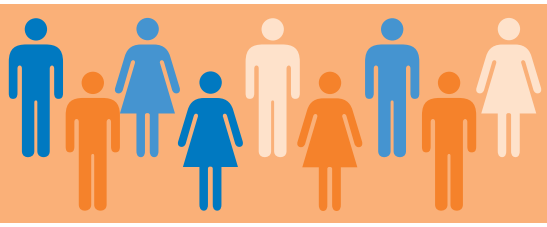

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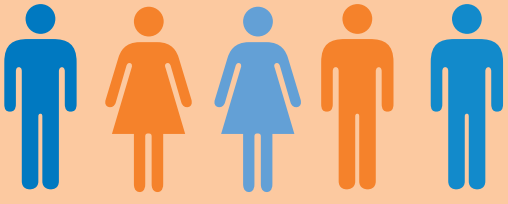

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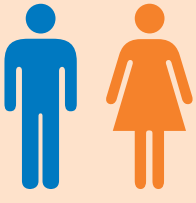

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Any commercial dental laboratory registered by the State of Florida Department of Health is eligible. Membership shall be in the name of the laboratory as registered by the State of Florida. The owner, partner or designated representative shall represent the laboratory in meetings and is eligible for elective office and voting privileges. Dental laboratories located outside of the state of Florida may join as an Affiliate member using this form.

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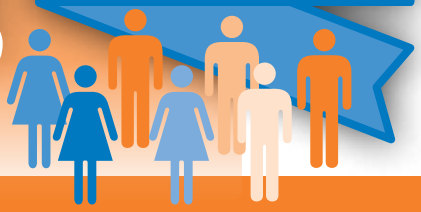

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Member Benefits

Your membership in the Florida Dental Laboratory Association (FDLA) will bring you a return many times greater than your investment. The association's proven programs provide members with the tools they need to operate their businesses successfully.

Education

As the leader of dental laboratory technology continuing education within the state of Florida, we are committed to helping laboratories formulate a business that will grow, meet the requirements mandated by Florida law and help Certified Dental Technicians (CDT) and Certified Dental Laboratories (CDL) maintain their certification. FDLA members are eligible to receive discounted rates on all continuing education.

District Workshops – Rotating around the state of Florida, FDLA District Workshops offer laboratory owners and technicians/staff the opportunity to receive continuing education credits year round on a variety of topics including the required "Florida Laws and Rules for Dental Laboratories" course.

Online Education – FDLA offers online education, including the mandatory "Florida Laws and Rules for Dental Laboratories" course, on our Website www.fdla.net.

Southern States Symposium & Expo presented by FDLA – As the largest not for profit dental laboratory meeting in the country, attendees have an opportunity to meet with vendors of dental laboratory products/services to discuss equipment, supplies and techniques that can improve their business. A wide range of technical clinics are scheduled to provide members with the most current industry standards and continuing education.

Legislative/ Government Relations

FDLA works with several agencies to modify and strengthen existing laws affecting dental laboratories and ensure that such regulations strike a balance between patient safety and ease of compliance. FDLA members are provided critical updates and reminders for important legislation, deadlines and regulatory alerts.

Florida State Laws Affecting Dental Laboratories Manual – FDLA has developed a manual defining the state laws affecting dental laboratories. This manual explains in detail: continuing education, data required on prescriptions, materials disclosure and point of origin requirements necessary with all communication and case work executed between the dentist and laboratory.

Continuing Education Requirement – The state of Florida mandates that each laboratory in Florida must receive 18 hours of Florida approved continuing education credit every two years. FDLA is an approved provider and offers a variety of courses – including the mandatory course on "Florida Laws and Rules for Dental Laboratories."

Business Services

(available to laboratory owners)

Human Resource Hotline – The average dental laboratory does not have the workforce or means to hire a human resources manager. Even larger laboratories that have a human resources manager may need some advice on tough situations from time to time. FDLA members receive human resources telephone consultation services FREE OF CHARGE!

Credit Card Payment Processing – FDLA member laboratories are eligible to receive discounted rates on credit and debit card processing. Our provider specializes in creating card acceptance programs specifically for the dental industry.

Communication

***focus* Magazine** – FDLA's quarterly *focus* Magazine is the most widely read state dental laboratory association publication. It provides updates on crucial industry information, new technology, laboratory management and other issues of vital concern. FDLA members receive a complimentary subscription as part of their membership.

Website – FDLA's Website, www.fdla.net, has comprehensive information on pertinent industry updates as well as conference registration forms, an online directory that enables dentists to look up FDLA member laboratories and other links.

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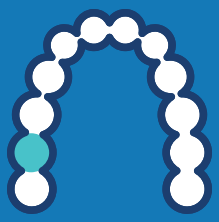

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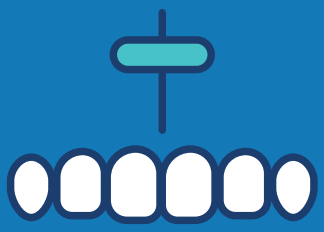

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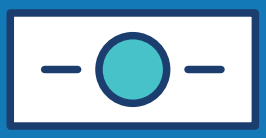

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Protect Yourself and Your Coworkers With a RESPIRATOR MASK

by Tim Stevenson, CDT

So, who is using a surgical mask to protect yourself from dust in the laboratory? You know, like the ear loop or elastic band retained type for dental procedures that our dental clients use when treating their patients? I will admit to using them for many years as my main protection from inhaling the dust that the dental laboratory produces, but I don't anymore and for good reason.

I encourage each individual to research for themselves the most appropriate protection in their work environment.

A surgical or dental procedure face mask is meant to protect others from the fluids, droplets and other contaminates that are expelled when we breathe, cough and sneeze. In other words, they help protect others from the one wearing the mask. What we need in the dental laboratory is something that protects us from contaminates in the air that we are breathing in. We should consider a respirator type of mask.

There are three types to choose:

1. Air-Purifying Respirators
2. Atmosphere-Supplying Respirators
3. Negative- and Positive-Pressure Respirators

Which one to use will depend on the work environment. There is ample information online that one can access to determine what is appropriate in their environment, but for the most part, air-purifying respirators should protect in most circumstances in the dental lab.

There are three types of air-purifying respirators:

1. Filtering Face Piece Respirators
2. Tight-Fitting Respirators
3. Powered Air-Purifying Respirators

Filtering-face piece respirators should be adequate for most circumstances in the laboratory, but I encourage each individual to research for themselves the most appropriate protection in their work environment.

The NIOSH (National Institute for Occupational Safety and Health) certifies respirators and is a great source for understanding which respirator to choose. There are seven classes of filters for NIOSH-approved filtering-face-piece respirators available. Ninety-five percent is the minimal level of filtration that will be approved by NIOSH. The N, R, and P designations refer to the filter's oil resistance. There is a lot to understand about which respiratory mask will work best, so do a little reading at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/RespSource.html and www.osha.gov/SLTC/respiratoryprotection. Learn about what is truly going to be protective in your laboratory and stop relying on surgical masks.

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These companies support the Florida Dental Laboratory Association in our vision to advance the individual and collective success of Florida's dental technology professionals in a changing environment. They are FDLA's Business Partners, and have pledged their support to Florida's dental laboratory profession.

