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Closing the Gap - Integrating Dental Care with SBHCs

01/30/2025

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PRESENTER DISCLOSURES:

(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

"No relationships to disclose"

(2) Presentation will include discussion of "off-label" use of the following:

Silver Diamine Fluoride: to control caries progression

3) Credits: Dr. Oberlander for sharing clinical pictures and collaborating with presentation. Thanks to Rose Nuttin and Pam Osterbrock for their valued administrative support.

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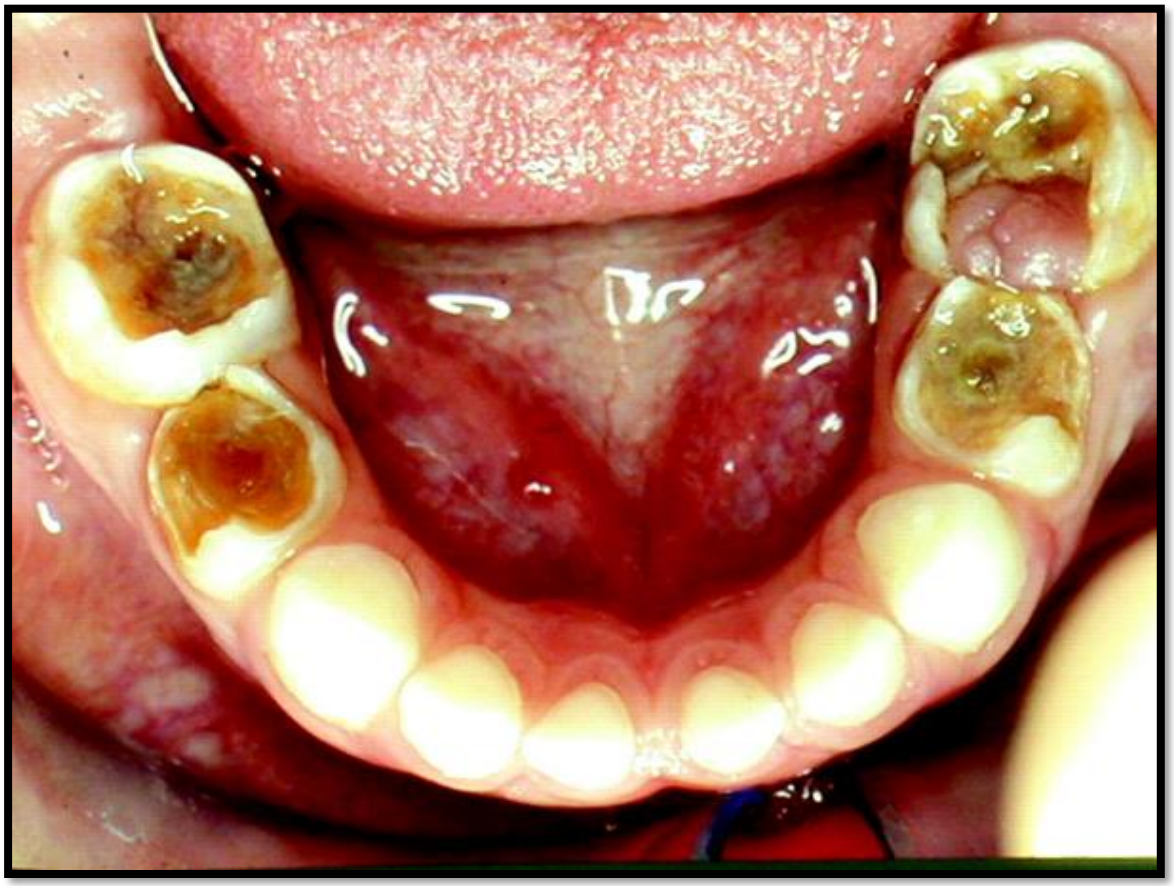
Does this look familiar?

Unfortunately, in Cincinnati Public Schools, this is a painful and familiar reality to so many school nurses.



- Students come to the school nurse complaining of pain or with obvious swelling.

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From School to the Dental Chair

There are three ways to get there!

1. Students Identified by the School Nurse
2. Students seen by the Preventive Program
3. School Based Dental Centers

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School Nurse Dental Screening

STAFF

- Nurse at the school

INSTRUMENTS

- Pen light
- Tongue depressor
- Fluoride Varnish and applicator

No need to dry the teeth—sets in the presence of saliva.

School nurses do dental screenings annually to identify children with obvious decay. Nurses shine a light into student's mouth, looking for any obvious problems.

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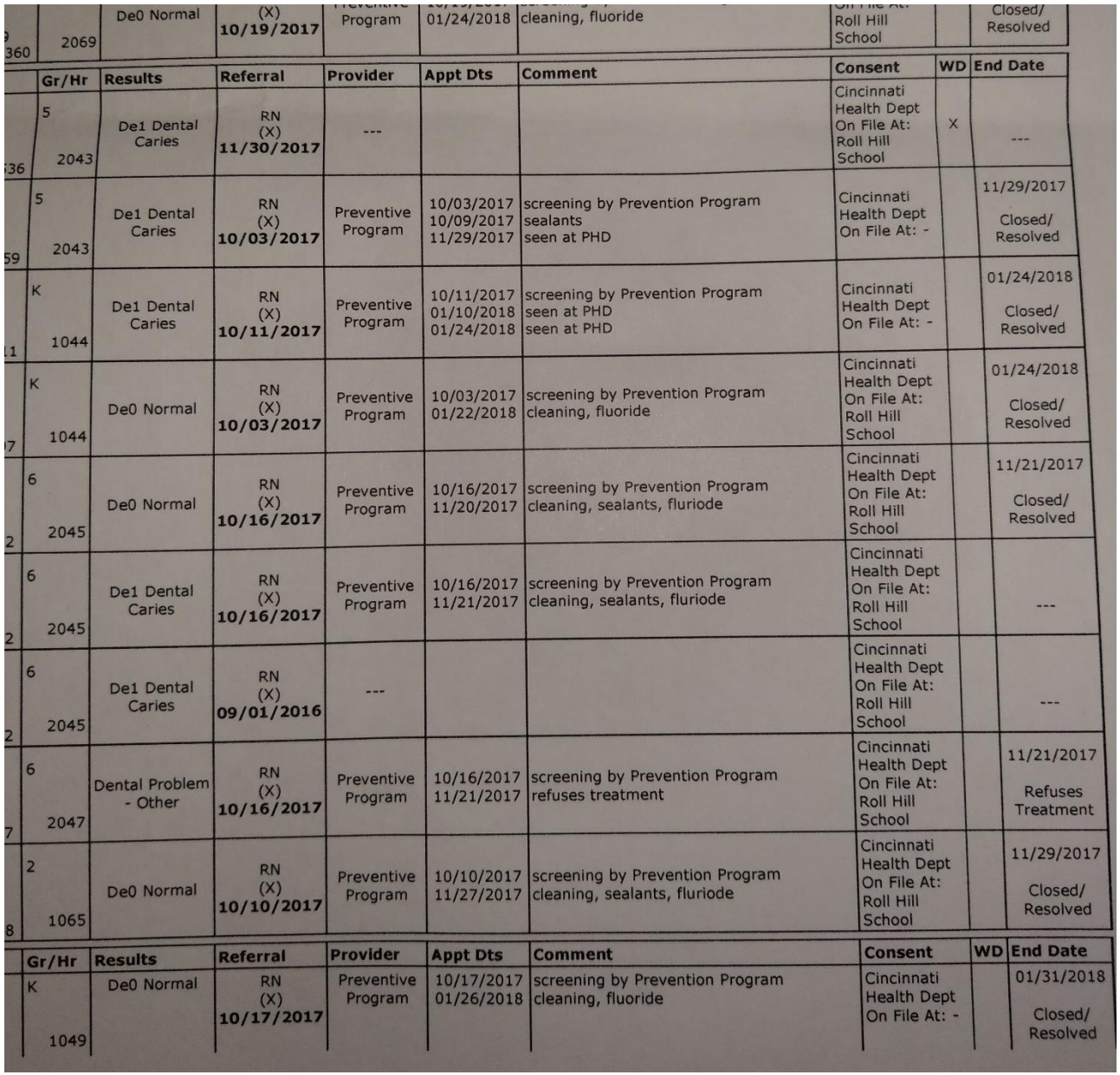
School Nurse Dental Screening

Nurse opens a Power School Dental Referral for all students needing dental care

- Power School is used by school dental team and nurse to track students who need or have gotten dental services

