Carilion Pediatric Dental
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Online-Virginia
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Course Overview

Description of business or organization:
Carilion Pediatric Dental is a hospital-based dental clinic that provides both emergent and comprehensive dental care to patients 18 years of age and under. The clinic provides the most advanced in-hospital dental care in the SW Virginia region.

Description of and purpose of the course:
This course's intent is to train dental assistants at Carilion Pediatric Dental to place sealants on pre-selected teeth, with good retention rates and no voids in sealant material.

Brief description of the learners taking the course:
There are thirteen dental assistants working at Carilion Pediatric Dental, with varying degrees of education and experience in dental assisting. Dental assistants do not require a degree, but do require safety training for sterilization and patient-centered procedures, as well as certification in dental radiography and basic life support.

Contact Information for Interviewee:
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Course Prerequisite List

- Fine motor control of hands
    - Tested through employee's grasp of intra-oral mirror and explorer (already a pre-requisite for the position they work in)
    - Typodont test showing employee's ability to remove supra-gingival black "pseudo"-calculus from typodont tooth surfaces, without uncontrolled movements or damage to the typodont.
- Visual acuity
    - Employees are asked about visual impairments upon hire. Any concerns over visual acuity could warrant referral to employee health.
- Previous working experience assisting sealant procedures
    - Documented experience assisting sealant procedure.
- Previous familiarity with the clinical area, including where materials are located.
    - Based on management's assessment.
- Familiarity with dental operatory equipment
    - The job requires at least 2 years of experience in this already.
- Professional attitude
    - Based on manager assessment; a condition of continued employment.
- Patience working with children
    - Management-led performance reviews will reflect this behavior/attitude.
- Ability to read and comprehend dental chart notations
    - History of experience reading and writing dental chart notes in the clinical setting
- Ability to understand and input dental charting
    - History of having aided the dentist in dental charting review and editing
- 10^{th} grade+ reading level
    - Onboarding testing upon hire
- 10^{th} grade+ writing level
    - Reflected in previous chart notations; determined by management.
- Familiarity with Patterson Eaglesoft dental software
    - Positive performance reviews regarding this area
- Ability to use curing light
    - Experience in the dental clinic assisting resin/composite procedures
- Ability to type
    - Typing test to demonstrate at least 30 wpm, or manager recommendation
- Basic English proficiency
    - Pre-requisite in hiring for the assisting position
- Minimal knowledge of chemistry
    - High school diploma or GED
- Understanding of hospital-based Infection Control policies
    - Annual in-service certificate from Carilion
- Respect for and compliance with HIPAA laws
    - Annual in-service certificate from Carilion

- Willingness to improve community health
    - Management reviews pertaining to employee's following of Carilion's standard of care motto
- Background knowledge of the oral cavity, tooth numbers, and tooth surfaces
    - 2+ years of dental assisting upon hire, plus management reviews
- Basic conversational skills
    - Assessed at the interview for hiring into the assisting position
- Problem-solving skills
    - Based on performance reviews by management.

ANALYSIS PLANNING
Worksheet

Company: Carilion Pediatric Dental **Date: 06/03/2021**

Name of Training Analyst: Jessica Gutierrez-Arnold

CHECKLIST ITEM

Why is this instruction being developed?
Dental assistants need to be capable of placing sound sealants on both primary and permanent teeth, to help reduce cavity prevalence in the patient population.

Needs Analysis:

With assistants able to place sealants on their own, dentists and hygienists can better utilize their time to provide more specialized services. Better utilization of skills will result in more services provided, and at a reduced cost. There are currently varying degrees of sealant experience, knowledge, and skills. In order for assistants to place sound sealants, understanding of the process is needed, as well as practice.

Problem Analysis:

The application of dental sealants has been shown to effectively reduce cavity-prevalence by 51% (Hatrick, C. D., Eackle, W. S. & Bird, W. F., 77).

Most of the dental assistants at Carilion Pediatric Dental have not been trained in sealant application. Dentists currently prefer placing the sealants, as they find it easier to place the sealants themselves than it is to teach assistants how to place sealants. There may be undisclosed distrust in assistant abilities on behalf of the dentists. Fortunately, scientific research and the American Dental Association support even poor quality sealants in the prevention of decay as opposed to no sealants. Return visits to be treated by the dentist increase cost to the patient and to the practice.

Training needs to include classroom or on-line instruction for the dental assistants to learn the process, materials and potential complications of sealant placement, as well as clinic-based instruction to allow them the opportunity to observe and replicate proper sealant procedures.

Training may be needed to help the dentists see background study results of assistant-placed sealants in the reduction of cavities and associated costs. This can lead to attitude and workflow changes. Training for dentists will not be covered in this training plan, but may need to be provided separately.

Goals Analysis:

- Reduce costs to the company and improve patient satisfaction and health outcomes.
- Place assistants as the main providers of dental sealants, thus allowing dentists and hygienists more time for other procedures.
- Teach assistants proper techniques in sealant placement to improve sealant retention, good occlusion, and clean margins.
- Improve dentist confidence in assistant's abilities to place sealants.

Population Analysis:

Dental assistants

- Education levels: Between GED's and certified dental assistant certificates. All of the dental assistants are CPR and radiograph safety-trained.
- Work experiences: A range of non-dental work experience (ex: prison guard for one employee). Dental assisting experience of at least two years is required for all assistants before hiring, as hospital-based dentistry carries unique challenges and requires additional training. Range of experience in the hospital-based setting is between two years and thirty years. For some assistants, this course may be a refresher course. For most, it is new information and training.
- Cultural differences (from one another or from the program's developer or its prospective implementers): All assistants currently in employment at this clinic are Roanoke-born women with multiple racial backgrounds. There is some recognized drama within the team, but it is mostly competitive-based. This can be seen as potentially helpful in their motivation to learn.
- Special physical needs: There are no physical restraints of significance in any of the team's workforce that would affect training.
- Language skills: All participants use English as their first language. Some assistants demonstrate medium levels of communication skills and writing accuracy. The only effects expected from this are the assistant's ability to document services rendered with complete accuracy.
- Interests: The entire team is made up of motivated individuals that are either working hard for an income, or are more motivated by the patient population they hope to help. All members of the team seem eager to advance their skills and improve patient outcomes. The group is widely varied in their family lives and non-work activities. A few are very physically active, some have young families, and some have grandchildren and are approaching retirement.
- Other: As retirement approaches for some, training needs to be created in a replicable manner, for when new hires come into the practice.

Resource Analysis:

A large breakroom with a computer, dental software, internet connection, and projector with speakers is available and frequently used for training purposes in this clinic. Management regularly provides lunch during training sessions, which typically includes pizza, drinks, ice, fruit, and dessert. Training resources and data from the National Network for Oral Health Access is available to the trainer (the developer of the training owns these materials). For in-clinic training, multiple dental operatories are available for use in practice and hands-on training sessions. Within these operatories, there are available operator chairs, patient chairs, overhead lights, safety glasses for the trainee and UV safety glasses for the patient, extracted teeth, sealant material, etchant, pumice, air and water with adequate pressure, as well as suction, air/water syringes, suction tips, curing light sleeves, gauze, biteblocks, curing lights, light shields, dental charts within Patterson Eaglesoft software, computers, cleaning supplies, a sterilization room and required sterilization pouches and indicators, prophy angles, prophy handpieces, plastic barrier tape, plastic barriers, paper barriers, sharps containers, treatment trays, patient napkins, patient napkin clips, dry angles, gloves, surgical masks, dental explorer (#23 Shepherd's Hook explorer), intra-oral double-sided mirrors, articulating paper, articulating paper forceps, posterior unilaterally bladed scaler with cleoid toe, trainer (this could be various individuals both within the organization or external to the organization).