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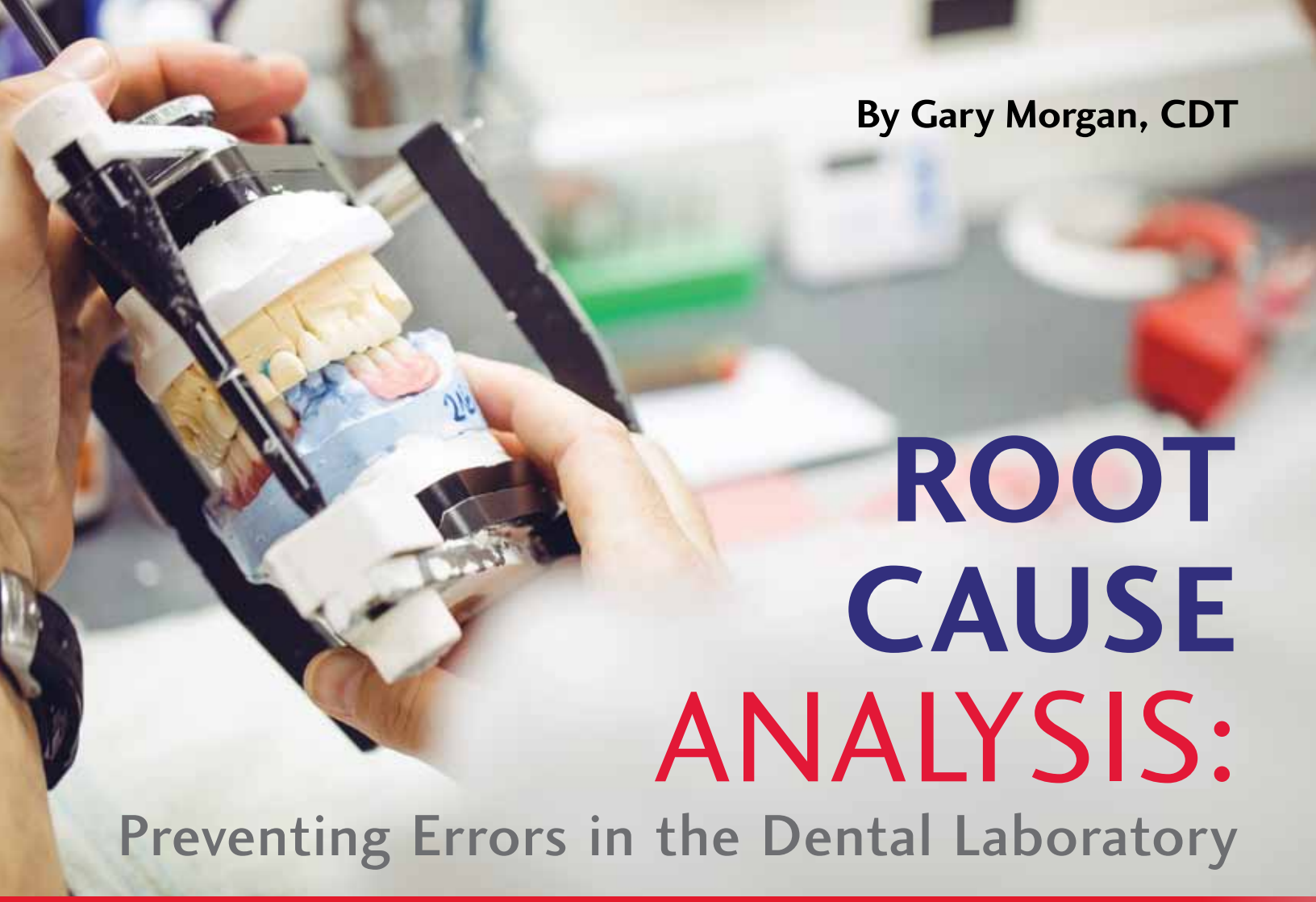


By Gary Morgan, CDT

ROOT CAUSE ANALYSIS:

Preventing Errors in the Dental Laboratory

NO DENTAL LABORATORY LIKES HAVING REMAKES.

They are a major disruption to the business's operations and are the biggest detriment to productivity and profitability. Customer satisfaction can suffer damage if remake issues are not resolved quickly and effectively.

The time spent capturing, analyzing and investigating the data to determine the root cause of internal and external remakes and customer complaints may seem unproductive. It is usually faster and easier to resolve an incident than to devote time to determining why these events are happening. The problem is that incident resolution, while appearing to solve the immediate urgency of the remake or complaint, may not effectively eliminate or even reduce the likelihood of the event from happening again.

It is necessary to immediately address customer concerns. Incident resolution is aimed at making the customer happy at that moment and should be documented as to the immediate effectiveness of the corrective action. Usually, that corrective action means remaking the work or making an adjustment to the work and offering that service at no cost, reduced cost or delivering it faster than usual to ease the customer's irritation. Once the fire has been put out though, the interval data should be reviewed to determine if the incident was part of a trend or systemic issue.

THE VALUE OF DATA

In order to effectively perform root cause analysis, it is vital to capture accurate data about remakes and complaints. The majority of labs use a case management software program or application. Most of these systems have some capability to capture data and track complaints and remakes. Using this asset effectively can streamline efforts at identifying issues. In the absence of this capability, it should still be manually logged into a format that will create an accurate data set of the events.

Root cause analysis is a four-part process:

1. Data collection
2. Causal factor charting
3. Root cause identification
4. Recommendation generation and implementation

Trend analysis requires data be reviewed on a scheduled basis and then investigated to determine an effective corrective action to fix a systemic problem.

Root cause determination requires:

1. Clear remake/complaint definitions
2. Standard Operating Procedures for all employees who receive data
3. Consistent/standardized data entry
4. Good reporting mechanisms
5. Scheduled review of the data

CAUSAL FACTOR CHARTING

Once data has been created, the real beneficial work of addressing the problem can begin. This includes determining an approach to causal factor charting. The method for analyzing data can range from simple brainstorming activities to formal approaches, such as Failure Mode Effects Analysis (FMEA).

Pareto charts are a simple way to show the most common occurrence of defects or issues including the causal factors. Many case management systems can produce either this kind of chart or a simple pie chart.

Flow charts are an effective way to follow a process to identify causal factors that could contribute to an undesired outcome. The work flow is diagrammed in the flow chart and then each activity is reviewed to try to identify where in the process something went wrong.

The larger or more complicated the business model of the organization, the more valuable sophisticated tools, such as process control charts and statistical techniques, can be utilized to determine when a systemic failure is occurring.

Cause and effect diagrams are a great way for dental labs to perform FMEA. Causal factors can be graphically depicted using a tool like an Ishsikawa diagram, commonly known as a fishbone diagram. Using the central backbone as the connector identifying the remake or complaint, the fundamental root causes are depicted on the connecting bones. The four root causes are:

1. Material
2. Process/equipment
3. Technician
4. Dentist

The causal factors are then identified and investigated to determine their part in the complaint or remake.

INCIDENT RESOLUTION IS AIMED AT MAKING THE CUSTOMER HAPPY AT THAT MOMENT AND SHOULD BE DOCUMENTED AS TO THE IMMEDIATE EFFECTIVENESS OF THE CORRECTIVE ACTION.

FIGURE 1

IMPROVING CUSTOMER SATISFACTION IS THE PRIMARY GOAL OF A QUALITY MANAGEMENT SYSTEM.