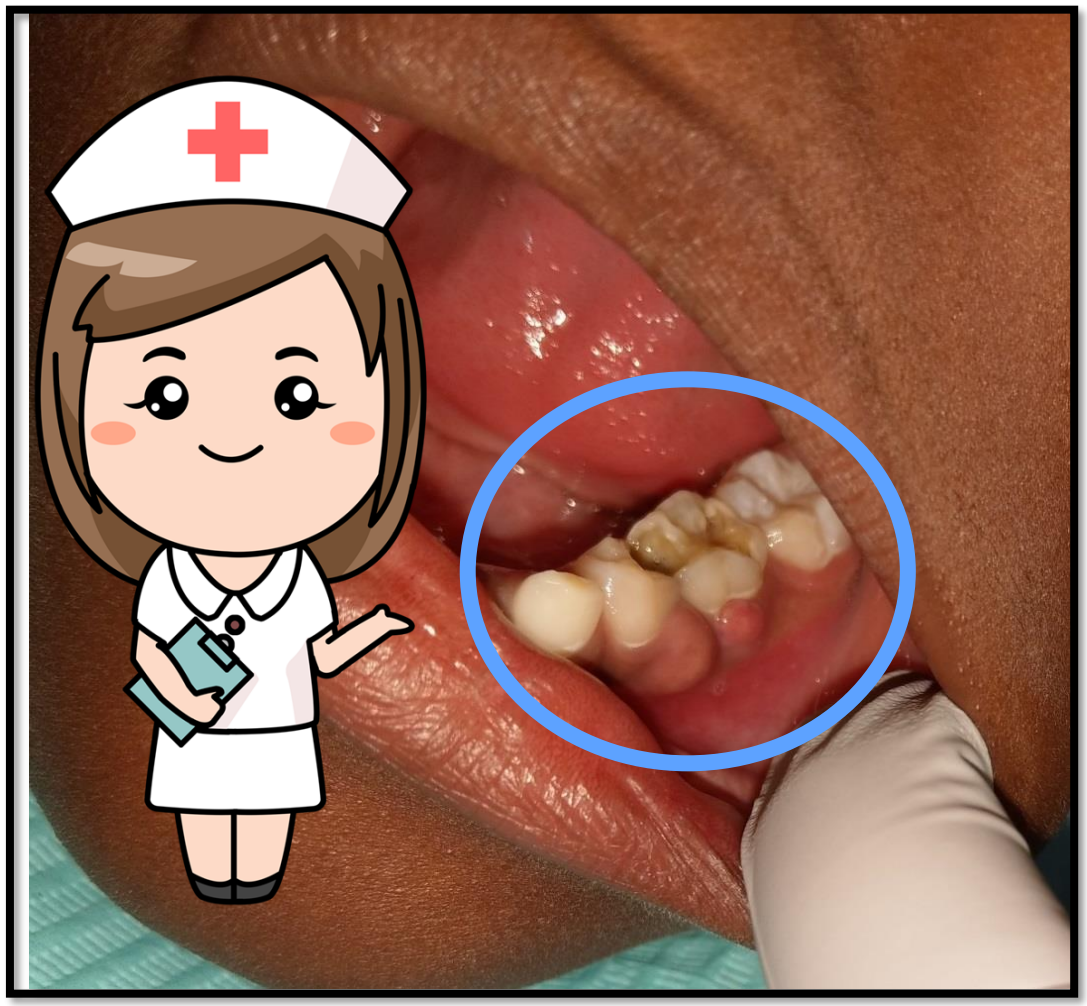


360	2069	De0 Normal	(X) 10/19/2017	Program	01/24/2018	cleaning, fluoride	Roll Hill School		Closed/ Resolved
	Gr/Hr	Results	Referral	Provider	Appt Dts	Comment	Consent	WD	End Date
536	5 2043	De1 Dental Caries	RN (X) 11/30/2017	---			Cincinnati Health Dept On File At: Roll Hill School	X	---
59	5 2043	De1 Dental Caries	RN (X) 10/03/2017	Preventive Program	10/03/2017 10/09/2017 11/29/2017	screening by Prevention Program sealants seen at PHD	Cincinnati Health Dept On File At: -		11/29/2017 Closed/ Resolved
11	K 1044	De1 Dental Caries	RN (X) 10/11/2017	Preventive Program	10/11/2017 01/10/2018 01/24/2018	screening by Prevention Program seen at PHD seen at PHD	Cincinnati Health Dept On File At: -		01/24/2018 Closed/ Resolved
7	K 1044	De0 Normal	RN (X) 10/03/2017	Preventive Program	10/03/2017 01/22/2018	screening by Prevention Program cleaning, fluoride	Cincinnati Health Dept On File At: Roll Hill School		01/24/2018 Closed/ Resolved
2	6 2045	De0 Normal	RN (X) 10/16/2017	Preventive Program	10/16/2017 11/20/2017	screening by Prevention Program cleaning, sealants, fluriode	Cincinnati Health Dept On File At: Roll Hill School		11/21/2017 Closed/ Resolved
2	6 2045	De1 Dental Caries	RN (X) 10/16/2017	Preventive Program	10/16/2017 11/21/2017	screening by Prevention Program cleaning, sealants, fluriode	Cincinnati Health Dept On File At: Roll Hill School		---
2	6 2045	De1 Dental Caries	RN (X) 09/01/2016	---			Cincinnati Health Dept On File At: Roll Hill School		---
7	6 2047	Dental Problem - Other	RN (X) 10/16/2017	Preventive Program	10/16/2017 11/21/2017	screening by Prevention Program refuses treatment	Cincinnati Health Dept On File At: Roll Hill School		11/21/2017 Refuses Treatment
8	2 1065	De0 Normal	RN (X) 10/10/2017	Preventive Program	10/10/2017 11/27/2017	screening by Prevention Program cleaning, sealants, fluriode	Cincinnati Health Dept On File At: Roll Hill School		11/29/2017 Closed/ Resolved
	Gr/Hr	Results	Referral	Provider	Appt Dts	Comment	Consent	WD	End Date
	K 1049	De0 Normal	RN (X) 10/17/2017	Preventive Program	10/17/2017 01/26/2018	screening by Prevention Program cleaning, fluoride	Cincinnati Health Dept On File At: -		01/31/2018 Closed/ Resolved

School Nurse Dental Screening

Looking for:

- Tooth pain
- Discolored teeth
- Infection
- Gingival, facial swelling
- Cavities



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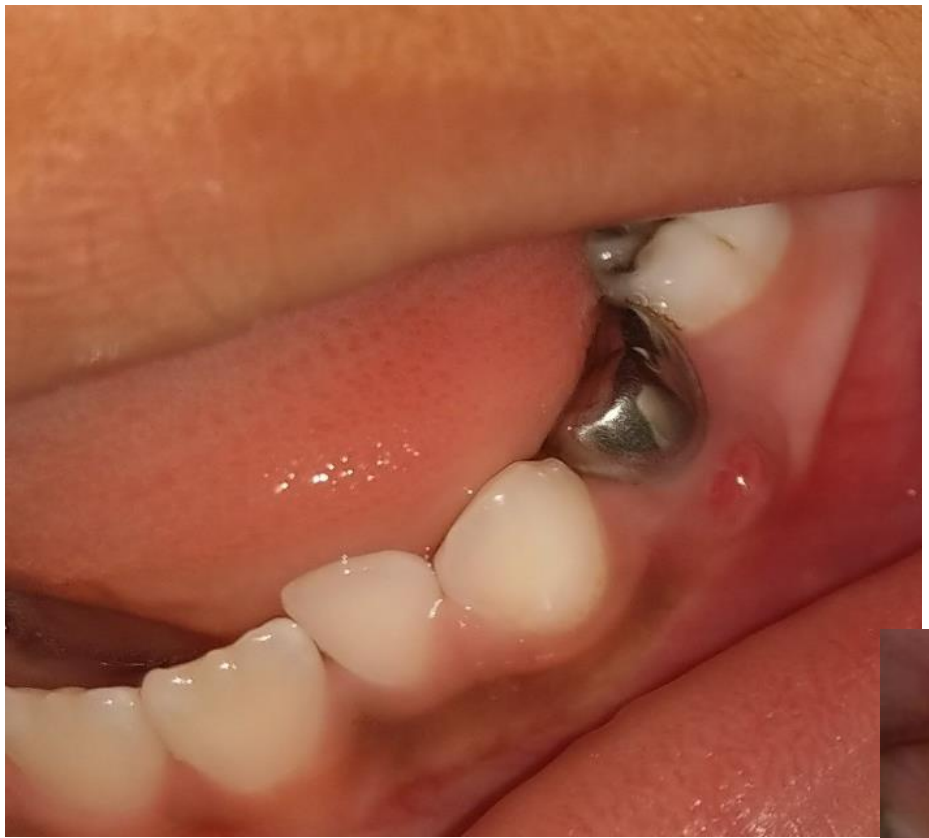
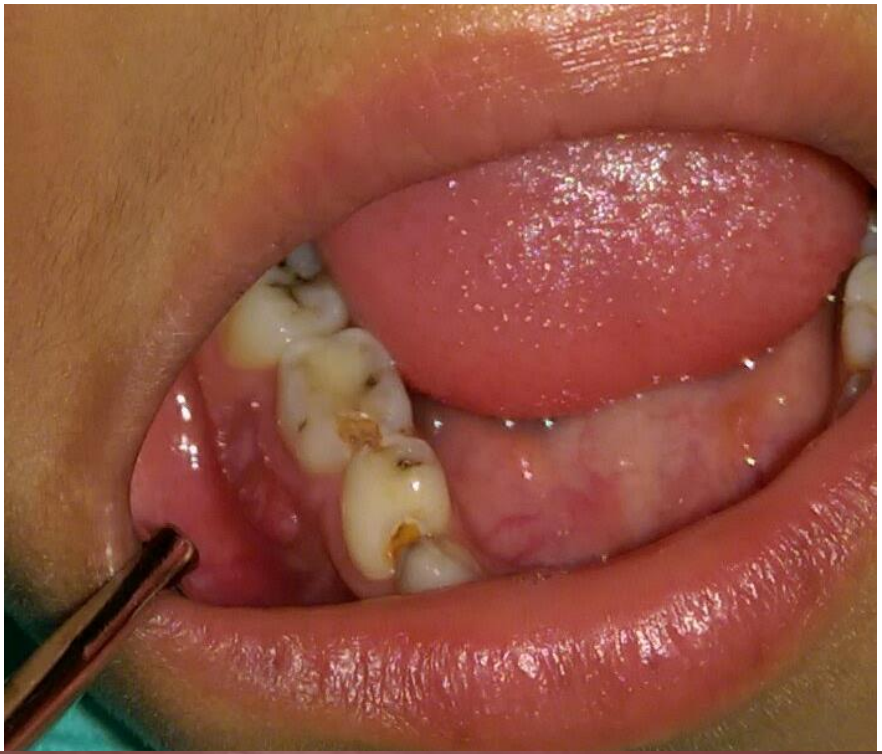
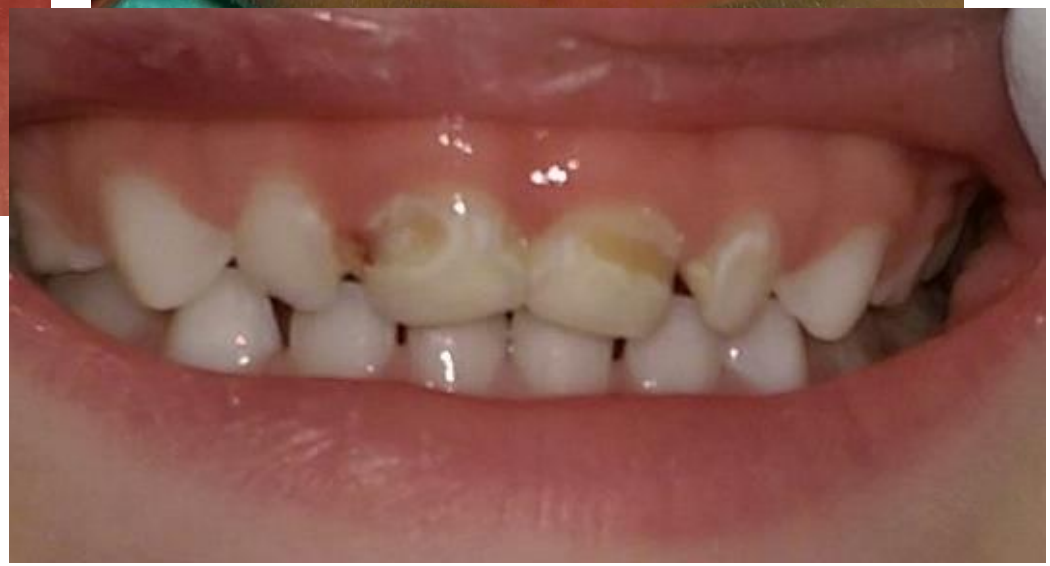
School Nurse Dental Screening







School Nurse Screening

School nurses are the biggest oral health champions to link students to oral care

Nurses who identify children in need of dental care will:

- Obtain treatment consent
- Review medical history
- Escort students to transportation
- Plan follow-up visits at SBDCs and with care coordinator for continuity of care.