Constraints Analysis:

The most obvious constraint to training will be the coordination of assistant schedules, with potential resultant loss in productivity during training. Time for training will need to consider when there are no prior patient obligations and loss of clinic time is minimal. While hospital-based dental operatories are by nature larger than most dental operatories, it is still expected that one operatory will not fit all trainees at one time. Therefore, it is expected that trainees will have to be trained by either more than one trainer, or in small groups, to best provide feedback and allow for careful observation of procedures during both examples of sealant applications, and in the practice by the assistants.

Job Analysis:

*See attached "Job Analysis" worksheet

Task Analysis:

*See attached "Task Analysis" worksheet

What topics do you think this course or workshop will cover?
This course will need to cover reasoning for sealants and requirements on who can place sealants. It will also need to cover product selection, tooth surface preparation for and placement of sealants, as well as self-evaluation skills on dental sealant placement and trouble-shooting skills.

Your Name:

Jessica Gutierrez-Arnold

Reference:

Hatrick, C. D., Eakle, W. S., & Bird, W. F. (2011). Prevention and bleaching materials. In K. R. Hebberd & J. Dumas (Eds.), *Dental materials: Clinical applications for dental assistants and dental hygienists* (2nd ed., pp. 73-91). Saunders; Elsevier.

JOB ANALYSIS

JOB TITLE**:** Dental Assistant Date**:** June 13, 2021

COURSE**:** Sealant Provision by Assistants

GENERAL DESCRIPTION: Dental assisting involves assisting in dentist-provided procedures, the accomplishment of dental assistant-led procedures, making patients feel comfortable, and ensuring overall workflow of office procedures and processes.
In order for dental assistants to provide the placement of dental sealants, they must provide preparation of the patient and the tooth for dental sealant placement, followed by placement of the sealant with good retention and occlusion. The following tasks require knowledge in instrument selection and use, dental materials selection, use, curing time, chemical reactions, dental anatomy, dental equipment use, patient needs and provision of comfortable care, as well as knowing where to locate needed items within the dental clinic. In-class teaching would cover these topics, but will be assessed during application of sealants in the clinical setting, as most sealant complications cannot be replicated on paper to an adequate degree for training efficacy.

DUTIES:

For the provision of general dental assisting, the following tasks are involved:

- Preparing operatory
- Evaluating stock of dental supplies
- Sterilization of dental instruments
- Aiding dentists through restorative and surgical procedures
- Obtaining of needed equipment for dental procedures
- Prophylaxis of teeth for ages 2-11, depending on tartar levels
- Disinfection of dental operatories
- Bringing patients into operatory
- Dismissing patients from the operatory
- Explaining dental procedures to patients and guardians
- Topical application of fluoride treatments
- Obtaining of dental impressions for the fabrication of dental prostheses
- Providing oral hygiene instructions to patients and guardians
- Ensuring patient safety and protection of health information
- Communicating concerns to dentists, patients, and guardians
- Preparation of goody bags, and distribution of goody bags
- Obtaining of intra-oral radiographs according to need and/or professional standards
- Documentation of dental procedures provided
- Submission of dental codes according to services provided for insurance and payment purposes
- Placing of sealants on non-cavitated teeth services, upon dentist recommendation

APPROVED BY SUPERVISOR:

TASK ANALYSIS WORKSHEET

JOB TITLE: Dental Assistant Date: _____

COURSE: Sealant Provision by Dental Assistants

TASK NO.	TASK	FREQ	CRIT	DIFF	VALIDATED
1	Prepare the treatment room with needed supplies				
2	Review patient chart				
3	Bring patient into operatory				
4	Review patient medical and dental records				
5	Confirm planned procedure with patient and guardian				
6	Prepare patient and operator with safety equipment				
7	Polish indicated tooth surfaces				
8	Etch the polished tooth surfaces				
9	Seal etched tooth surfaces				
10	Ensure proper retention of sealants				
11	Ensure proper occlusion with opposing teeth				
12	Chart procedure in Eaglesoft dental chart				
13	Provide description in patient chart notes on procedure details				
14	“Walk out” the procedure for billing				
15	Release the patient from the clinic				
16	Clean the operatory				
17	Sterilize instruments				

APPROVED BY SUPERVISOR:

FROM THE TASK ANALYSIS

Task List, Classroom:

1. Prepare the treatment room with needed supplies.
2. Review patient chart (lesson not included in this training plan)

Task List, On the Job

3. Prepare patient and operator with safety equipment.
4. Polish indicated tooth surfaces.
5. Etch the polished tooth surfaces.
6. Seal etched tooth surfaces.
7. Ensure proper retention of sealants.
8. Ensure proper occlusion with opposing teeth.

TASK DETAILING WORKSHEET

JOB TITLE: Dental Assistant **Date:** _____

COURSE: Sealant Provision by Assistants

TASK: Prepare patient and operator with safety equipment

STEP NO.	DETAIL/STEP	CRIT	DIFF
1	Hand UV glasses to patient.		
2	Ensure UV glasses are properly fitting patient.		
3	Put on operator glasses.		
4	Drape patient napkin across patient's chest.		
5	Secure patient napkin with bib clip.		
6	Don hair cap.		
7	If not already in place, don surgical and/or N95 mask.		
8	Don fluid-resistant gown.		
9	Don face shield.		
10	Wash hands with either soap and water, or hand sanitizer.		
11	Ensure that hands are soil-free and dry.		
12	Don properly fitting exam gloves.		

APPROVED BY SUPERVISOR:

Source:

Daniel, S. J., Harfst, S. A., & Wilder, R. S. (2008). Exposure control and prevention of disease transmission. In J. Dolan & J. Nebel (Eds.), *Mosby's dental hygiene: Concepts, cases, and competencies* (2nd ed., pp.126-146). Mosby; Elsevier.

TASK DETAILING WORKSHEET

JOB TITLE: Dental Assistant **Date:** _____

COURSE: Sealant Provision by Assistants

TASK: Polish indicated tooth surfaces

STEP NO.	DETAIL/STEP	CRIT	DIFF
1	Collect dappen dish with pumice slurry.		
2	Grab the prophy handpiece with attached prophy angle.		
3	Collect enough pumice slurry into prophy angle rubber cup to fill the cup.		
4	Place rubber cup against fits and fissures to be sealed.		
5	Step down on rheostat to initiate prophy handpiece.		
6	Polish the tooth surfaces to be sealed.		
7	Release foot pressure from rheostat.		
8	Return handpiece to its holder.		
9	Pick up the air/water syringe.		
10	Spray tooth to rinse thoroughly of pumice.		
11	Return air/water syringe to its holder.		
12	Pick up slow-speed suction.		
13	Suction water from the patient's mouth (not needed in simulation).		
14	Return suction to its holder.		

APPROVED BY SUPERVISOR:

Source:

Wilkins, E. M. (2017). Sealants. In J. Joyce & A. Millholen (Eds.). *Clinical practice of the dental hygienist* (12th ed., p. 623). Wolters Kluwer.