Another effective approach to determining root cause and formulating corrective actions is to have brainstorming sessions, where input is gathered from all individuals or departments fostering an open exchange of information. This approach requires a good facilitator and all input should be considered without criticism.

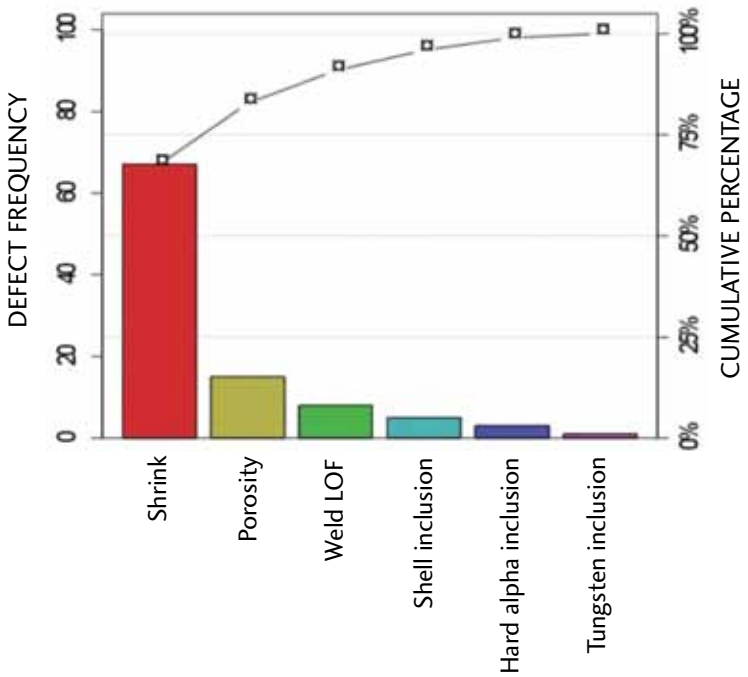
A really basic approach is to simply ask why five times. It is an effective approach if each why reason is taken seriously as to its causal factor. By the fifth why, a root cause should be described and then a corrective action determined.

DEFINING ROOT CAUSES IN DENTAL LABORATORIES

The least likely root cause would be material failure. This would mean the material is defective and there is nothing that you can do to make it work. This would usually be identified by failures with all of the product that contains the material, such as fracturing, debonding or shade.

FIGURE 2:

Pareto Chart of Titanium Investment Casting Defects



More likely is that the process for manufacturing is faulty in some way—this includes the failure of equipment that was used in the process. Not following manufacturer's instructions for use or processing could be a primary causal factor. Equipment that is not properly maintained or calibrated could also contribute to the failure.

If the material and processing are not a factor, then it can be attributed to a person, either in the lab or in the dental client's office. The causal factors for identifying that the technician is the root cause could be that they fail to follow the client's instructions, don't understand the instructions or don't question instructions that they may think are inaccurate. The technician may not be following, or has changed, the manufacturing processes that are proven to produce the desired outcome. Another factor could be that the technician may not possess the skills to deliver the desired quality.

Most dentists will proclaim that the lab is responsible for all remakes, while most technicians will proclaim that the dentist is responsible. The causal factors contributing to failures that determine dentist root cause could be that the dental client does not communicate the specifications of the specific case accurately or adequately. The quality of the impression is a major factor in contributing to failures. The dental client may not be trained on proper use and handling of materials.

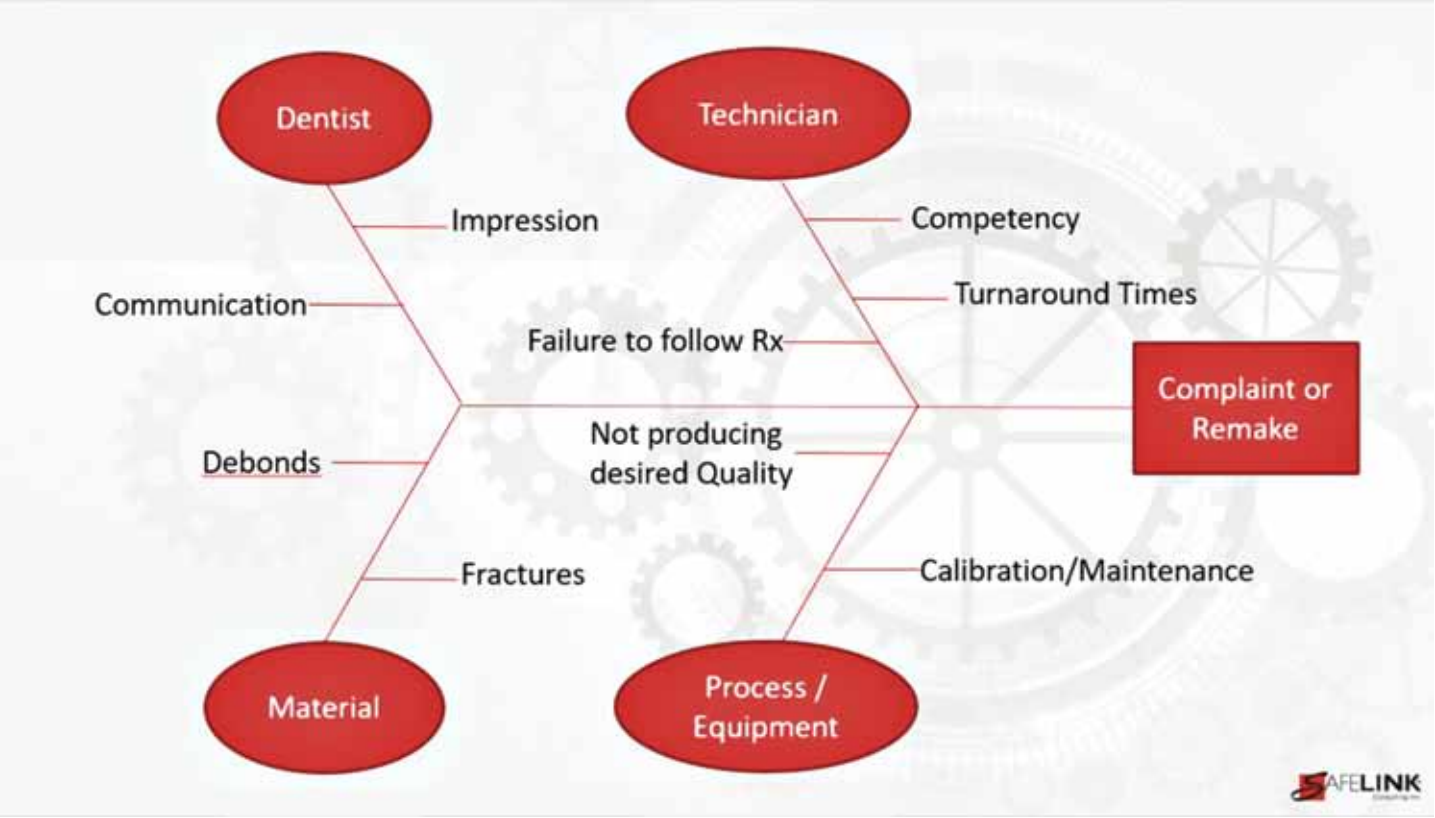
RECOMMENDATION GENERATION AND IMPLEMENTATION

Once all of the contributing causal factors have been determined, then the investigation can turn to determining the fundamental root cause and to hopefully developing a corrective action that will effectively eliminate or reduce the likelihood of recurrence. It may take more than one attempt to deliver an effective corrective action.