School Based Dental Centers

School-Based Dental Centers (2022-2023)						
School	Enroll	DENTAL CONSENT	# REFFERED	# IN TREAT	# COMPLETED	% COMPLETED
AWL School	542	454	416	28	388	93
Aiken HS	1204	831	362	81	281	77
Oyler School	521	470	413	150	263	63
Gilbert A Dater HS	834	580	272	98	174	63
Western Hills University HS	1398	725	361	213	148	40
Withrow University HS	1311	875	325	69	256	78
	5810	3935	2149	639	1510	70

56% of students identified and referred with dental problems!

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School Nurse Dental Screening

SUCCESS

- All students have a dental screening
- Referrals entered in Power School, if needed
- Kids have good relationship with school nurse
- Identify high-priority dental disease
- Giving oral health education
- Nurses receive training on oral health screening.

OBSTACLE

- Connecting **all** the students to comprehensive dental care
- Limited transportation days
- Kids miss many school hours with tooth aches
- Consents
- Difficult for nurses to distinguish caries vs SDF
- Hard to standardize among so many nurses

Preventive Program

EQUIPMENT

- Laptop Computers
- Nomad (x-rays)
- Portable Dental Unit
- Portable Dental Char
- Compressor, Autoclave
- Instruments, Supplies
- Disposables, Lights
- And more!!!!!

STAFF

- Part-Time Dentist (3)
- Dental Hygienist (2)
- Dental Assistant (2)
- Maintenance Workers (move equipment to schools)

Preventive Program

Students at a school with the preventive program receive:

- Comprehensive Oral Exams
- Radiographs (x-rays)
- Cleaning
- Sealants
- Fluoride Varnish
- Silver Diamine Fluoride
- Oral Hygiene Education

Different from a sealant program and mobile clinic

Preventive Program – The Process

DENTAL OFFICE STAFF

Before Dentist exam:

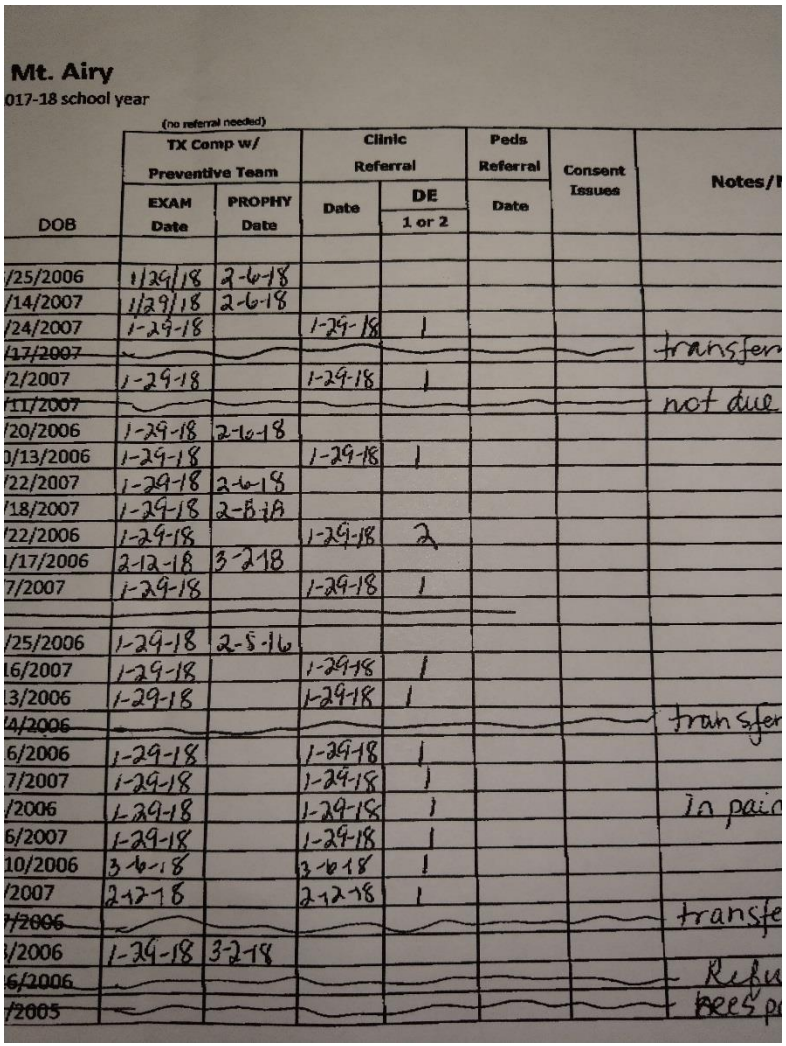
- Get list from Power School of students with consent
  - ALWAYS changing
- Manually verify insurance and consent
- Make spreadsheet with these kids names/DOB
- Scan consents for SBDCs

After Dentist exam, use spreadsheet to determine:

- Preventive only treatment
- Treatment needed (Prioritize care)
- Close out referrals in Power School (also, lost student – expelled, moved, refused, etc.)
- Coordinate follow-up care with school nurses and SBDCs.

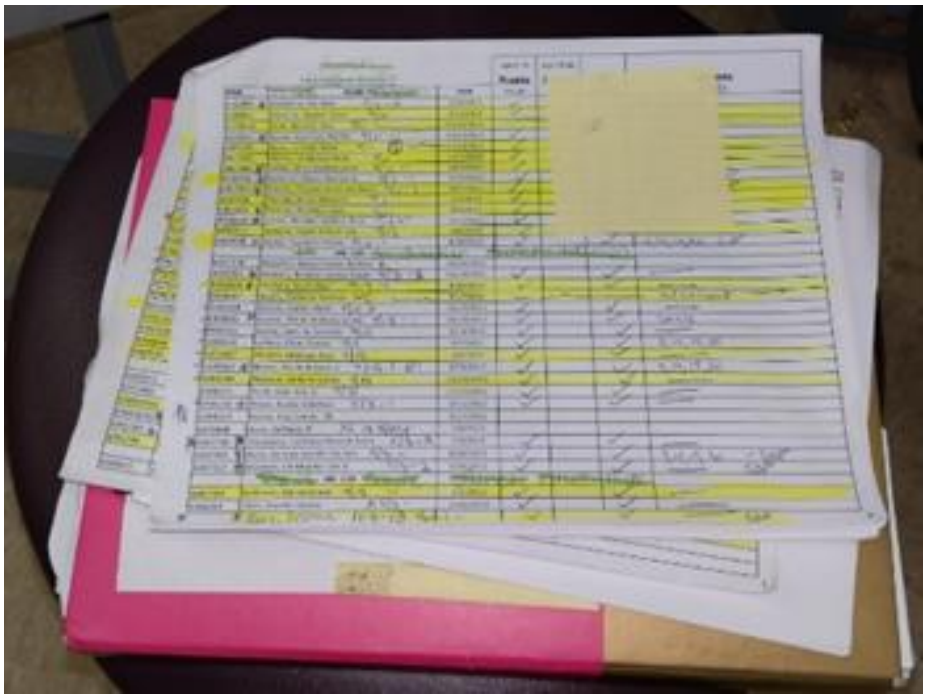
Preventive Program – the process

DENTAL SUPPORT STAFF



Mt. Airy
017-18 school year

DOB	TX Comp w/ Preventive Team (no referral needed) EXAM Date	PROPHY Date	Clinic Referral Date	Clinic Referral DE 1 or 2	Peds Referral Date	Consent Issues	Notes
/25/2006	1/29/18	2-6-18					
/14/2007	1/29/18	2-6-18					
/24/2007	1-29-18		1-29-18	1			
~~/17/2007~~	~						transfer
/2/2007	1-29-18		1-29-18	1			
~~/11/2007~~	~						not due
/20/2006	1-29-18	2-6-18					
0/13/2006	1-29-18		1-29-18	1			
/22/2007	1-29-18	2-6-18					
/18/2007	1-29-18	2-5-18					
/22/2006	1-29-18		1-29-18	2			
1/17/2006	2-12-18	3-2-18					
7/2007	1-29-18		1-29-18	1			
/25/2006	1-29-18	2-5-16					
16/2007	1-29-18		1-29-18	1			
3/2006	1-29-18		1-29-18	1			
~~4/2006~~	~						transfer
6/2006	1-29-18		1-29-18	1			
7/2007	1-29-18		1-29-18	1			
/2006	1-29-18		1-29-18	1			In pai
6/2007	1-29-18		1-29-18	1			
10/2006	3-6-18		3-6-18	1			
/2007	2-12-18		2-12-18	1			
~~/2006~~	~						transfe
/2006	1-29-18	3-2-18					
6/2006	~						Refu
/2005	~						bees p