TASK DETAILING WORKSHEET

JOB TITLE: Dental Assistant **Date:** _____

COURSE: Sealant Provision by Assistants

TASK: Etch the polished tooth surfaces

STEP NO.	DETAIL/STEP	CRIT	DIFF
1	Ensure that no pumice remains on tooth surface (visually).		
2	Dry surface to be etched with air/water syringe.		
3	Place etchant tip on surface to be etched.		
4	Squeeze the etchant pen applicator to allow the blue etchant liquid to flow onto the tooth surface.		
5	Fill pits and fissures of the selected tooth surface with as little etchant material as possible to fill the pits and fissures.		
6	Allow etchant to remain in the pits and grooves for 20 seconds (for permanent tooth) or 60-70 seconds (for primary tooth).		
7	Put etchant pen back onto the treatment tray.		
8	Grab air/water syringe.		
9	Rinse tooth surfaces thoroughly for 20 seconds to ensure complete removal of etchant.		
10	Use air/water syringe to dry tooth surface thoroughly.		
11	Place air/water syringe back in its holder.		
12	Ensure that etched tooth surface is chalky white when dry (visually).		
13	Grab low-powered suction.		
14	Suction water and saliva from the patient's mouth (not needed during simulation).		

APPROVED BY SUPERVISOR:

Source:

Wilkins, E. M. (2017). Sealants. In J. Joyce & A. Millholen (Eds.). *Clinical practice of the dental hygienist* (12th ed., pp. 624-625). Wolters Kluwer.

TASK DETAILING WORKSHEET

JOB TITLE: Dental Assistant **Date:** _____

COURSE: Sealant Provision by Assistants

TASK: Seal etched surfaces

STEP NO.	DETAIL/STEP	CRIT	DIFF
1	Place dry angle in the vestibule adjacent to the selected tooth to be sealed.		
2	Assure no etchant material remains on the tooth surface (visually).		
3	If patient has difficulty keeping his/her mouth open, place age-appropriate bite block between occlusal surfaces on the opposite side of the mouth from the teeth to be sealed.		
4	Using slow-speed suction, suction the patient's mouth to remove as much saliva as possible.		
5	Using air/water syringe, dry the indicated tooth surface completely (must be bone dry).		
6	Making sure the tooth surface gets no saliva on it, place sealant pen tip on the surface to be sealed.		
7	Squeeze the pen applicator to allow the opaque liquid sealant to flow onto the tooth surface.		
8	Fill pits and fissures of the selected tooth surface with as little sealant material as possible to fill those pits and fissures.		
9	Check the sealant liquid for air bubbles.		
10	Pop any air bubbles with the sealant pen tip or with the #23 Shepherd's Hook explorer.		
11	While maintaining dryness on the tooth surface, grab the curing light with attached light shield in your dominant hand.		
12	Aim the curing light at the surface being sealed.		
13	Hold the curing light button for 20 seconds, while continuing to aim the light at the indicated tooth surface.		
14	Put the curing light and the sealant material down.		

APPROVED BY SUPERVISOR:

Source:

Hatrick, C. D., Eakle, W. S., & Bird, W. F. (2011). Prevention and bleaching materials. In K. R. Hebberd & J. Dumas (Eds.), *Dental materials: Clinical applications for dental assistants and dental hygienists* (2nd ed., pp. 73-91). Saunders; Elsevier.

TASK DETAILING WORKSHEET

JOB TITLE: Dental Assistant **Date:** _____

COURSE: Sealant Provision by Assistants

TASK: Ensure proper retention of sealants

STEP NO.	DETAIL/STEP	CRIT	DIFF
1	Grab the #23 shepherd's hook explorer.		
2	Gently attempt to wedge the tip of the explorer under the perimeter edges of the hardened dental sealant.		
3	If the explorer does not fit under any sealant material, you are done with this task.		
4	If the explorer does fit under sealant material, dislodge the loose sealant material.		
5	Repeat the "seal etched surfaces" process.		
6	Repeat step #'s 1-5, until the explorer does not fit under any sealant material.		

APPROVED BY SUPERVISOR:

Source:

Hatrick, C. D., Eakle, W. S., & Bird, W. F. (2011). Prevention and bleaching materials. In K. R. Hebberd & J. Dumas (Eds.), *Dental materials: Clinical applications for dental assistants and dental hygienists* (2nd ed., pp. 73-91). Saunders; Elsevier.

TASK DETAILING WORKSHEET

JOB TITLE: Dental Assistant **Date:** _____

COURSE: Sealant Provision by Assistants

TASK: Ensure proper occlusion with opposing teeth (In training, this will be simulated using the extracted tooth and a mandibular typodont).

STEP NO.	DETAIL/STEP	CRIT	DIFF
1	Grab 1 piece of articulating paper with articulating paper forceps.		
2	Place articulating paper between the sealed tooth and the tooth it occludes with.		
3	Have patient bite and grind teeth on the articulating paper. (In simulation, instructor imitates occlusion with typodont)		
4	Move the articulating paper and forceps back to the treatment tray.		
5	Visually determine if there are any blue spots on the sealant material and the occluding tooth.		
6	If blue spots appear, use the tip of your posterior scaler to shave the top of the sealant surface slightly.		
7	Repeat step #'s 4-9 until no blue spots appear on the sealant or occluding tooth during step #5.		
8	Move the articulating paper and forceps back to the treatment tray.		
9			
10			
11			
12			

Source:

Hatrick, C. D., Eakle, W. S., & Bird, W. F. (2011). Prevention and bleaching materials. In K. R. Hebberd & J. Dumas (Eds.), *Dental materials: Clinical applications for dental assistants and dental hygienists* (2nd ed., pp. 73-91). Saunders; Elsevier.

INSTRUCTIONAL PLANNING WORKSHEET

(Classroom Lesson)

Job Title: Dental Assistant

Course: Sealant Provision by Assistants **Date:** _____

Training Objectives	Support Materials and Resources
Task: Prepare the treatment room with needed supplies	Methods of Instruction (and sequencing): EAS sequence E: Go through powerpoint information A: “Prepare the Treatment Room”quiz S: Overview of lesson
Condition: Given a prophy operatory and access to all dental materials, instruments, and equipment	Equipment and Other Resources: Computer Projector Sealant Preparation Materials List Internet connection Speakers “Sealant Set-Up” powerpoint “Prepare the Treatment Room” quiz copies (13) Quiz answer key 14+ chairs Table space (U-shape) for 13 learners, plus trainer
Standard: Within 10 minutes, ensuring that no objects from the “Sealant Preparation Materials List” are excluded.	Evaluation: In clinic set-up of an operatory (one student at a time), according to the Performance Objective.

Comments: The evaluation portion will involve use of clinical operatory space. Permission for use of 3 clinical operatories will be required prior to implementing this classroom training. Allow time for transfer of participants from the classroom to the clinic (about 20 minutes).

LESSON PLANS

(Classroom Instruction)

Lesson 1—Title

Objective: Given a prophy operatory and access to all dental materials, instruments, and equipment, prepare the treatment room with needed supplies within 10 minutes, ensuring that no objects from the "Sealant Preparation Materials List" are excluded.