Documentation of the investigation, determination of the root cause, and corrective action on a corrective action/preventive action form is important to stay on top of remakes and complaints before customers are lost. Monitoring the effectiveness of the corrective action is critical to ensuring that the issue is resolved to the satisfaction of the customer, whether that customer is external (dental client) or internal (technician to technician).

FIGURE 3

Ishsikawa Diagram Showing the Four Root Causes of Complaints or Remakes



MOST DENTISTS WILL PROCLAIM THAT THE LAB IS RESPONSIBLE FOR ALL REMAKES, WHILE MOST TECHNICIANS WILL PROCLAIM THAT THE DENTIST IS RESPONSIBLE.

Internal tracking of quality control activities can be very beneficial in identifying issues before they reach final quality control. Final quality control should prevent lab created errors from ever reaching the dental client.

Improving customer satisfaction is the primary goal of a quality management system. Capturing data on complaints and remakes, analyzing that data for trends detrimental to product acceptance, investigating trends and determining the root cause of complaints and remakes will lead to developing corrective actions that will go a long way in ensuring customer retention.

ABOUT THE AUTHOR:

Gary Morgan, CDT, is the co-owner, vice president and senior consultant of SafeLink Consulting, Inc. He has been guiding dental laboratories implementing FDA-compliant quality systems since 2007. A Certified Quality Auditor by the American Society for Quality, he is also a certified DAMAS consultant and auditor. He is a Certified Dental Technician as well as recognized by state and national organizations for his service to the industry. NADL has presented him with a Merit Award in Recognition of Contributions and Outstanding Service to the Dental Laboratory Profession.

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By Mark D. Williamson, CDT, DTG and
Allie Williamson, AAS, BS, CDT-TE

Predictable Advanced Implant Supported Dental Prosthetics

A Sequential Method to Technical Fabrication

Predictable results don't just happen without a collaborative team and a plan. Fabricating implant supported prosthetics can be disastrous if the technician or laboratory is not on the same page as the restorative dentist. Following a step-by-step procedure will best prepare you, the technician, in how to manufacture a successful restoration for the patient. Remember, making a prosthesis that is functional, esthetic and long lasting is the ultimate goal for the patient's health and well being—not just physically, but emotionally.

Having the technician present the day of surgery is even more important.

To achieve predictable results, it all starts with what I like to call the ultimate dental alliance. The dental alliance is a team of dental professionals working together for the common goal of success. The alliance consists of a restorative dentist, the oral surgeon, the dental technician and an implant company representative.

The restorative dentist is (or should be) the leader of the alliance. I like to think of the dentist as the quarterback who directs the team to a predictable result for the benefit of their patient. The restorative dentist will consult and work with an oral surgeon to collaborate on procedures during implant surgery and strategically place the implants for the final restoration.


1

Having a dental technician in the alliance is valuable to the dentist and the dental laboratory during all phases of the treatment plan. The technician can offer valuable input from the early phases of the restorative procedures with the use of diagnostic software and fabrication of surgical guides, if needed. However, having the technician present the day of surgery is even more important. The technician's role in the alliance not only benefits the dentist and surgeon with the temporary prosthetic conversion, but personal interaction with the patient becomes valuable later when the dentist and technician initiate their final prosthesis.

The implant rep has an equally valuable role in the alliance. They offer guidance with their respective implant systems, implant parts and instruments, thus, they are encouraged to attend the day of surgery to assist the team as needed and build a professional rapport with the other members of the alliance. The positive relationships built among the team members promote positive referrals for all.

Step One

Prior to the day of surgery, the alliance team members and patient meet, plan and, in this case, decide on a full upper implant supported prosthesis.

FIGURE 1: The laboratory fabricates a basic surgical guide/template and a provisional prosthesis (full denture) that will be used for the conversion process.

FIGURE 2: A basic surgical guide/template is fabricated. The laboratory duplicates the provisional denture in clear acrylic. The clear duplicate denture's facial flange is cut to 15mm in height measured from the incisal edge/occlusal plane. This provides the oral surgeon a visual reference indicating adequate bone reduction for final prosthesis fabrication.

FIGURE 3: A 7mm-8mm wide lingual trough is cut from the center of the first molar or second bicuspid to the center of the reciprocating first molar or second bicuspid. This ensures the implants are placed within the ideal bucco-lingual position to the ridge and indicates whether the angulation of the multi-unit abutment will need to be corrected to an optimal position.

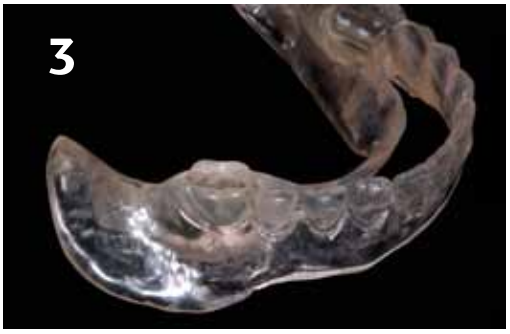
FIGURE 4: A 30 degree mark scribed into the acrylic guides the oral surgeon when determining the posterior implant angulation for Nobel Biocare: All on Four surgical protocol.

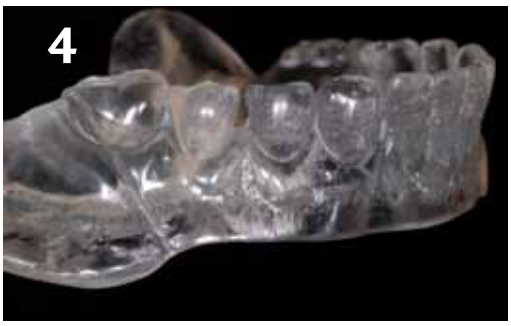
FIGURE 5: A buccal view of an upper surgical guide/template.

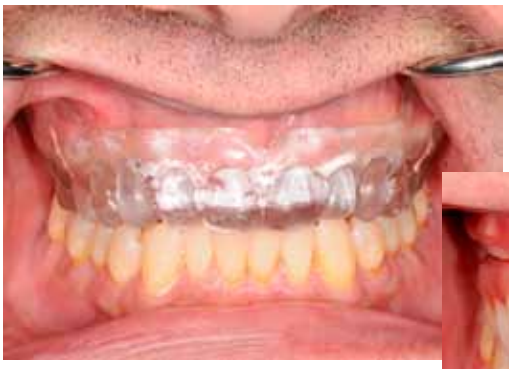
FIGURE 6: The surgical guide is seated in the patient's mouth for evaluation prior to surgery.

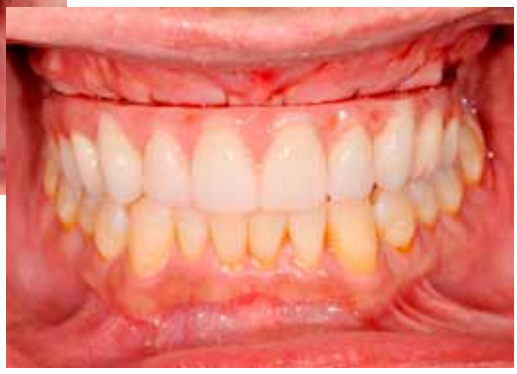
FIGURE 7: The provisional prosthesis is converted, contoured and polished, seated and the screws are torqued in the patient's mouth. All flanges and the palate are removed. The intaglio surface is made flat/convex for optimal hygiene.