Support staff fill out spreadsheets by hand at the "host" school

Preventive Program – the process

DENTIST

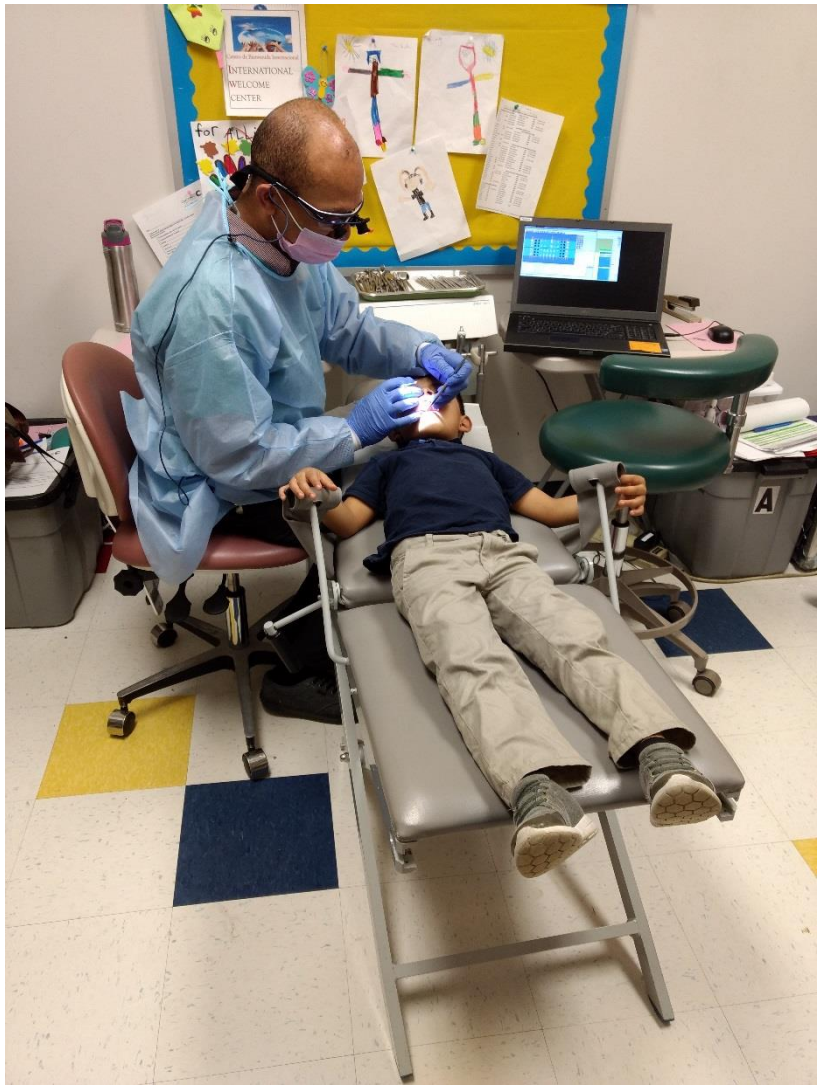
- Exam (only there on exam days)
- Preventive services done at school only:

  (Cleaning, fluoride, SDF, sealants)

  Chart all caries/disease

  (Treatment plan will be done at SBDC to restore caries/treat infection).
- Calibration

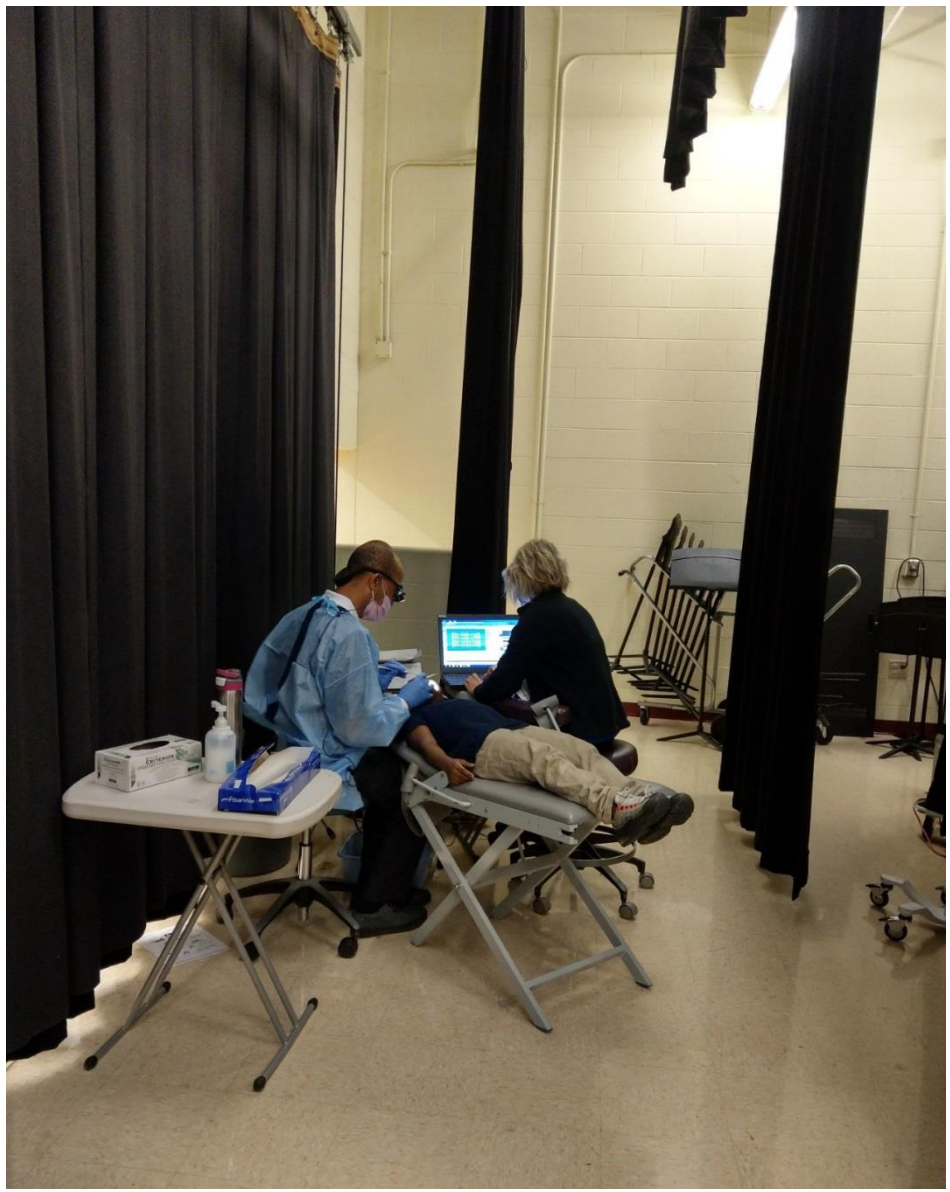
  (Meetings with all school dentists to ensure "standardized" treatment plans and proper chart documentation).



Preventive Program – the process

SUPPORT STAFF (1 RDH, 1 DA)

- Communicate with school staff (mainly teachers) & nurse
- Set up everything they need to work
- Call in 2-3 students at a time
- Provide preventive dental services (sealants, cleaning, fluoride)
- Input clinical information into EDR (Dentrix).
- Write parent note, obtain updated medical history & consent forms.
- Update patient tracking spreadsheets.



Preventive Program – the process

Its NOT easy to work in a portable program!

- Tubs to collect instruments, then sterilize at end of the day
- Makeshift tables
- Packing/unpacking all the time
- Portable dental equipment = loud, not as easy to use
- Battery operated
  - Hand piece, x-ray

Preventive Program – the process

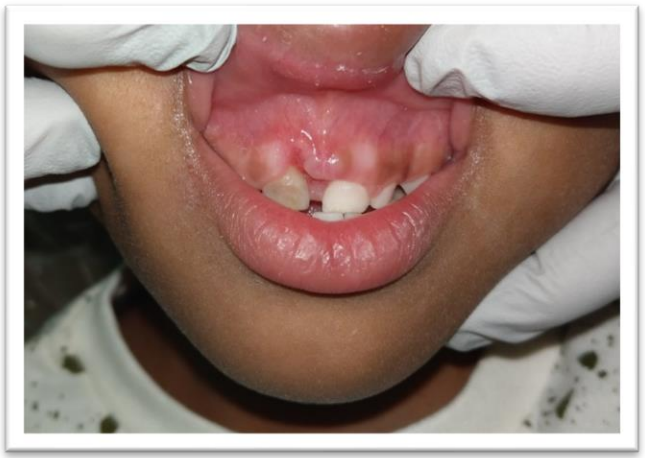
How to Prioritize Care

System for screening and preventive program

0 – no signs of caries/dental disease

1 – 1 to 4 teeth with caries

2 – more than 4 teeth with caries and/or infection (abscess)



Number of treatment visits

Number of needed treatment visits to complete care
Gets updated with every visit to the SBDC dentist.

Transportation

Each school served by the preventive program is linked to a SBDC.

The kids identified with cavities/disease are bused to their dental center one day every week for the whole school year.

Things to consider with transportation:

- Consent
- Bus/Vans are expensive
- Sharing buses
  - Vision Bus
  - School District Partnership
- Shuttle system (pick & drop students)
- School nurses/staff (escorting)

School-Based Dental Centers

PREVENTIVE TEAM															
SCHOOLS	2015-16			2016-17			2017-18			2018-19			2019-20		
	EXAMS	NEED TX	%	EXAMS	NEED TX	%	EXAMS	NEED TX	%	EXAMS	NEED TX	%	EXAMS	NEED TX	%
MT AIRY				347	184	53%	381	181	48%	394	145	37%	364	96	26%
RVE	284	117	41%	305	163	53%	289	126	44%	149	59	39%	110	46	41%
ROLL HILL	244	127	52%	431	196	45%	437	188	43%	417	179	43%	361	148	40%
ROBERTS	451	204	45%	504	191	38%	543	186	34%	498	131	26%	620	130	20%

A successful outcome: from 45% of school kids needing follow-up care to 20% after 5 years at Roberts.

Population health outcome improvement takes time, strategic work, and investment.

Equitable, affordable, accessible health care and a healthier population!