CONTENT	EXPLANATION/DELIVERY
Intro: State the performance objective	
Check for understanding	What is a dental sealant? What is the purpose of a dental sealant? What factors are most important in sealant placement to ensure that sealants do their job?
Explain WHY?	Dental caries is the number one most prevalent, preventable disease found in children in the United States. Dental sealants fill in deep pits and fissures, where caries like to grow. Placing sealants in these pits and fissures can reduce cavity rates by 86%. Setting up the treatment room with needed supplies ahead of patient arrival can reduce waste, procedure time, and frustration. As you are going through the entire sealant training, you will utilize this set-up lesson to base your sealant procedures off of. Learning sealant placement will give you a new, or improved skill. It will also free up dentist and/or hygienist chair time, therefore making the clinic run more efficiently. Going through this training ensures that your sealant skills can be utilized.
Check for prior knowledge	How many of you have assisted with placing sealants before? How many of you have set up the operatory for dental sealants before? Have you ever forgotten an important piece of equipment? What happened as a result of

	that? How many of you have placed sealants on your own? What challenges did you face? Whose job is it to place sealants? Why?
Content: **Intro**: Focus of training is on the set-up of the dental operatory for dental sealants, along with the scientific reasoning for procedures and materials selection. **Why Seal**: What does it do? **Why are they being involved?**	**Explain** While you will be learning step-by-step the sealant process in the clinic, this in-class training today will address many topics related to the materials you need for placing sealants. It will address some of the science behind material selection. It will also focus on safety matters regarding sealant placement. Questions are encouraged throughout the training, but keep in mind that you will be practicing the actual process of sealant application in the clinic. Many methods and processed will become clearer then. You are encouraged to take notes during this lesson. Start Powerpoint “Sealant Set-Up.” Hand out “Sealant Preparation Materials List” (attached) copies PP slide #1 Today, we will be going through the set-up of your operatories for sealant placement. We will highlight what is needed, what is helpful, and why. PP slide #2 So, why do we seal? What was the percentage we can reduce caries prevalence by, just by sealing? Yes, 86%! PP slide #3 Not only do we prevent kids being in pain, but we can also reduce time out of school for the kids to have cavities filled, time parents or guardians have to take off of work, travel expenses for the families, and we can improve the child’s confidence!

	Caries reduction can lead to better opportunities for the child. As dental assistants are delegated the task of dental sealant placement, they can grow their own skills, while dentists and hygienists can focus on tasks only delegable to them. This improves access to care for patients seeking care in the clinic, as procedure times are improved, the entire dental team is utilized optimally, and operatories are better utilized.
Starting Point: The expectation is that they start off with a clean operatory that is properly stocked, with all equipment properly functioning.	PP slide #4 You all are well aware of the dental operatories here. What equipment already in place in the operatory will be used during sealant placement? (potential answers: operatory chair, patient chair, overhead light, computer, air/water syringe, suction, sharp's container, bib clip, patient tray) Hand out the "Sealant Preparation Materials List" copies (one to each learner). As you can see on this list, there are items which can be expected to already be in place within the operatory. Careful stocking is always important in the dental clinic. With sealants, it can cause a difference in efficiency, and restarting a step in sealant placement. You will want to ensure that the room is clean and sanitized. You may use Sani-Wipes, or other hospital-grade cleaners on opaque plastic surfaces, and alcohol wipes on clear plastic or glass surfaces, as you normally would.
Make Sure They Are Safe: Some assistants can be practicing under false or diminished safety values and knowledge. Be sure that they know the safety equipment needed, and why following the recommendations matters. In pandemic	PP slide #5 In addition to your usual surface paper and plastic tape barriers, be sure to wear treatment gloves whenever touching any objects that will be going into the patient's mouth. As the sealant process requires air

times, this aspect of training is especially important!	and water droplet production, aerosol contamination must be considered. This may require the use of a surgical gown, N95 mask, surgical cap, room air purifier, and a face shield. With COVID precautions, these are a must. The orange UV glasses will protect the patient's eyes from the UV curing light. The operator may use these, as well, but a curing light shield can be used for this purpose.
Basics: Start off with the materials they already set their rooms up with every day.	PP slide #6 Starting with the familiar…you will need your typical procedure set-up, similar to that of a prophy appointment. This includes your air/water syringe (for drying the tooth surface, and rinsing it), your slow-speed suction (for maintaining the dry field)… Who can tell us why the high-speed suction isn't in the list of recommended equipment? (Answer: This training is for single-operator sealant placement. Therefore, the use of high-speed suction would be very difficult for this procedure. Isolates and other dry shields can come in handy, when available.) The patient bib will keep water and sealant materials off of the patient's clothing. While a one-sided mirror will work, a double-sided mirror will improve the operator's ability to see intra-oral surfaces while using their other hand for sealant placement. Gauze, dry angles, and cotton rolls can all be used to absorb saliva and keep the tongue and cheeks from touching the tooth surface to be sealed. Your prophy handpiece and rubber cup prophy angle will be used to clean the surface of the tooth prior to etching and sealing the surface. This will remove plaque and contaminants that could otherwise lead to microbial leakage and poor sealant bonding. The shepherd's hook explorer can help

	ledges when sealants do not adhere properly to the tooth surface.
Sealant Materials: Most of these materials, they will still be familiar with, but may not have in-depth knowledge of why they are used, when, and how.	PP slide #7 Now for materials you handle often while assisting procedures, but may not be as familiar with utilizing on your own. There are different options of sealant material. A material that forgives some tooth surface moisture may be helpful in two-handed dentistry. An example is Embrace wetbond sealant by Pulpdent. Make sure both your sealant and etchant pens have enough material to get you through the number of sealants you are going to be placing. Otherwise, you will have to grab more during the procedure, likely causing you to repeat isolation and sealant placement. You can choose which tips you use for your sealant and your etchant, You'll find that you'll like some more than others. Having microbrushes on hand is helpful for smoothing sealant material, especially. In your office here at Carilion, you have the option of pumice powder, or pumice cups. The cups are already pre-mixed, but expire rather quickly. Pumice powder will be mixed with water to create a slurry. You will use a dappen dish to hold the slurry. As the size of your patient ranges, so will your selection of a proper-fitting biteblock. You will find that these are not always needed, but some patients are not able to hold their mouths open for the duration of the procedure. The biteblock can aid you in focusing on your job, and not on the patient's. If your operatory is already equipped with a curing light, then great! If not, it is important to determine ahead of time which operatory can spare you a light while you place sealants. Since part of the light goes inside of the mouth, and your treatment gloves will be contaminated while holding the light, a plastic sleeve

	needs to be put on the light. If it is tempting to leave this barrier out, look at all of the crevices in the light. Your Sani-wipes will NOT get all of the bacteria out of these crevices. Make sure to grab an orange light shield to protect your eyes. Dry angles, articulating paper, and paper forceps are not necessarily going to stay stocked in your operatories. Make sure you have them on hand for sealant procedures. Dry angles can greatly reduce salivary contamination of tooth surfaces, and you will need articulating paper to ensure that your sealants are not too large. Forceps are not required, but can make handling the articulating paper easier, and save your fingers from getting bit!
Pumice: Why use it? What is it? How do they use it properly?	PP slide #8 Pumice doesn't have much of a flavor. It tastes a bit like sand. Patients won't love it, but it doesn't taste that bad. They typically think it's cool if you tell them you're putting volcanic rock on their teeth. It does come from the silica formations from volcanic rock. It is a fine abrasive, making it great for cleansing the tooth surfaces, to prepare them for sealants. While it is fine, it is a 6 on Moh's hardness scale, meaning it is softer than steel, but harder than what most knives are made out of. As I mentioned before, when using the loose powder pumice, you will need to combine it with water to create a wet sand like mixture. If it is too watery, you won't be able to pick it up with your prophy angle. If it is too dry, it can damage the enamel and cause dentinal hypersensitivity. Think perfect sand for building a sand castle!
Moh's Hardness Scale: Interesting reference for minerals and dental materials	PP slide #9 Here is a diagram of Moh's hardness scale. You see fluorite at a 4 hardness level. As you know, fluoride comes from Fluorine, from Fluorite rock, due to its