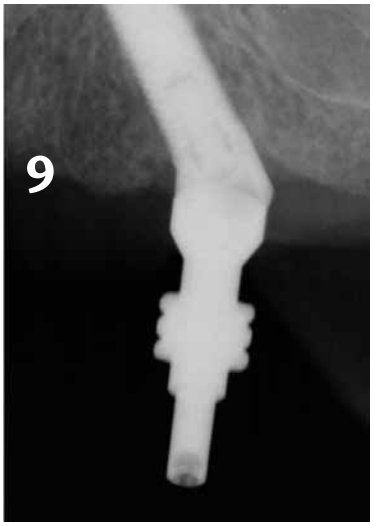
The patient will function with their converted acrylic provisional bridge for four to eight months during osseo-integration of the implants.

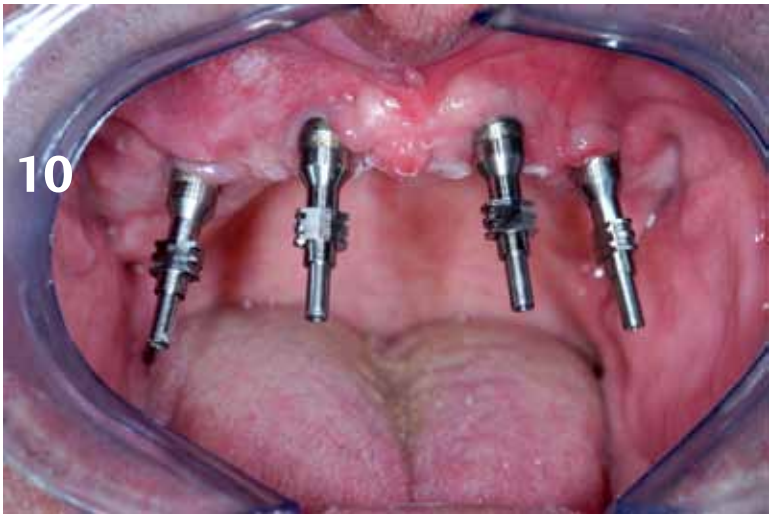












Step Two

It's advised for the dentist to have a benchmark of radiographs for reference.

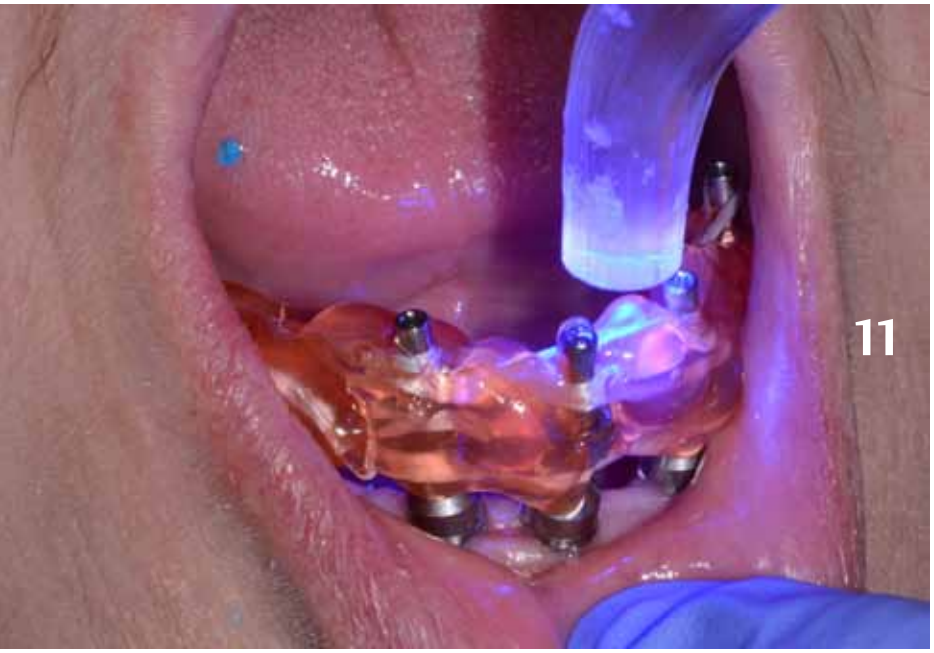
After the oral surgeon has verified and approved that the implants have successfully integrated, the final prosthesis is initiated. The restorative dentist begins treatment with final impressions. While there are several successful approaches and techniques to capture accurate implant impressions, I will discuss the basic technique in this piece. First, the restorative dentist removes the provisional prosthesis from the patient's mouth. They should evaluate the implants and abutments with radiographs for bone loss and verify a proper seat of the multi-unit abutments. It's advised for the dentist to have a benchmark of radiographs for reference and comparison with future records.

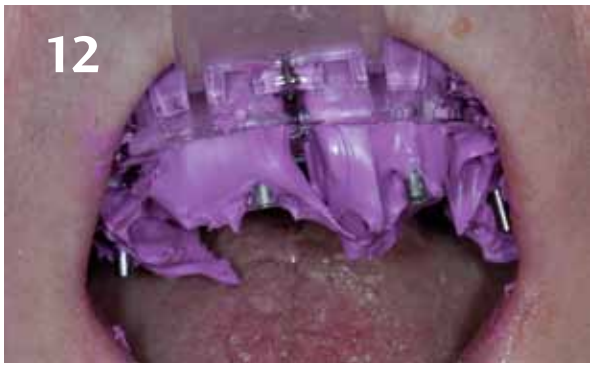
FIGURE 8: The impression copings are seated and secured to the multi-unit abutments. The dentist and/or oral surgeon may torque the impression coping, then reverse torque as a test to verify implant osseo-integration.

FIGURE 9: A radiograph confirms proper seating of the impression copings.

FIGURE 10: All four impression copings are seated and verified. Some protocols involve luting the impression copings together with floss and Duralay pattern resin or specific light cure jig material (**FIGURE 11**).

FIGURE 12: In order to remove the impression without risk of distortion, the open tray technique requires all screws to be removed prior to removing the impression from patient's mouth. After impressing, the provisional prosthesis is secured back into the patient's mouth and re-torqued to the manufacturer's recommended torque value.





Step Three

The impressions are sent to the lab for fabrication of the soft tissue model, verification jig and screw retained bite-rim for the patient's next visit (**FIGURES 13** and **14**).

FIGURE 15: The soft tissue model is fabricated by the laboratory.

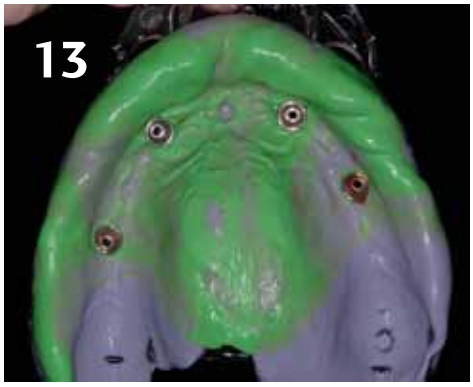
FIGURE 16: A sectioned verification jig is prepared for the dentist to lute together in the patient's mouth for superior accuracy. The verification jig is used as a tool to verify that the mouth, the master impression and the master model are equally accurate. If the verification jig does not seat equally passive from the mouth to the model and/or seats with a bounce, the verification jig needs to be sectioned and the dentist must re-lute in the mouth. The laboratory technician will need to modify the position of the analogs in the master cast indicated by the re-luted verification jig (**FIGURE 17**).