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Preventive Program

SUCCESS

- Students miss less class time
- Increases access to dental care
- Healthy kids get all dental treatment done at their own school
- High number of students receive dental services
- Links students with caries/disease directly to a dentist
- Prioritizes treatment needs
- More preventive dental visits
- Saves limited SBDC chair time

OBSTACLE

- School frustrations – no space, kids missing class, disruptions
- Consent rates
- Using portable equipment/supplies
- Moving to different schools
- Dental provider availability and sharing of program mission.
- Completing treatment on all the kids who need follow-up dental care
- Challenging treatment cases that need sedation or general anesthesia.

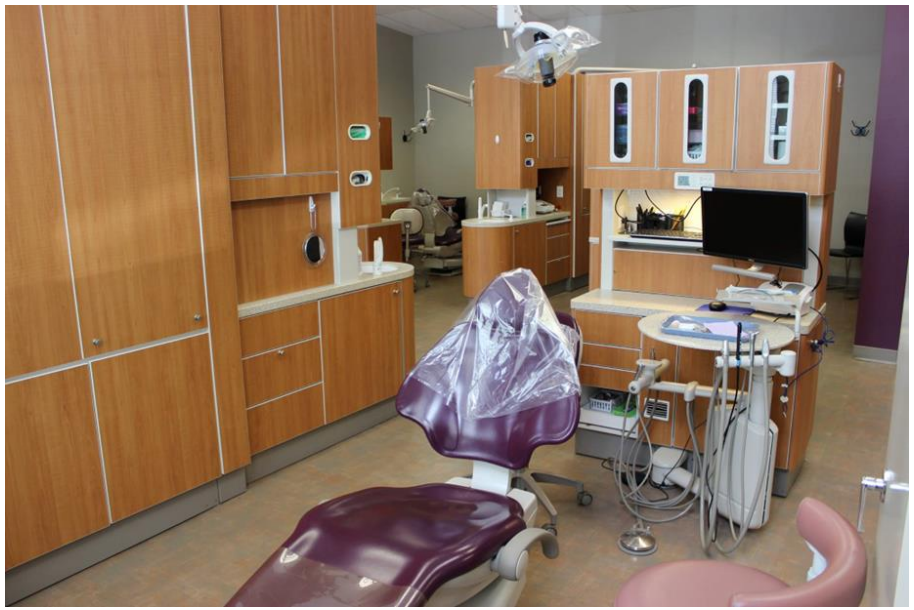
School Based Dental Center

STAFF

- Dentist
- Dental Hygienist
- Front Office Dental Assistant
- Expanded Functions Dental Assistant (EFDA)
- Certified Dental Assistants (CDA)
- Dental Assistants (DA)

EQUIPMENT

- 5 fully plumbed, fully operational dental operatories (ideal)
- All locations able to complete comprehensive dental treatment



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School Based Dental Center

West High/Dater

Oyler

Withrow

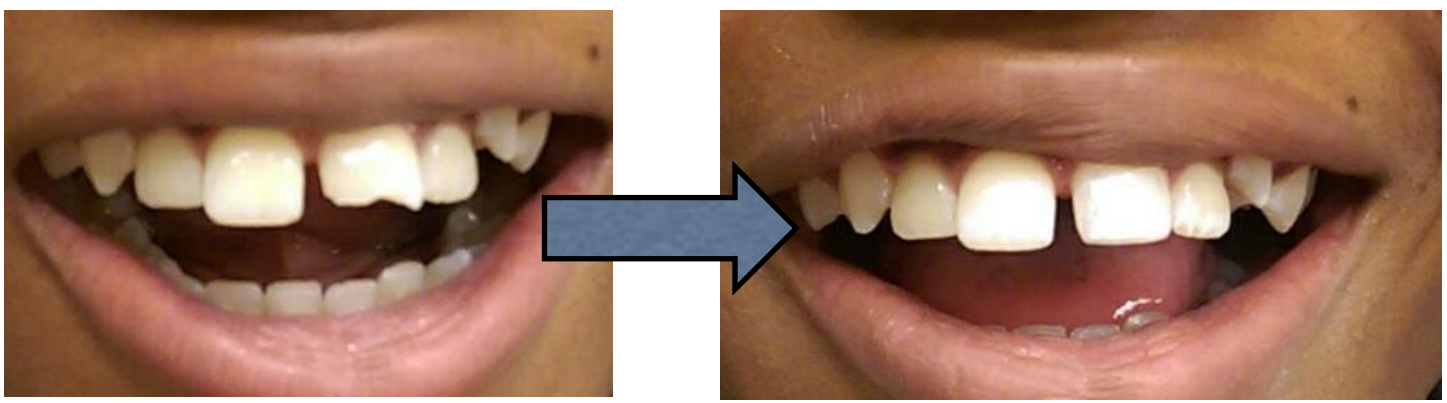
Aiken

AWL

School Based Dental Center

Students who attend a school with a SBDC have full access to dental services at all times!

- Students walk in for treatment (ER or comprehensive)
- Call/get out of class by dental staff
- Schedule appointments during elective classes
- Community patients also have access to comprehens oral health care.



Chronic Disease Management

1-*Traditional approach*: addresses dental caries as an acute surgical problem that requires restoration and repair.

If the responsible risk factors are not adequately addressed, new and recurrent caries will likely develop.

2-*Patient-specific/risk-based approach*: relies on a close collaboration between an informed and engaged patient/parent and a proactive health care provider/team.

Identification of etiologic factors→ Self-management goals; minimally-invasive treatment approaches

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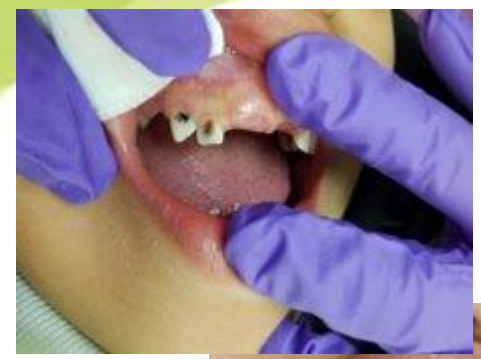
Chronic Disease Management



Minimally Invasive Treatment Options:

- Silver Diamine Fluoride (SDF)
- Same-day Sealants
- Interim Therapeutic Restorations (SMARTs)
- Frequent Fluoride Varnish Applications
- Povidone-Iodine swabs
- Hall SSC Crowns

Before

After

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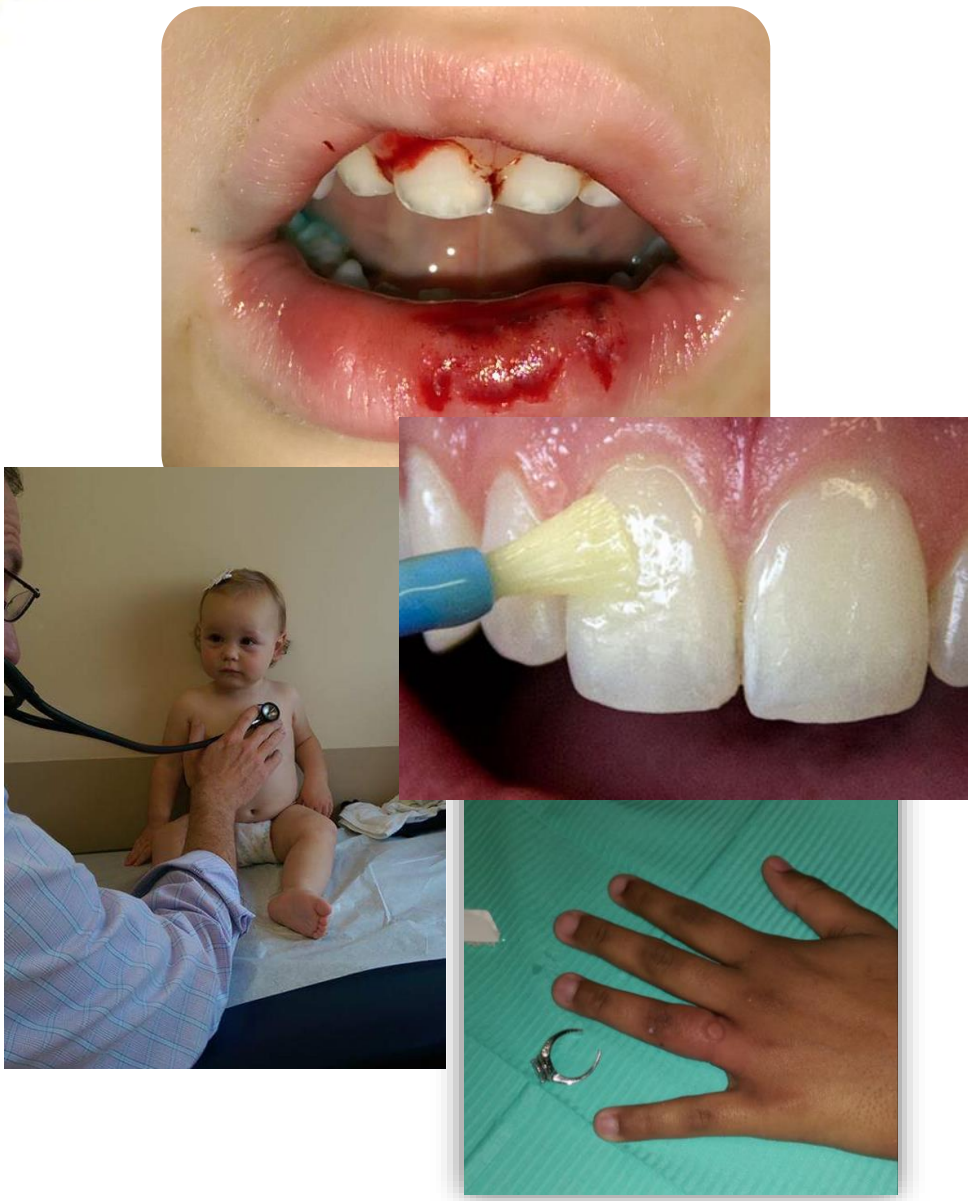
Integration with SBHC



Oral Health is part of Primary care!