	bacteriocidal factors, as well as it's effect on bacterial fermentation effects on dental plaque. While it was once advised that we not place sealants after fluoride treatments, due to suspected chemical bonding issues, studies have shown that this is not the case, and sealants can be applied post-fluoride applications. It is optimal to perform fluoride treatments after sealant placement, however, when being done in the same appointment. The point in cleansing the teeth with pumice is to remove any surface contaminants, so that sealants are not placed on top of plaque and heavy bacterial colonies.
Etching: What is happening, why is it happening, how does it help? How is it done best?	PP slide #10 Etching the tooth surface creates micro-pores in the enamel surface, which will give the sealant material microscopic grooves to latch onto, thus improving the retention of sealants. Hydroxyapatite is the hardest substance in the body, and is the main thing differentiating teeth from bone. The 20% of enamel that is made up of carbonate particles is what etchant takes advantage of. It is more soluble in acid than the rest of the enamel. Etchant is typically 37% phosphoric acid, which makes the pores enlarge, so that sealant resin can adhere to it. Many sealant materials have silica added to them, which makes them thicker. This can be helpful, so that the material is easier to handle. However, too much silica can mean that the material will be too thick to fill into thin grooves. Because baby teeth have a different crystalline structure, etching them usually takes longer. 60 seconds is the minimum recommended etching time for primary teeth. For adult teeth, 20 seconds is the typical recommendation, but harder enamel may require longer etching. In either case, watch for the etched surface to appear chalky white. If this isn't

	apparent while etching, check the surface with air after etching. Under-etched surfaces will still appear shiny and white. Over-etched surfaces can become sensitive. Because silica is in so many etchants, it is important to rinse the tooth very thoroughly before proceeding with sealing the tooth, since the thickness to the silica can prevent the sealant liquid to reach deep into grooves and fissures. It is important to only etch the tooth surfaces that will be getting sealed. Etch can damage surfaces if left on too long, especially on skin and mucous membranes.
Sealant: What is it? How is it used? How does it work?	PP slide #11 Sealant material is a resin. It is typically unfilled or lightly filled. Fillers make sealants hold up better against occlusal forces. Fillers can be radiopaque, meaning that they will sometimes show up in radiographs. This makes differentiating them from composite restorations difficult. While fluoride treatments are very effective in preventing smooth-surface decay, sealants are more effective in reducing caries rates in pits and fissures. The application of sealants has shown an 88% reduction in childhood caries rates, with 44% of that reduction applying to molars alone (where most pit and fissure caries are found). This is why we typically focus placing sealants on molars. One reason for this training is to meet the need to reduce childhood caries rates in low-income populations. Since Carilion sees a high level of patients from this income bracket, we would like to seal more than the average 30% of children in this group who normally get sealants. The more your team finds ways to seal teeth in a timely and efficient manner, the less caries we can expect to see in the patient population.

	Sealant materials can be chemically activated, or light-activated. We will be covering light-activated dental resins only, since this is what you will use in practice. The blue UV light from your curing lights is damaging to the eyes. For this reason, the patient, the operator, and anyone accompanying the patient should have eye protection. Some opt to look away from the light as it is being utilized. The safer bet is to use orange protective UV-resistant glasses. With a halogen bulb, 20 seconds is needed for light curing most sealants. With UV light or laser light, the time is less. It does depend on depth of the sealant. A soft sealant can be recurred with additional timed lighting (typically in 10 second increments).
Debunk Old Myths: It's okay to feign a little horror here. Many learners will still be invested in this theory, which has been debunked by more recent science.	PP slide #12 OH NO! Have you heard that accidentally sealing over decay can lead to massive cavities growing under sealants?! This is what we were told to watch out for during decades of sealant placement.
New Science: Sealant placement is preferable to a "watch and wait approach" for incipient decay.	PP slide #13 However… This stance is no longer supported. Both the American Dental Association and the National Network for Oral Health Access support the stance of sealing incipient decay in pits and grooves. Their stance also is that unintended sealing over decay in studies has led to diminished expansion of carious lesions. The sealant, when properly placed, cuts off nutrition to the caries-causing bacteria, leading to a 2,000-fold decrease in pathogen populations. This results in an 89% reduction in caries activity! In fact, 24-hour exposure of etched enamel begins remineralization by salivary deposition of calcium phosphate salts. This means that the old fear of a sealant coming off and the

	etched tooth surface being more susceptible to cavities than the tooth was before sealant placement is debunked. Plus, residual resin tags in the pits and fissures also cause bacterial acid byproducts to not be able to adhere as well in crevices, since the resin tags are already occupying the space! They stand by the notion that known, active caries are better treated with restorative materials, due to the removal of decayed tooth structure. The most important factor in sealants preventing caries, and not causing decay growth underneath the sealant, is that the sealant be properly adhered to the tooth. We will be learning this in our following training session.
Bonding: When it's necessary, why it is, and how it works.	PP slide #14 Bonding is a process that enhances the retention of sealant material. The extra step is optional, and some sealant materials do not call for separate bonding agents, as they have their own. Bond is a resin that flows very well into pores. This makes them adhere very well to the pores created during etching. Since bond is a resin, and sealant is a resin, once the bond is placed, the sealant will chemically bond directly to the bond. This can enhance the "grab" of the sealant to the tooth surface. This goes back to some of the sealant recommendations for wetbond sealant. There are others. You can ask your dental representation about options.
Tips: Recommendations for tips for sealant and etchant pens.	PP slide #15 You have multiple tip options in your clinic for etchant and sealant pens. The choice is up to you. The wider the tip, the more freely the liquid material will flow, and vice versa. You don't want to have to squeeze the pen trigger too hard, but you don't want too much material coming out at a

	time, either. Since sealant material should be worked into grooves, to eliminate air bubbles and reduce the amount of sealant used, I recommend a “fuzzy tipped” applicator tip. This eliminates the need to go between handling the sealant pen and a separate microbrush. The tip acts as the tip and the microbrush.
Articulating Paper: Why we check occlusal, what is needed for checking it, and how to check it. How to fix the sealant if occlusion isn’t optimal.	PP slide #16 Articulating paper will be needed later when you check the occlusion of the sealant against the teeth they occlude with. Having a holder forcep can make handling the paper easier. Plus, your fingers won’t be in the way when you ask the patient to bite down and grind on the paper. As mentioned before, making sure the sealant isn’t too big can prevent break-down of the sealant, and pain to the patient. A dentist can easily adjust a sealant using a rotary handpiece and a burr. Since assistants do not have the legal ability to utilize these handpieces, shaving down the sealant can be done fairly effectively with a dental scaler. A posterior, single-edged scaler is recommended, since it can be easily adapted to angulations along tooth surfaces, and you reduce risk of cutting soft tissues with the opposite side from the blade. A recommended instrument would be the Gracey 13/14, like the ones seen in the picture here.
Exploration: Which instrument is best? How to explore around the sealant. What to do when the sealant isn’t quite right.	PP slide #17 Now we are back to that most important aspect. I mentioned earlier that a #23 “Shepherd’s Hook” explorer should be on your treatment tray set-up. That is because you can gently wedge the explorer tip under any loose sealants. By running the tip along the borders of the sealant, you can detect any ledges that