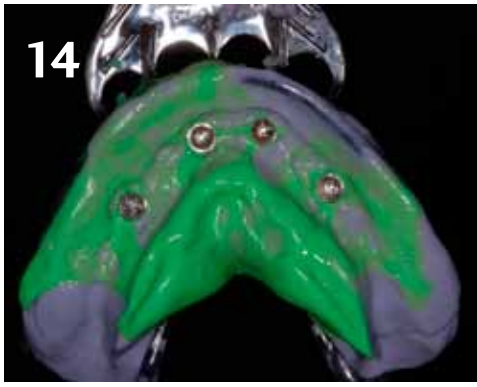
FIGURE 18: The laboratory technician fabricates a screw retained bite-rim for a secure centric relation record. The base plate is usually made of a light cure baseplate material with two titanium temporary abutments placed in a reciprocating cross arch position.

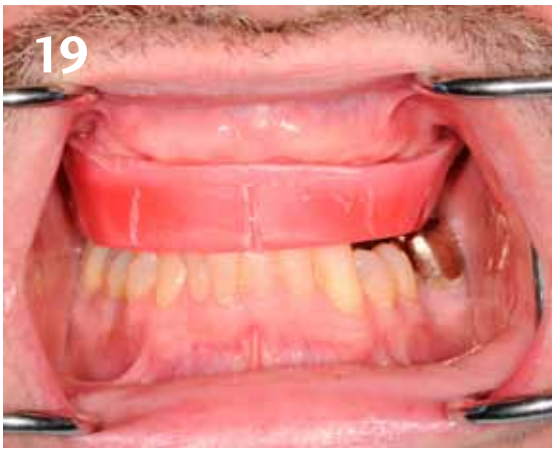
FIGURE 19: Using the temporary abutments allows the base plate to be fabricated to a palate-less design and secured with stability to the implant abutments.

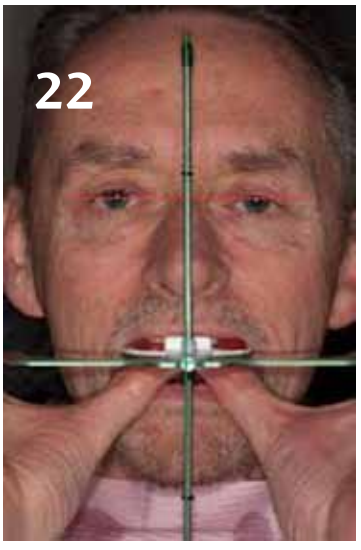
FIGURES 20 AND 21: The dentist continues with their usual treatment for a conventional complete full denture. The same fundamental information is required: midline, cuspid lines, smile line, overbite, occlusal-horizontal plane and clinical assessment of lip support.

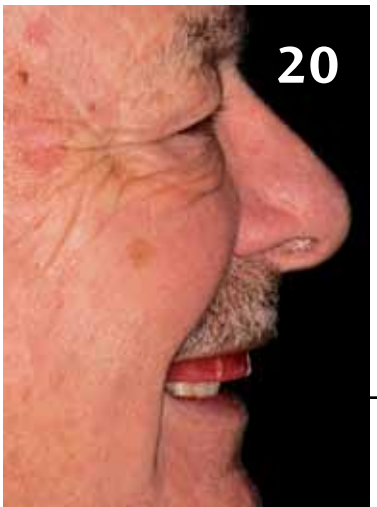
FIGURE 22: Aid of the Kois Analyzer.

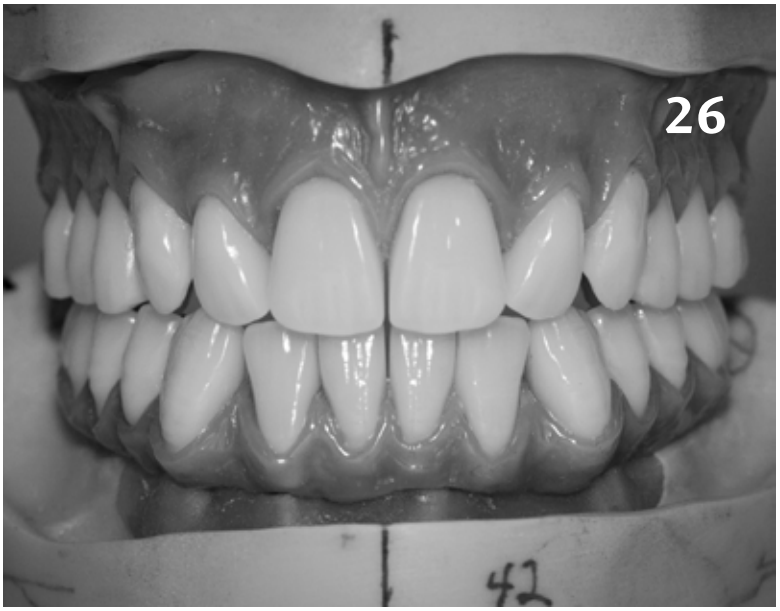












Step Four

The dentist confirms the accuracy of the verification jig and registers centric relations with the screwed retained bite-rim. The laboratory receives the models and recorded bite registration for articulation of the master cast(s).

FIGURE 23: I recommend utilizing a semi adjustable articulator such as a Stratos 200 (Ivoclar Vivadent), Panadent (Panadent), Denar (Whipmix), Artex (Amann Girrbach) or Candulor's CA 3.0 (Ivoclar).

FIGURE 24: Always follow the manufacturer's instructions for correct articulation and articulator use.

FIGURES 25 AND 26: High quality denture teeth are set on the screw retained base plate used for the wax rim. Follow the information provided on the rim and written on the prescription.

Step Five

The laboratory delivers a conventional wax try-in for the patient's next office visit to verify esthetics, phonetics, function, etc. (**FIGURE 27**).

Step Six

Once the wax try-in has been approved, the laboratory technician can proceed with fabrication of the titanium understructure(s).

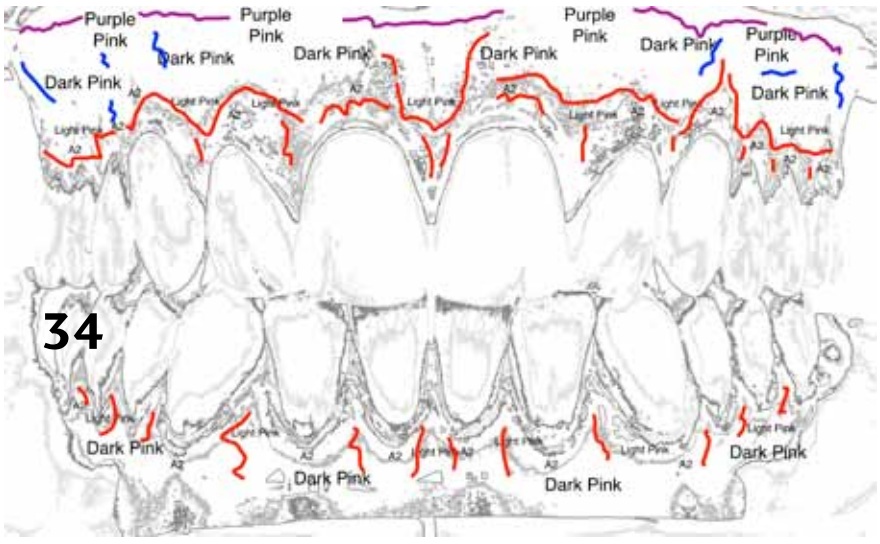
FIGURES 28-30: In this particular case, the patient requires an anterior flange on the upper restoration to maintain lip support. It was determined from the initial treatment plan to fabricate Panthera Dental titanium substructures (an RE. Bourke bar for the upper). This is a two-part bar component with a suprastucture having MK1 attachments for retention, and a hybrid wrap around bar for the lower. The arches are prepared for a final wax try-in set onto the bars, restoring the same arrangement of esthetics, phonetics, function, etc. that were previously approved.