- Systemic and oral health link (diabetes, pregnancy, nutritional counseling, smoking cessation)
- Emergency/Trauma
- Oral screenings and fluoride varnish application by medical providers during well-child visits
- Dental education
- Dental referrals (co-located services, warm hand-off")

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School Based Dental Center

SUCCESS

- Students miss less school days
- Students always have access to dental care
- Tooth pain is immediately addressed
- Positive relationships between dental & students
- Dental education and student shadowing opportunities
- More completed dental treatment
- Continuity of care
- Early preventive dental visits

OBSTACLE

- Teacher frustrations – calls interrupt class, don't want students to leave
- Students not coming→ hard to finish treatment specially for older kids.
- Challenging dental cases that need sedation or general anesthesia
- Parent communication
- Consent rates
- Limited dental center capacity
- Staying involved, but still productive

Highlights

Nurses as Oral Health Champions!

- Have a strong desire to improve the oral health of students

  (Advocate to get the limited spots at SBDC for their kids)

- Have an inner drive to help their students
- Walk them to the dental center

  Find kids, escort to the buses

  Work with teachers/admin at the school
- Work to get consent forms and update medical histories.

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Highlights

Dental Staff

- Who have a commitment to improving oral health
- Who care about the kids

  Hold hands, wipe tears, give hugs, paint faces
- Who work as a team

  Get job done efficiently and with high quality
- Who excel with pediatric dentistry

  Complete dental treatment on the most difficult children

Interprofessional Collaboration

Integrated Care: Medical-Dental Pediatrics

- Early oral health education for parents
- Early detection of caries for high-risk kids
- Early establishment of a dental home
- Early exposure to a dental provider
- Fluoride, SDF for caries prevention
- Convenient multi-purpose patient visits
- Increased dental patients and encounters
- Ability to intervene in the oral health of parents

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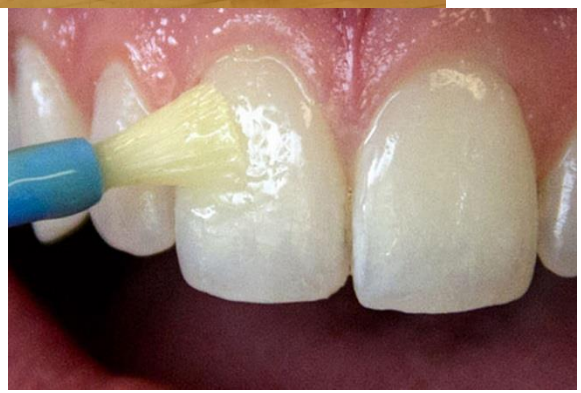
Integration with CHC

Pediatricians/Medical Care Team

- Oral screening, dental education
- Fluoride varnish
  - Starting at first tooth
- Dental referrals
  - Working on tracking with EPIC

Registered Dental Hygienist & DA

- Oral screenings
- Toothbrush cleaning, FVA, Iodine
- Priority referrals to dental centers



Note: photos for internal use only.

Interprofessional Collaboration

Integrated Care: Medical-Dental Pediatrics

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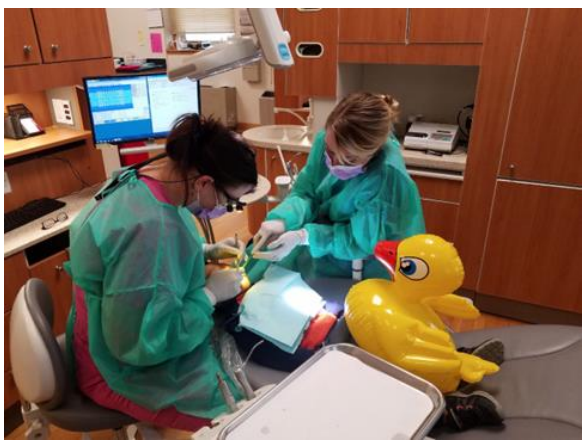
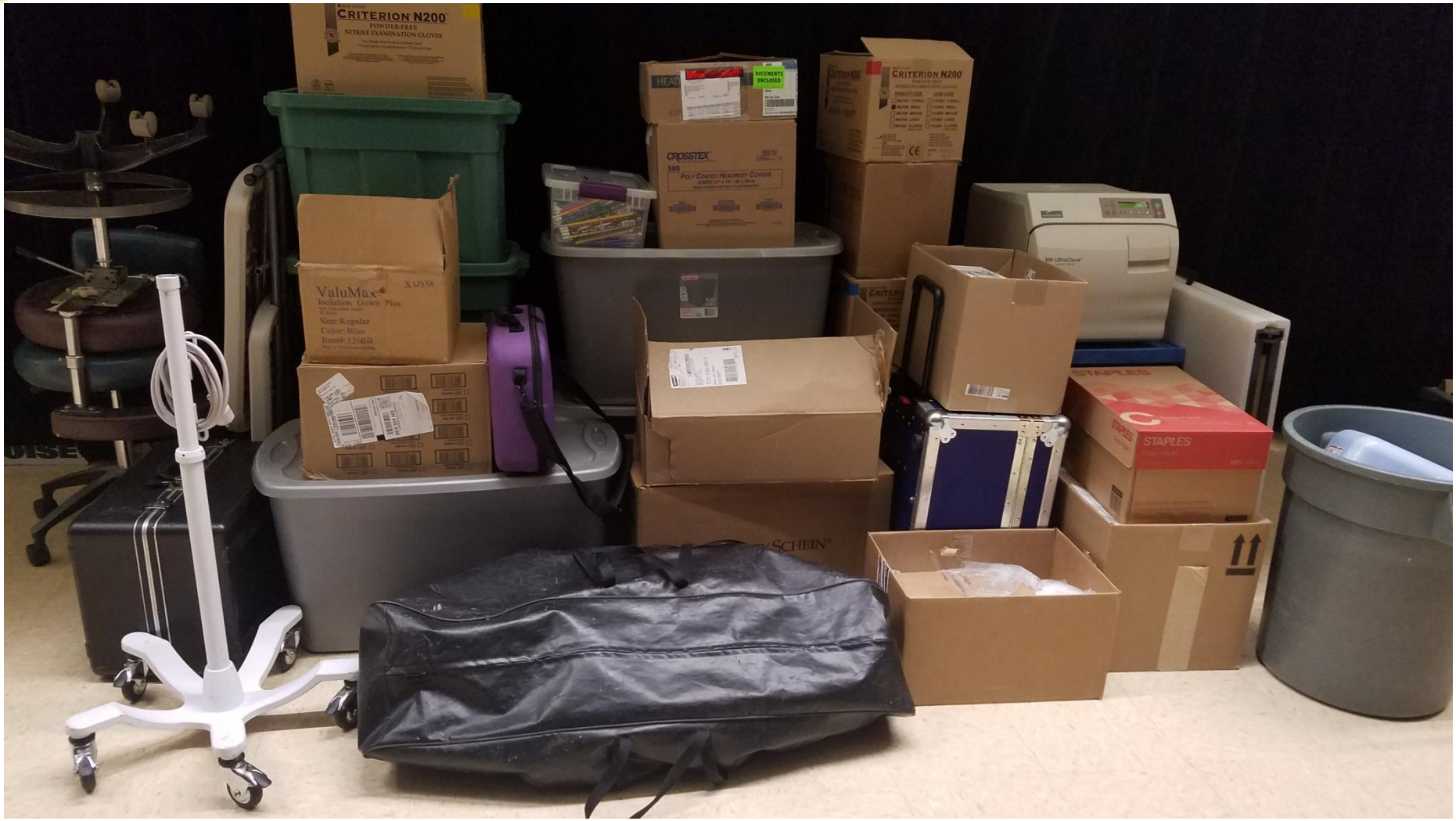
Thank You!



Reference Slides



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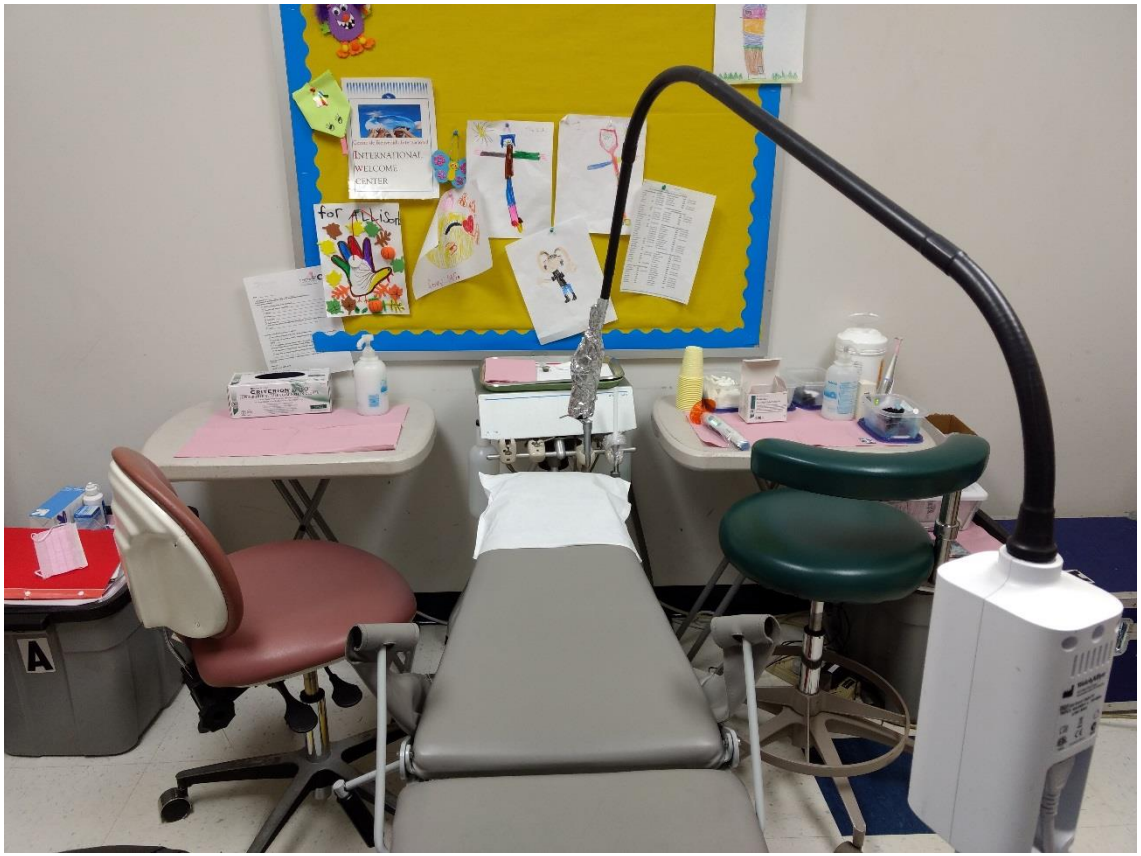
Preventive Program



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School-Based Dental Centers

Priorities in Public Health Dental Programs:

- ✓ Decrease the existing disease burden in the target population
- ✓ Prevent disease from starting in the youngest members of the population
- ✓ Complete all necessary dental treatment to achieve oral health maintenance.