	may be present. A completely avulsed sealant will look like a snowflake. It is important to replace any and all portions of the sealant that come out. Look for remaining pits and grooves after sealant placement. You do not want to seal into the contact areas! If your sealant flows into the inter-proximal spaces, the cured sealant may closed off the space between the teeth. This will keep the patient from being able to floss. If this occurs, seek the dentist for assistance in removing the extra sealant, unless you are able to remove it easily with the scaler. Bulbous (AKA “fat”) sealant needs to be shaved down with the blade side of the scaler, until articulating paper marks no longer show on the sealant or the occluding surface. The goal of sealants is for them to flow into the grooves, like water in a canyon. Overlarge sealants will look more like a solid surface, and can easily be confused for composite restorations. Composites, however, are carefully manipulated to fit occlusion. You cannot do this with overlarge sealants. The picture in the upper right hand corner shows an area of the tooth groove that is lacking sealant. It will easily gather plaque and lead to decay. Add sealant to this area and recure. If upon drying the tooth, this spot does not appear chalky white, perform etching again to the area.
Isolation: How’s it done best? What tools do they have to help? Why does it matter?	PP slide #18 Most loose or imperfect sealants result from allowing the tooth surface to get wet during sealant application. Using cotton rolls beside the tongue and cheeks can helps keep the tooth dry, as can placing dry angles against the parotid gland in the cheek area, so as to absorb saliva that wants to pool up in the area you are trying to keep dry. Having the patient face in the direction opposite of the side of the mouth

	the tooth is on can also redirect saliva. Some patients cannot keep their mouth open for the entirety of a sealant procedure. If this is the case, you can opt to use a bite block. You can choose the size of block based on the size of your patient. Additionally, gauze can be used to dry off surfaces, as needed. But, DO NOT forget to use air! The tooth surface should be bone dry prior to applying sealant.
Light Curing: Which light is used? Risks?	PP slide #19 The sealant material will cure readily with your blue light curing lights. Some sealant materials will start curing under normal operatory light. This reduces your working time. This is why having everything ready and easily accessible will improve the odds of your sealant coming out perfect the first time around! Follow the sealant material packaging for curing times, as they can vary. And again, protect any eyes in the room. Over time, the light can and will damage your eyesight. In the picture here, there is a hard plastic light shield. It can sometimes get in the way, but it reduces the risk of you forgetting to grab a disposable shield. As long as you look at the light through the shield, you do not have to wear UV-protectant glasses to protect your eyesight. This makes visibility optimal, without having to switch glasses during the procedure. Think infection control!
Wrap-Up: Questions?	PP slide #20 Now that we have gone through the armamentarium of your tray and room set-up, does any have any questions? **Activity** Pass out ‘”Prepare the Treatment Room” quiz (attached) copies. Instruct trainees to write their names on

	the name line on the quiz. Read the instructions to the trainees and designate the return to class time (based on 20 minutes out from start of the quiz time). As time allows, grade completed quizzes, using the “quiz answer key” (attached). Once all trainees have completed the quiz and have returned after the 20 minute time frame, go over the quiz and explain correct answers. Does anyone have any questions? **Summary** When preparing to receive a patient for a dental sealant procedure, the operatory must have the proper equipment, materials, instruments, and protective equipment. Who can name three sealant-specific tools or materials? Who can explain why we etch the tooth surface prior to placing sealants? Who can name at least three things that can help stave off saliva during sealing?

Evaluation:
Have trainees proceed to the three treatment rooms indicated for OJT. Explain to trainees that they will set up the rooms individually, in turns, according to the performance objective. Repeat the performance objective aloud to trainees. The trainer will perform room checks, based off of the materials list provided to the trainees.

Conclusion:
Remember the set-up for sealants. Breaking it down into categories, like those listed on the “Sealant Preparation Materials List” might help you remember.
While working toward reducing caries rates and improving sealant rates, you learned today the materials needed for a room prepared to place sealants by a single operator. With your new background knowledge, you will be prepared to utilize materials effectively for optimal sealant placement.
Next, you will learn the hands-on approach to the steps behind placing sealants and ensuring their effectiveness.
Does anyone have any final questions before moving on to learning the clinical process behind sealant placement?
Thank you for your attendance and participation today.

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Wilkins, E. M. (2017). Sealants. In J. Joyce & A. Millholen (Eds.), *Clinical practice of the dental hygienist* (12th ed., pp. 620-628). Wolters Kluwer.

Training Aids/Notes:

Be sure the training room has food and proper set-up ahead of time.
Check powerpoint for proper functioning on the projector ahead of time.
Have three treatment rooms available for training for the evaluation portion.
Ensure that proper stocking of supplies has been completed for sealant set-up in three operatories.
Print out “Sealant Preparation Materials List” copies ahead of time.
Print out the quiz copies ahead of time.

OJT SKILL BOOK

Directions: Use this book to keep track of the tasks mastered in the OJT training program. Enter date and initial as each task is mastered.

Task #	Performance Objectives	Pass/fail	Date	Trainer's Initials
1	Given a prophy operatory and access to all dental materials, instruments, and equipment, prepare the treatment room with needed supplies within 10 minutes, ensuring that no objects from the "Sealant Preparation Materials List" are excluded.			
2	Using clinic materials, prepare patient and operator with safety equipment, according to OSHA standards and the "Sealant set-up" powerpoint.			
3	Using a computer with Eaglesoft dental software, a prophy handpiece, a prophy angle, pumice, and water, polish indicated tooth surfaces, according to the dentist's recommendation in the dental record.			
4	Using an etchant pen, an air/water syringe, and slow-speed suction, etch the polished tooth surfaces, so that they appear chalky white when dried.			
5	Using an Embrace wetbond sealant pen, an air/water syringe, a dry angle, slow speed suction, a curing light with shield, and a bite block (if needed), seal etched tooth surfaces, that result in healthy occlusion and adequate retention.			
6	Using a mirror, air, and overhead light, and a #23 "Shepherd's Hook" explorer, ensure proper retention of sealants, so that no portion of the pit and fissure is exposed, and with no avulsion of sealant or lifting of sealant material along edges.			
7	Using articulating paper, a mirror, and articulating paper forceps, ensure proper occlusion with opposing teeth, so that articulating marks are eliminated completely on the sealed tooth and its occluding tooth.			

COURSE MANAGEMENT PLAN

Detailed Expected Length of Course:

This course is to be delivered in two segments. The first segment will be classroom training (CRT). The second segment will be on-the-job training (OJT).

CRT: The classroom portion of training will take a single 4 hour session of instruction. The classroom portion will pertain to proper set-up of the dental operatory, including instrument selection, barrier placement, and dental materials selection and preparation.