Step Seven

The dentist does a final try-in of the restoration(s) just before processing to completion for final delivery.

FIGURES 31-33: The intimate fit and solid seat of the bars to the integrated implants are verified with radiographs and any minor modifications to the wax and teeth for subtle esthetic, phonetic, function and shade changes are prescribed or made chairside. A method to naturally enhance the esthetics for any high profile case is with custom tissue characterization. Options for detailed color characterization may be discussed at this time among the dental lab technician and dentist. Custom tissue characterization is recommended for patients with high smile lines that require superior tissue esthetics, however, it is not mandatory.

FIGURE 34: Detailed color mapping for future custom tissue characterization. The composite color palette made by Anaxdent (Anaxgum) is a widely preferred material and will be applied when finalizing this illustrated case.



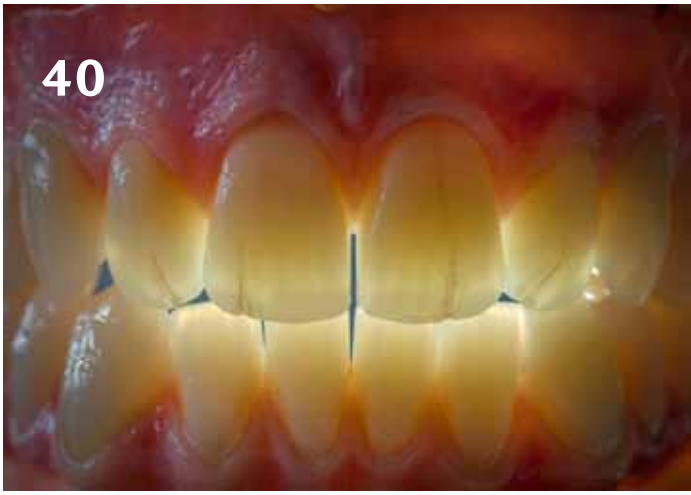
Step Eight

After the final try-in is approved with minimal to no adjustments, the laboratory technician prepares to process the case to completion.

FIGURES 35 AND 36: The case is sealed in wax, invested and processed with some internal colorants to add depth to the final custom tissue characterization, indicated by the color map.

FIGURE 37: Final contour to the acrylic base and minimal equilibration to the denture teeth are selectively adjusted for optimal occlusal function.

FIGURES 38-40: Not only does the tissue become enhanced with composite color modifiers, but the teeth themselves can also be individually enhanced. This is to customize the smile to a more natural and age-relevant look.



Step Nine

The case is completed and shipped to the dentist for final insertion and delivery.

The majority of implant supported cases begin much in the same manner by partnering with an alliance team whose members work together to achieve the ultimate goal with passion, knowledge, skill and—most importantly—dedication to successfully treat the patient. Of course, there are many other approaches and techniques that can restore a patient to a natural looking and functioning smile. The steps listed in this article are simply the fundamentals for a predictable and successful outcome for the entire alliance team—but most of all, the patient.

Photo Credits: Mark Williamson, CDT, DTG and Dr. Matthew Hallas

About the Authors:

Mark D. Williamson, CDT, DTG is a Certified Dental Technician and a member of the Dental Technicians Guild. He is a senior technical manager for Ottawa Dental Laboratory in Ottawa, Ill. He was born and raised in the Chicagoland area, where he has accumulated 37 years of experience in dentures, implants, partials and ceramics. His certification is in full dentures and he is also a Kois Recognized Specialist from the Kois Center. In addition, he was the inaugural winner of the 2017 Panthera Master Cup.

Allie Williamson, AAS, BS, CDT-TE received her formal education in dental technology from Southern Illinois University, Carbondale. Her 35 plus years in dental laboratory technology has brought her many professional experiences and opportunities that led her to become the founder of Essex Dental Laboratory, a former examiner with The National Board of Certification and, currently, a full time trainer in removable prosthodontics for the Ottawa Dental Laboratory, LLC in Ottawa, Ill.

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CONTINUING APPROVED EDUCATION

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By Chris Salierno, DDS

What will happen to DENTAL LABS?

Just as we have seen a consolidation in the dental industry, we have seen similar trends in the number of dental laboratories. Dental Economics has reported on dental lab consolidation from as far back as 2002, and we made it our cover story in 2015. The age of one or two technicians working in their basements is largely over.

Medium to large labs have prospered and, in many cases, have continued to merge or be acquired by even larger enterprises. One could compare this trend to what has been observed in countless other industries, such as mom and pop video rental stores giving way to Blockbuster Video.

However, even Blockbuster Video, Tower Records, and Kmart have faced extinction in recent years. What happened, and will it happen to dental labs?

As I have written before, I believe we are in a challenging economic transitional period called The Third Industrial Revolution. The term, coined by Jeremy Rifkin in his 2011 book by the same name, describes how technological advances in energy, communication, and transportation combine to transform everyday life. Amazon, Netflix, and Uber have successfully challenged their respective industries in part by creating business models around this revolution. I believe

we're already seeing signs that the dental lab industry will face a similar transformation.

Look at the current model: a centralized dental lab receives a physical impression in the mail, manufactures a product, and then mails that product back to the client. We've already seen an evolutionary leap in the form of digital impressions, but the business model is still essentially the same. A true disruption would be if a majority of dentists manufactured their restorations in-office. Sure, that technology has been around a long time, but best estimates are that around 15% of dentists have mills in their offices, and certainly far fewer have 3-D printers. There are various reasons why dentists have yet to adopt in-office manufacturing en masse, including large capital expenditure and training to produce quality lab products. But therein lies the opportunity for dental labs.

I believe it is a reasonable prediction that future dental practices will manufacture more lab products on-site. It may take 10 to 15 years before we reach a majority, but technological advances are pushing dentists in that direction. So, what if dental laboratories created a new business model where they remotely design restorations and coach the dental team on using their in-office mills and printers? Perhaps you've already heard about some labs offering this service on a per-restoration or subscription basis.

In my opinion, there will always be a need for talented technicians to create restorations and devices, especially ones of the highest quality.

"IN MY OPINION, THERE WILL ALWAYS BE A NEED FOR TALENTED TECHNICIANS TO CREATE RESTORATIONS AND DEVICES, ESPECIALLY ONES OF THE HIGHEST QUALITY."