SCHOOLS	2015-16			2016-17			2017-18			2018-19			2019-20			2020-21	2021-22		
	EXAMS	NEED TX	%	EXAMS	NEED TX	%	EXAMS	NEED TX	%	EXAMS	NEED TX	%	EXAMS	NEED TX	%	COVID	EXAMS	NEED TX	%
MT AIRY				347	184	53%	381	181	48%	394	145	37%	364	96	26%	*	291	103	35%
RVE	284	117	41%	305	163	53%	289	126	44%	149	59	39%	110	46	41%	*	57	29	50%
ROLL HILL	244	127	52%	431	196	45%	437	188	43%	417	179	43%	361	148	40%	*	181	80	44%
ROBERTS	451	204	45%	504	191	38%	543	186	34%	498	131	26%	620	130	20%	*	501	151	30%
ETHEL TAYLOR	*	*	*	*	*	*	267	146	55%	191	67	35%	181	54	29%	*	79	41	51%
JP PARKER	64	59	92%	158	95	60%	*	*	*	218	92	42%	*	*	*	*	134	51	38%
S AVONDALE	*	*	*	*	*	*	*	*	*	135	68	50%	137	52	37%	*	*	*	*
AMIS	*	*	*	*	*	*	*	*	*	266	120	45%	145	18	12%	*			
AWL	219	94	43%	301	127	42%	*	*	*	*	*	*	*	*		*	*	*	*
OYLER (sbdent)	248	148	59%	344	192	55%	304	164	53%	336	144	42%	372	92	24%	*			
TOTALS	1510	749	50%	2390	1148	48%	2221	991	45%	2604	1005	39%	2290	636	28%	*	1243	455	36%

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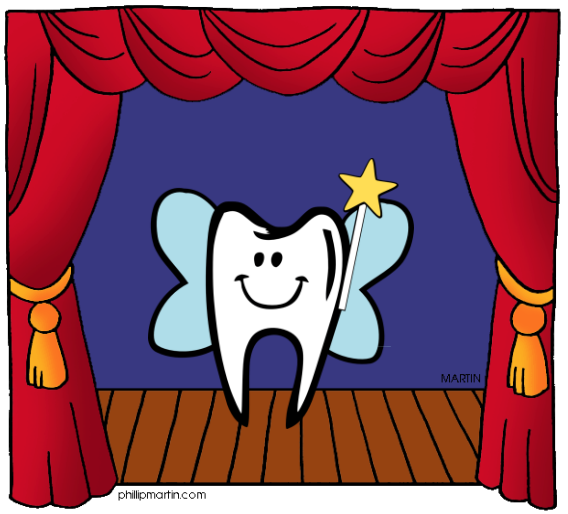
Preventive Program

- MUST have school staff collaboration
  - Need fast/reliable internet connection for dental software to work
  - School nurse is a big help
- MUST have cooperation of school staff
  - Agree to taking kids from classes
- MUST have a space to work
  - Have a place to set up the work space (stage, class room, SBHC waiting room, back hallway, closet, break room, nurses office, under the stairs)



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Preventive Program – NOT A MOBILE CLINIC

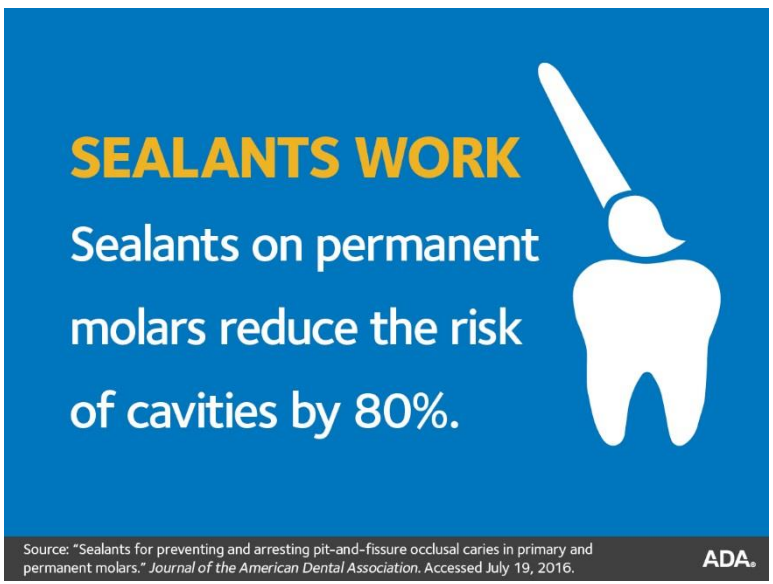
- Complete dental services inside the school
- Connect students to comprehensive dental care at a SBDC or CHC
- Families have access to our other locations at anytime

Preventive Program – NOT A SEALANT PROGRAM

- Our sealant program goes into schools to **ONLY** place sealants on 1st and 6th grade students
- No Dentist Exam or other services
- No computer hook ups

Before

After

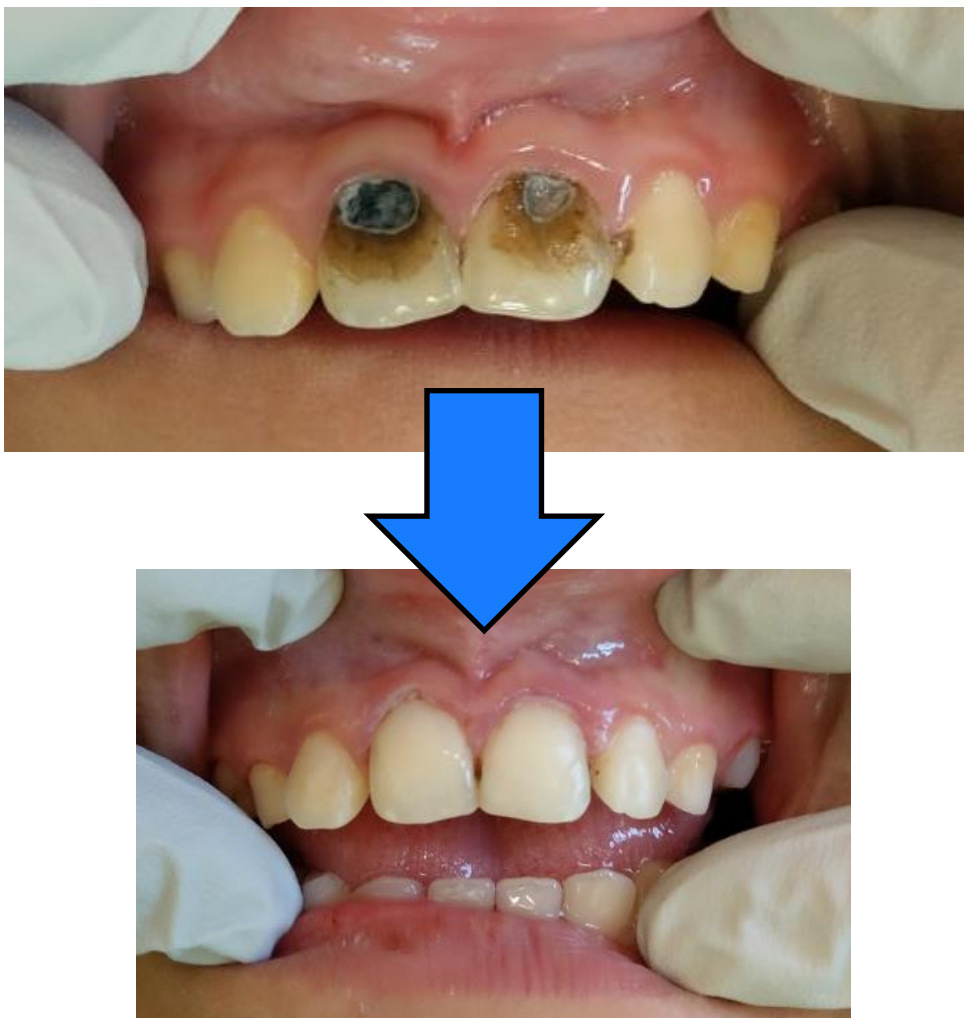


How to Prioritize

Kids with high priority go to the dental center first

DIFFICULTIES

- Not at school
- Can’t find in class
- Testing day/Field Trips
- No consent
- Kid refuses to go



Transportation

OLD WAY

- Group of 6-8 kids come on bus
- 2-3 hours later a new group of kids comes
- Kids finished with treatment go back to school
- All other kids wait until all treatment is finished and go back to school at the end of the day

SHUTTLE SYSTEM

- Group of 4-6 kids comes on a bus
- Bus heads back to school to pick up 2-3 more kids
- Bus drops off those kids and takes 3-4 kids back to school
- This shuttle continues for the whole school day

Interprofessional Oral Health Competencies

Interprofessional Educational Efforts

- *Smiles for Life*- Online oral health teaching curriculum developed by Society of Teachers of Family Medicine
  - Nation's most comprehensive and widely used oral health curriculum for primary care clinicians
  - Endorsed by 13 national organizations, and is in wide use in professional schools and post-graduate training programs.
- *Children's Oral Health*- American Academy of Pediatrics oral health website includes online training