OJT: In the clinic, training will be performed initially over a 4 hour session. This session will cover safety equipment, tooth surface polishing, etching, and sealing, as well as the processes for ensuring adequate retention and resultant occlusion of sealants within the oral cavity.
Subsequent OJT will involve 1 hour evaluations for each learner, and may need to be repeated, based on potential inadequate competency attainment.

Space Requirements:

The CRT will take place in the hospital dentistry clinic's board meeting room, located on the second floor of Carilion's Rehab Building, adjacent to the Carilion Dental Care clinic. The room is already equipped with a laptop for the presenter, a remote control for powerpoint slide control, a projector, lighting control, a large U-shaped table, and more than the needed 10 chairs for learners. This space also has countertops on the left side of the room and a microwave, so that learners can be provided with lunch after the CRT session.

The OJT portion will take place in the pediatric dental clinic. It will utilize three dental operatories at a time. Preference will be for prophy operatories to be used, as opposed to restorative treatment rooms. Each operatory will comfortably allow for one trainer and 3-4 trainees at a time. Most of the trainee learning will be done standing, but chairs can be brought in from the break room for trainee comfort. Each operatory is enclosed on one end by a curtain, and small windows are in some of the operatories. The operatories will be stocked with what supplies they are normally stocked with. There will be a tray set-up example in each operatory before training begins, including supplies that employees will be learning to retrieve from other areas of the clinic. Those areas are to be well stocked prior to the initiation of training.

List of Resources:

For CRT:

The board meeting room at the Carilion Dental Care clinic
Laptop with Eaglesoft dental software

Internet connection
Projector
Speakers
5 pizzas
3 2-Liter sodas
20 water bottles (recyclable)
Ice from the ice machines
Ice bucket with scoop
Fresh fruit on serving tray
Cookie assortment (20 piece)
20+ napkins
20+ paper plates
20+ paper cups
Training resources
Sealant Set-Up powerpoint
11 Sealant preparation materials list copies
11 “Prepare the treatment room” quiz copies
1 quiz answer key
1 copy of CRT lesson materials
Clinic access with all resources listed for OJT (as seen below), minus extracted teeth, patient charts, and patients

<u>For OJT:</u>

3 prophy operatories
3 operator chairs
3 patient chairs
3 overhead lights
10 pairs trainee UV safety glasses, plus 3 pairs for patients
23 extracted teeth
6 full Embrace wetbond sealant pens
6 etchant pens
23 sealant pen tips
23-etchand pen tips
3 boxes of microbrushes
Bin of pumice
Air hook-up
Water hook-up
Adequate air and suction pressure
23 air/water syringes
23 suction tips
3 packs of 2x2” gauze squares (100 count)
3 biteblocks of each size (pediatric-through-large adult)
3 curing lights
23 curing light shields
3 “dummy” dental charts within Patterson Eaglesoft software

3 computers
23 patient bibs
3 patient bib clips
3 packs of cotton rolls
3 Sani wipes containers
13 pairs of rubber gloves
Sterilization room
Sterilization pouches
Biological indicators
Autoclave
23 prophy angles with rubber cups
3 prophy handpieces
100 dry angles
3 packs of small operator gloves
3 packs of medium operator gloves
3 packs of large operator gloves
10 #23 shepherd's hook explorers
10 intra-oral double-sided mirrors
3 booklets of articulating paper
3 articulating paper forceps
3 posterior unilaterally bladed scalers with cleoid toe
13 Sealant preparation materials list copies
23 OJT skill book copies
3 copies of OJT lesson plan materials
Extra chairs, as needed
3 Sharps containers
3 treatment trays
3 boxes of surgical masks
3 boxes of plastic tray covers
1 pack of paper tray cover
3 rolls of plastic barrier tape
3 boxes of curing light plastic covers
23 dappen dishes
10+ patients

Description of Students and Expected Number of Students:

Student numbers will consist of 10 dental assistants working in pediatric hospital dentistry, with at least two years of experience, and up to thirty years of experience, in general dentistry assisting each. Assistants will have to be pulled from their regular duties for both sessions of training. This will lead to a full day of clinic closure, apart from dental hygiene under general supervision, as well as clerical duties. The assistants in training hold between GED's and high school diplomas, as well as some certified dental assistant certificates. All of the dental assistants are CPR and radiograph safety-trained. For some assistants, this course may be a refresher course. For most, it is new information and training. The trainees are all Roanoke-born women with multiple racial

backgrounds. There is some recognized drama within the team, but it is mostly competitive-based. This can be seen as potentially helpful in their motivation to learn. There are no physical restraints of significance in any of the team's workforce that would affect training, including no major visual impairments. Some of the assistants have musculoskeletal disorders that could affect training, but to no further degree than they affect their current hands-on assisting work. All participants use English as their first language. Some assistants demonstrate medium levels of communication skills and writing accuracy. The assistants already assist with the placement of dental sealants by dentists. Therefore, they are knowledgeable about the dental materials involved, how they are applied, and how they are evaluated. The knowledge they are to be instructed in is tailored to allowing them to perform the process on their own. During onboarding at Carilion, assistants learn the core values of the organization, including how to treat patients, their families, and their privacy. It is a prerequisite for working for Carilion. The assistants already key in patient notes, codes for payments, and medical history data. They are also already skilled in reading and updated dental records. They regularly run suction, water and air tools for dental procedures. The chemistry of pumice, etch, and sealant is not expected to be known already the assistants. Another part of their onboarding at Carilion involves infection control and proper use of PPE.

Instructor Training, Classroom:
Any board-certified, licensed dentist or dental hygienist could lead this course, as well as an experienced dental assistant with in-depth knowledge of the chemistry behind sealant materials. Any trainer selected for this course will need to provide documentation that they have experience and training on providing training to others. The instructors must be familiar with Carilion policies, as well as OSHA, HIPAA and ADA policies and regulations. The instructor will need to give adequate time and attention to learning the material ahead of the course implementation.

Instructor Training, OJT:

OJT instructors will need to be calibrated on the sealant process, will need to read through the training materials, demonstrate competency on the processes listed, and will need to be excellent communicators and demonstrators. They will need to be capable of providing information, demonstrating clinical concepts, responding to questions, and resolving issues that may arise during training. The instructor must also meet all of the requirements listed for the trainees. The trainers must be exemplary clinicians.

Evaluation Plan

Internal

1. Learner evaluation forms:
   Rating scale of 1-5, with 1 being strongly disagree, 2 somewhat agree, 3 neither agree nor disagree, 4 somewhat agree, and 5 strongly agree

   a. How well did the classroom training inform them on the science behind sealants?
   b. Did training encourage their participation?
   c. How confident do they feel post-training about their ability to independently place sealants?
   d. How well did the classroom trainer deliver the content?
   e. How well did powerpoint and paper materials enhance learning in the classroom?
   f. Were they encouraged to participate in the OJT?
   g. How well did their OJT trainer deliver information and demonstrate procedures?
   h. Was clinical space utilized well to give trainees optimal learning ability?

2. Classroom lesson quiz results. The goal would be to have a 100% pass rate.

3. Task Detailing sheet results. Each OJT task will be evaluated during training by a trainer observing the trainee while he/she goes through the task details for each task. The tasks will be performed on an extracted tooth (not on a live patient).

External

1. OJT Skill Book results.

2. Caries rate reduction of at least 10% in the clinic by the end of the first year post-training, amongst patients with moderate or high caries risk, according to caries risk forms.