While improvements in technology and materials will allow dentists and their trained team members to produce more of these products themselves, I believe it will be quite a long time before we're able to do so in every case without the aid of a skilled laboratory. While we are in this turbulent transition time, I think dental practices and labs would be wise to reevaluate their business models and revenue streams along the way. No one wants to be the next Blockbuster Video.

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ABOUT THE AUTHOR

Chris Salierno, DDS, is the chief editor of Dental Economics and the editorial director of the Principles of Practice Management e-newsletter. He is also a contributing author for DentistryIQ and Perio-Implant Advisory. He lectures and writes about practice management and clinical dentistry. Additional content is available on his blog for dentists at thecuriousdentist.com. Dr. Salierno maintains a private general practice in Melville, New York. You may contact him by e-mail at csalierno@pennwell.com.

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FDLA Donates to FDA Mission of Mercy

FDLA is excited to announce that it is donating $1,000 to the Florida Dental Association Foundation's Mission of Mercy (FLA-MOM) program.

The FLA-MOM is a large-scale, two-day, professional dental clinic that provides care to any patient at no cost to them, with the goal of serving the under-served and uninsured in Florida—those who would otherwise go without care.

The 2018 Fort Myers FLA-MOM treated 1,906 patients and provided more than $1.75 million in donated care. The next FLA-MOM event will be held March 22-23 in Orlando. With a goal of treating 2,000 patients, FLA-MOM seeks to have a positive impact on Central Florida by relieving pain and infection, restoring dignity and creating smiles.

NADL Advocacy: Core to our Mission – An FDA Update

Along with the evolution of CAD/CAM technology that is now commonplace in dental laboratory workflow, and the anticipated rapid spread of 3D printing, increased compliance may come too.

Dental laboratories have been exempt from registering with the FDA for more than 40 years. Due to the lack of formal guidance directly applicable to dental laboratory use of new technologies, questions have arisen regarding the FDA's stance on when a dental laboratory may use CAD/CAM milling and 3D printing technologies to manufacture the same restorations that FDA has traditionally viewed as within the scope of the exemption, when manufactured by hand.

The NADL leadership is working to ensure that dental labs are not precluded from delivering certain devices and restorations that they have long been providing within the exemption just because the technique has changed from analog to digital.

NADL's goal is to ensure that the CAD/CAM milling and 3D printing services that its members are capable of providing to dental practitioners are recognized by the FDA as consistent with the current regulatory exemption from the agency's registration requirements.

In response to this situation, the NADL Board of Directors is taking action to protect the interests of its members to obtain a closer understanding of FDA's evolving guidance relative to dental lab use of CAD/CAM milling and 3D printing technologies.

NADL has undertaken a three-phase approach to obtain a more clear understanding of FDA's current regulatory approach for dental laboratories.

Phase I – NADL engaged a Washington D.C.-based lobbying team to evaluate and present legal and policy options and to confirm an initial meeting with high-level officials of the FDA.

Phase II – NADL's Washington D.C.-based lobbying team arranged for and attended a recent meeting with appropriate FDA personnel to present how various FDA policy approaches impact dental laboratories and the availability of dental laboratory services to practitioners.

Phase III – NADL will obtain a written statement from FDA providing clearer guidance to dental laboratories regarding the use of CAD/CAM Milling and 3D printing.

Phase I and II have been completed and have yielded some positive initial results. FDA assured NADL that it intends to continue upholding the dental laboratory registration exemption and that while no additional formal guidance is planned, FDA expressed that they are willing to assist specific NADL efforts to provide additional clarity for dental laboratories.

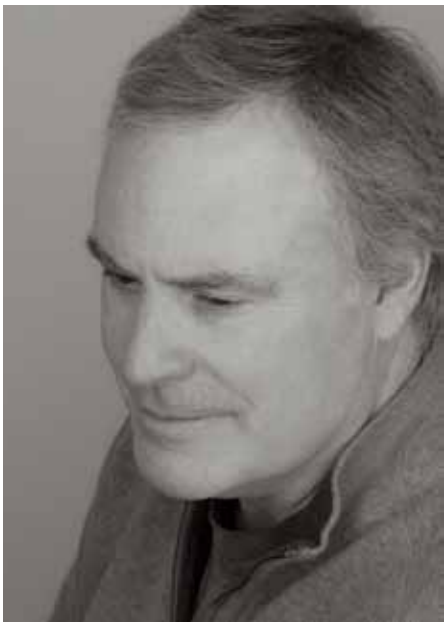
NADL will continue working to ensure dental laboratories maintain their ability to perform their full range of traditional activities and services without falling outside of exempt status. NADL will publish additional clarifying statements and educational articles at the conclusion of phase III which has just commenced.

The Digital Future and the Techncian

Recently, we were lucky enough to chat with Jensen Dental Vice President Don Cornell about his upcoming course focusing on the future of digital and esthetics when it comes to monolithic restorations. As Cornell says, CAD/CAM technology and monolithic restorations have dramatically changed the face of dentistry. His course will explore the future of dental technicians as manufacturers, facilitators, part assemblers and general contractors.

What do you think technicians most often get wrong when trying to combine digital technology and esthetics?

Let's put aside the obvious influence of materials for the moment and focus on everything else. Esthetic outcomes are the result of many factors, such as form and function, surface texture and luster, and the successful execution of patient specific shade and characterization. These criteria have been examined and discussed for years and are no less relevant today with digitally processed restorations than they have been with analog. And future forward labs are using digital technology to improve the way they look at and execute against each of these esthetic parameters. CT scans, ortho CAD, digital smile design, implant planning software and CAD for design, are some of the technologies reshaping the way the restorative team interacts, strategizes and executes. Technology makes access to relevant information on demand possible, independent of time or distance. However, technology is only useful if it connects you to something you can't get any other way, or makes that connection better, cheaper and faster than what you had before. Think of what the Apple iPod did for music. Apple did not invent the MP3 player, there were many such devices already out there. The real innovation was iTunes, and that was the killer application that set the iPod apart from every other music device. I think the biggest mistake a lab can make today is to think of digital technology as simply a manufacturing platform rather than the dynamic information resource that it is.



What are the esthetic challenges associated with monolithic restorations and how can technicians overcome them?

Full contour or minimally reduced restoration types are the most efficient use of digital design and manufacturing, however, past esthetics have been less than ideal. These limitations have been largely due to the esthetic limits of the materials, not the CAD/CAM process itself. Early iterations of zirconia were highly opaque and not esthetic at all. Glidewell's Bruxir for example, was positioned as a fail-proof, white gold, not an esthetic solution. Even today, most laboratories position monolithic similarly with their dentist clients, which is why these restorations are generally offered on the low-end of the price spectrum. But rapid improvements in the esthetic properties of digital materials in combination with new and innovative finishing techniques have made it possible to mimic the vitality and characteristics of natural teeth with monolithic. These improved esthetic outcomes now give laboratories the opportunity to reposition monolithic in the eyes of their clients, which creates the opportunity for increased satisfaction and profitability.

Technology is only useful if it connects you to something you can't get any other way, or makes that connection better, cheaper and faster than what you had before.

What three things will attendees to your course walk away knowing?

1. Better understand the full potential of digital technology beyond a manufacturing platform and why it's such an important component of the future lab.
2. Why monolithic is no longer a product category (It's 85 percent - 90 percent of all restorations made in the U.S.) and what this means going forward.
3. How improved esthetic outcomes are helping laboratories better position monolithic restorations as full price solutions rather than the low-price options they have been.

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