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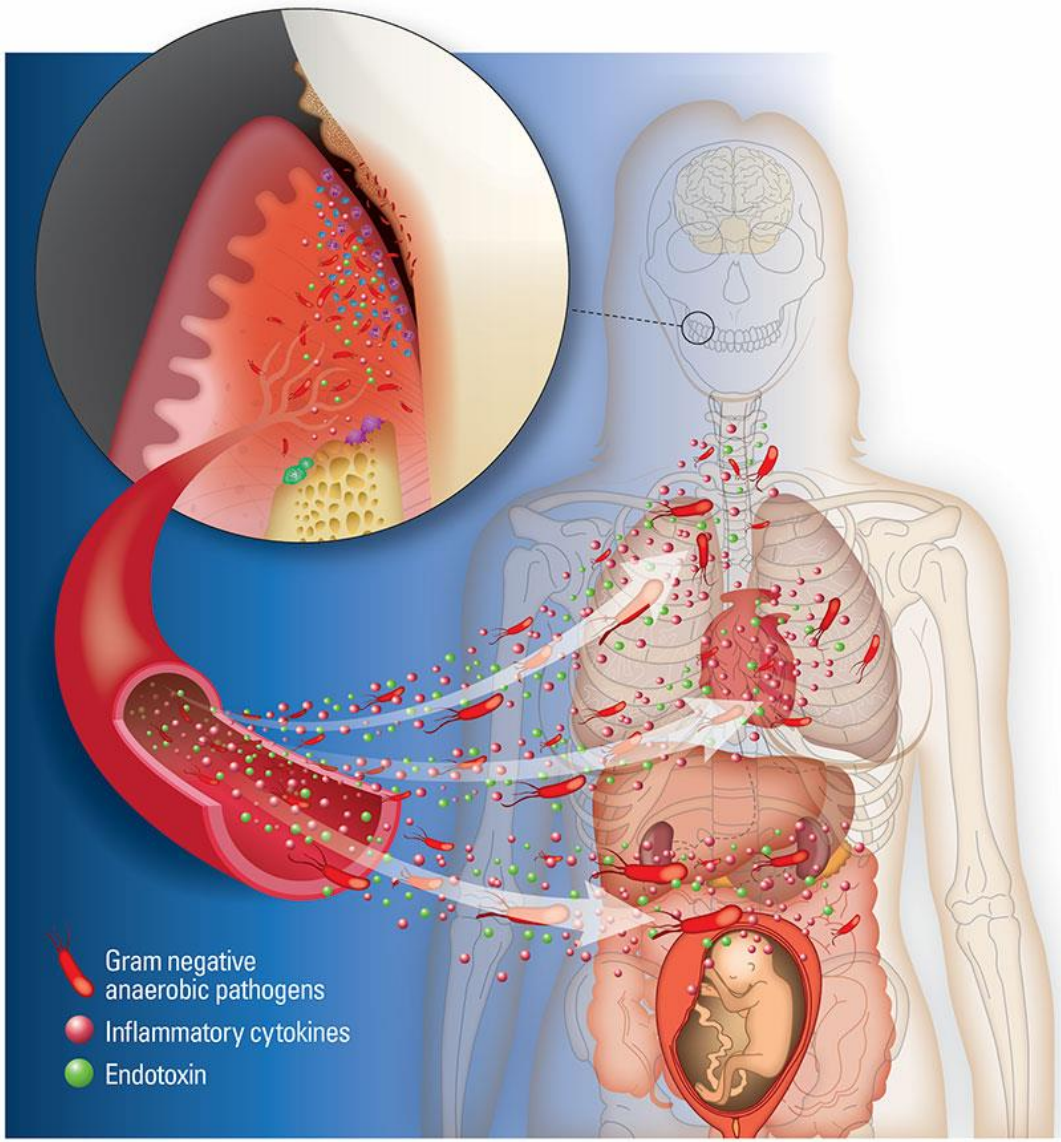
Oral health is part of primary care



Stroke

- Those with severe periodontitis have increased risk of getting stroke and periodontal treatment can help to reduce the risk. [26]

Alzheimer's Disease

- *P. gingivalis* with its toxic protease (gingipain) was identified in patients' brains with pathologic mechanism. [25]

Heart Disease

- Those with severe periodontitis may have increased risk of fatal heart attack. [15,16]
- Bacteria in the gingiva may travel through the bloodstream, reaching atheroma and causing clotting problems in the cardiovascular system. [30]
- Controlling periodontal disease can retard the progression of carotid atherosclerosis. [35,36]

Uncontrolled Diabetes

- People with type 2 diabetes are three times more likely to develop periodontal disease than those without diabetes.[13] Periodontal treatment can potentially help with controlling HbA1c. [37]
- Pathogens can be identified in pancreatic islet. [33]

Respiratory Infections

- Poor oral hygiene and periodontal infection are associated with increased anaerobic periodontal pathogens in the lungs of patients with lower respiratory track infection and pneumonia. [27-28]
- Improved oral hygiene and periodontal treatment can reduce risk of pneumonia and mortality rate. [38-39]

Osteopenia and Rheumatoid Arthritis

- Reduction in bone mass (osteopenia) is associated with periodontal disease and related tooth loss. [20]
- Periodontal pathogens can be present at the joint and periodontal disease is associated with arthritis. [18,31]

Cancer

- Periodontitis is associated with esophageal, breast, pancreatic, and colon cancer. [21,22]

Preterm or Low-Birthweight Babies

- Women with advanced periodontal disease may be more likely to give birth to an underweight or preterm baby. [17]
- Oral microbes can cross the placental barrier, exposing the fetus to infection. [32]

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Silver Diamine Fluoride

Antimicrobial liquid that is applied to cavities to kill bacteria and arrest the cavity process

- When applied to the tooth, the cavity will turn black and harden after about one week.
- Slows down the progression of dental decay (could become arrested).
  - May prevent the need for future extraction!
  - Decreases pain
- Bacteria in the cavity is killed, stopping the spread to surrounding teeth
- SDF today→ fillings at another day (often without injection for numbing).

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Silver Diamine Fluoride

Starting

- Very cautious
- Only used for select cases
- Waited to get patient/family feedback
- Only used at SBDC

Now

- Applying routinely to most caries
- Applying to early caries
- Preventive Program
- Sealant Program
- Community Health Centers

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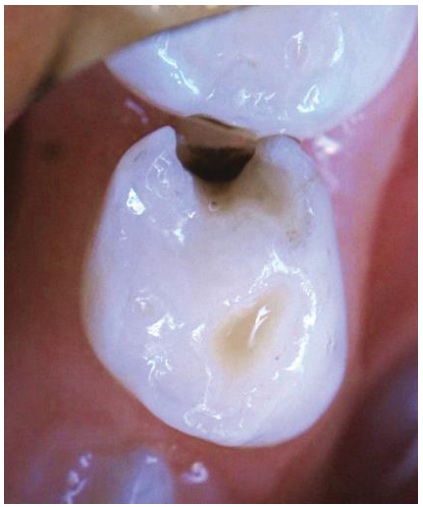
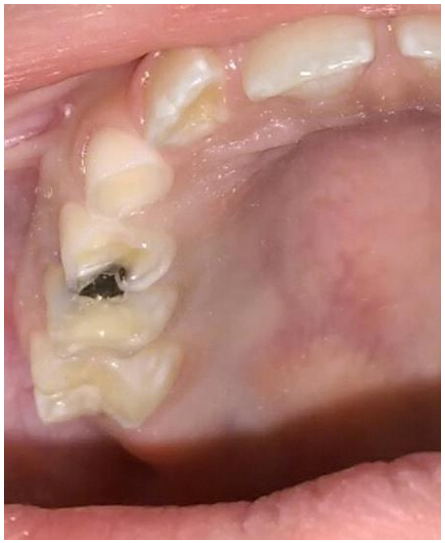
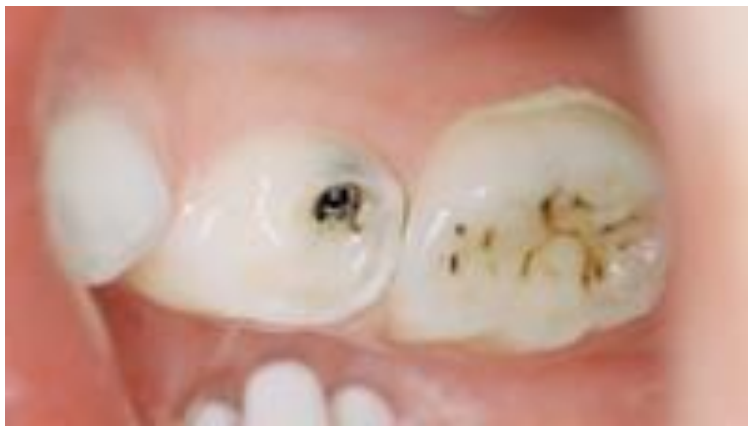
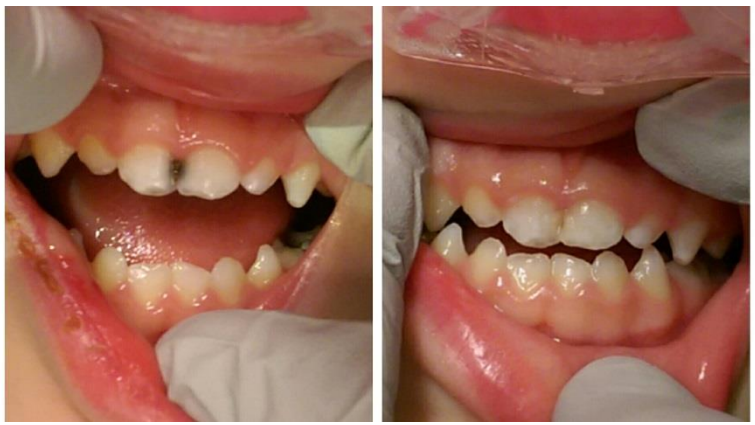
Silver Diamine Fluoride







- ONLY the part of the tooth with cavity will turn black



Self-Management Goals

Dental visits every ___ months

Family receives dental treatment

Eat healthy snacks (nuts and cheese)

Brush with fluoride toothpaste at least 2 times daily

Use Clinpro 5000, MI Paste or ReminPro daily

Limit juice, soda and sports drinks to mealtime

Use fluoride mouthwash nightly

Chew sugarless gum

Drink tap water (containing fluoride)

Floss

Use xylitol

Leave toothpaste foam in mouth at bedtime

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