3. Decrease by at least 10% of sealant procedures in dentists' and hygienists' columns, with increase of at least 10% of sealant procedures in prophy columns.

Analysis and Corrections

Consistently missed questions on the quiz would lead to alteration in course materials, and would lead the instructor to covering these topics again, in an altered form, to ensure retention and comprehension.

Task detail results will indicate which areas of instruction need more focus. Any individual error will be immediately remediated by the trainer on-site with the trainee. The trainee when then be able to make a new attempt on that aspect of the task. Any overall results reflecting poor uptake in material will result in group remediation of the topic in a common space within the clinic, or individually in teams in each of the three operatories, depending on issue type.

Any failed attempts on OTJ skill book results would require one-on-one remediation with trainers or supervisors. Any consistency behind learners' lack of ability would be communicated back to the trainer and course developer for course improvement measure to be taken.

Lack of desired results in caries reduction amongst the patient population would require a method to evaluate motivation. It would need to be determined how assistants feel about placing sealants, how providers feel about assistants placing sealants, how well the front desk is utilizing prophy appointments to meet the sealant demand, and how management is enforcing these factors. Also, sealant retention could be a factor to equate, as avulsed sealants could result in caries, and would require some further training to ensure better retention rates. It would also be necessary to ensure that moderate and high risk caries patients are being treatment planned for sealants by the dentists. These same factors would be evaluated as well if sealant procedures by room are not at the levels indicated in the external evaluation plan #3.

Name _____

	Exemplary (5)	Proficient (4)	Satisfactory (3)	Needs Improvement (2)	Unsatisfactory (1)	Not Included (0)
Front End Analysis (15%) ▪ Description of business/learners ▪ Prerequisites and tests ▪ First 6 Analyses	15- 14	13- 11	10- 8	7- 5	4- 1	0
Job and Task Analysis (15%) ▪ Active verbs on task list ▪ Tasks describe outcomes	15 - 14	13 - 11	10 - 8	7 - 5	4 - 1	0
Task Breakdown (10%) ▪ Tasks detailing done properly ▪ Tasks selected from task list and followed appropriately through lesson plans. *All tasks should match between documents.* ▪ Instructional planning worksheets	10 - 9	8 - 7	6 - 5	4 - 3	2 - 1	0
Lesson Plans (25%) ▪ Use appropriate tasks ▪ Properly developed POs ▪ Use proper sequencing for POs ▪ Properly formatted ▪ Includes all elements ▪ Test is accurate measure for PO ▪ All attachments are included	25 - 21	20 - 16	15 - 11	10 - 6	5 - 1	0
Job Book (10%) ▪ Tasks match those on task list ▪ Tasks are appropriately selected ▪ Performance objectives are developed ▪ Properly formatted	10 - 9	8 - 7	6 - 5	4 - 3	2 - 1	0
Management Plan (10%) ▪ Includes o Course length o Space o Resources o Number of Students o Training requirements ▪ Responses are appropriate	10- 9	8- 7	6- 5	4- 3	2- 1	0
Evaluation Plan (5%) ▪ Three appropriate internal evaluation methods ▪ Three appropriate external evaluation methods ▪ Included analysis and correction	5	4	3	2	1	0
Professionalism (10%) ▪ Grammatically correct ▪ Professional appearance ▪ Cover page ▪ Followed correct format	10- 9	8- 7	6- 5	4- 3	2- 1	0

Sealant Set-Up.pptx

Sealant Preparation Materials List

***Items highlighted will need to be set out with each sealant appointment. Other items are typically already in place.**

Operatory Equipment

- Computer with Eaglesoft access
- Internet connection
- Adjustable operator chair
- Reclining patient chair
- Overhead light
- Air with adequate pressure
- Water with adequate pressure
- Low power suction
- Sharps container
- Treatment tray
- Patient bib clip

Safety Equipment (PPE)

- UV patient safety glasses
- Safety glasses for the assistant, or loupes
- Surgical mask or N95 mask for assistant
- Treatment gloves
- Plastic and paper barriers
- Surgical cap
- Surgical gown
- Room air purifier
- Face shield

Dental Materials

- Embrace wetbond dental sealant pen
- Dental etchant pen
- Sealant tip
- Etchant tip
- Microbrushes (1 per sealant)
- Pumice powder
- Dappen dish

Instruments and Mobile Equipment

- Biteblock (based on mouth size of the patient)
- Curing light
- #23 “shepherd’s hook” explorer
- Double-sided intra-oral mirror
- Articulating paper forceps
- Posterior unilaterally bladed scaler with cleoid toe

Disposables

- Air/water syringe
- Slow speed suction tip
- Gauze (3 per sealant)
- Curing light shield
- Curing light sleeve
- Steri Wipes
- Prophy angle with rubber cup
- Dry angles (1 per sealant)
- 1-2 sheets of articulating paper
- Patient bib
- Cotton rolls (1-2 per quadrant to be sealed)

Sterilization Room Materials

- Autoclave
- Sterilization pouches of various sizes
- Autoclave biological indicators
- Rubber gloves

Prepare The Treatment Room QUIZ Name: _____

For this quiz, you will be given 20 minutes to read through the questions and select the best answer. You may use your notes and your "Sealant Preparation Materials List" as you complete this quiz. The powerpoint slides will not be accessible during this quiz. Once you complete the quiz, you may turn it in to the instructor and take a break. Return to the instruction room at _____am. Each question is worth 10 points. A passing score is 7/10 correct.

True or False? (Write T for true or F for false on the blank to the left of the question.)

1.____ Caries rates can be reduced by 86%, just by way of dental sealants being placed on at-risk pits and fissures.

2.____ Wetting pumice can cause it to become too abrasive for tooth surfaces, leading to increased risk of hyper-sensitivity.

3.____ The ADA supports sealant placement over incipient decay.

Fill in the blank (Write in your answer. One word per blank.) Each blank is worth .5 points.

4. Etching should be done over the course of _____ seconds for permanent teeth, and over the course of at least _____ seconds for deciduous teeth.

5. Silica eases into pits and fissures. This results in the need to _____ the tooth surface thoroughly for at least _____ seconds after etching.

Short Response: (Write in the answer that best answers the question. Full sentences not required.

6. The sealant rate is currently 30% for what pediatric patient population?
   _____

7. Name one technique for diverting saliva during the sealing process.
   _____

Multiple Choice: Select the letter (by circling it) for the most correct answer.

8. Bond and sealant material are both what type of material?
   a. Amalgam
   b. Glass Ionomer
   c. Porcelain
   d. Resin

9. Which type of instrument would be best to use to adjust the occlusion of a dental sealant that is too large?
   a. Anterior sickle scaler (double-bladed)
   b. Posterior Gracey curette (single-bladed)
   c. Anterior Gracey curette (single-bladed)
   d. Posterior sickle-scaler (double-bladed)

10. Which instrument would be best to check for the retention of a freshly-placed dental sealant?
   a. ODU 11/12 explorer
   b. ODU ½ Gracey curette
   c. #23 "Shepherd's Hook" explorer
   d. Periodontal probe

Preparing the Treatment Room Quiz Answer Key

1. T
2. F
3. T
4. 20, 60
5. rinse, 20
6. low-income
7. Potential answers: cotton rolls, dry angles, mouth prop/biteblock, air, patient head turn away from area of isolation, gauze
8. d
9. b
10. c
