



Track One: Innovative Strategies to Engage Healthcare in Cessation and Increase Provider Advice to Quit

Using Focus Groups to Tailor Tobacco Cessation Education for Dental Specialties

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Beyond the 5 A's

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[Study Aims]

- Identify dental post-doctoral and residency program dental directors for participation in focus groups to evaluate the DTCS.
- Develop tailored DTCS modules for use by post-doctoral training and residency programs.
- Develop customized teaching manuals for each post-doctoral training and residency program.
- Finalize intervention design and content.
- Evaluate the customized training modules in post-doctoral training programs.

Dental Profession and Cessation Advice

- Smoking cessation advice from health care professionals increases quit rates
- 40% of smokers attempt to quit after receiving advice from their healthcare provider (Hu, et al., 2006)

Dental Profession and Cessation Advice

- 89% of U.S. dentists view tobacco cessation intervention as an important professional responsibility (Tong et al., 2010)
- 21% of dentists are aware of the USPHS guideline for tobacco cessation or had tobacco cessation training (Tong et al., 2010).

[Dental Education - Shortcomings]

- Professional practice routines can be changed
 - Requires new learning experiences
 - Supporting behavior modeling
 - Opportunities to practice new skills.
- Dental schools are not providing sufficient didactic and clinical education to establish tobacco cessation as a routine part of daily practice.

[Pre-Doctoral DTSC]

- Comprehensive core DTCS
- Uses innovative educational technologies
 - Disseminates tobacco cessation guidelines
 - Establishes clinical competency
- Foundation for establishing dental clinicians knowledge and familiarity with this important behavioral intervention.

[Pre-Doctoral DTSC]

- Developed specifically for dentists
- Customized to reflect the dental office visit
- Fits within the context of the dental visit
- Highlights the ease with which dentists can engage in tobacco cessation counseling

[DTCS- Technical Approach]

- Innovative educational technology developed by Columbia Center for New Media Teaching and Learning (CCNMTL) to create a virtual classroom via an online course.
 - Exercises reinforce all 5 A's
 - Culminates in a series of virtual patients
 - Allows trainee to establish clinical competency in assisting the patient with the quit attempt
 - Upon course completion trainee is competent in the use of all pharmacotherapeutics

DTCS Welcome Page and Course Introduction

The screenshot shows a web browser window titled "Tobacco Cessation: Intervention" with the URL <http://tobaccocessation.ccnmtl.columbia.edu/>. The page content includes:

- Quick References:** A link to a "Pharmacotherapy Table".
- INTERVENTION:** A section explaining the purpose of the program, based on the 5As developed by the National Cancer Institute.
- Process Description:** A statement that the intervention is a step-by-step process to provide a comprehensive patient cessation program.
- Flowchart:** A diagram titled "Dental Exam" showing three stages: "PRE-EXAM", "POST-EXAM", and "HELPING PATIENTS QUIT".

Dental Exam		
PRE-EXAM	POST-EXAM	HELPING PATIENTS QUIT
Ask Identify patient tobacco users at every visit	Advise Directly urge tobacco using patients to quit	Assist Help patient to quit using behavioral & pharmacological approaches
	Assess Determine patient's level of readiness to quit	Arrange Provide follow-up contact & encouragement

DTCS Advising Video Exercise

The screenshot shows a web browser window titled "Tobacco Cessation: Intervention" with the URL <http://tobaccocessation.ccnmtl.columbia.edu/>. The navigation menu includes "Welcome", "Pre-Exam", "Post-Exam", "Helping Patients Quit", and "Resources". The "Post-Exam" tab is active, and the sub-menu "Advising your Patient" is selected. On the left, there is a "Quick References" section with a "Pharmacotherapy Table" link. The main content area is titled "ADVISING YOUR PATIENT" and contains the following text: "Advise means giving a strong, clear personalized message to quit. Here are 3 'Advise' messages to choose from. You might want to explore them all. Please decide on your choice and select." Below this text are two message options, A and B. Option A is currently selected and highlighted. To the right of the text is a video player showing a woman speaking. The video player has a progress bar at the bottom showing 00:07 out of 00:09.

Quick References

- Pharmacotherapy Table

ADVISING YOUR PATIENT

Advise means giving a strong, clear personalized message to quit. Here are 3 "Advise" messages to choose from. You might want to explore them all. Please decide on your choice and select.

A Kathy, I'm concerned about what I see going on in your mouth. Some of the tissues in your mouth are changing color and that is the direct result of your smoking. If you don't quit smoking, the tissues are going to keep getting paler and paler, which is not a good sign. That said, I strongly advise you to quit smoking.

B Kathy, as you probably already know, smoking is very harmful to your health. It increases your chances of developing cancer

00:07 → 00:09

DTCS Patient Simulation Exercise

The screenshot displays a web browser window titled "Tobacco Cessation: Intervention" with the URL <http://tobaccocessation.ccnmtl.columbia.edu/>. The main content area is titled "VIRTUAL PATIENT 1: CLASSIFY TREATMENT OPTIONS" and includes a "Reset Exercise" button. The interface is divided into several sections:

- Sections:** A sidebar on the left lists "Virtual Patient 1" (selected), "Virtual Patient 2", "Virtual Patient 3", and "Virtual Patient 4".
- Quick References:** A "Pharmacotherapy Table" icon is visible.
- Patient History:** Features a photo of Beverly Johnson, a woman with short dark hair, and text identifying her as "Beverly Johnson, Age: 40, Lawyer".
- Medical:** Lists "Hypertension" and "Gastric Reflux".
- Medications:** Lists "Atenolol".
- Treatments To Classify: 8:** A grid of eight treatment options, each with an icon and a label: Patch, Gum, Inhaler, Lozengas, Nasal Spray, Varenicline, Bupropion, and Combination.
- Your Treatment Classifications:** A row of four colored boxes for classification: "Best Treatment Choice(s)" (green), "Reasonable, Not Optimal" (yellow), "Unlikely To Be Effective" (orange), and "Potentially Harmful" (red).

[Pre-Doctoral DTCS]

- Pre-test/Post-test evaluation with Columbia University dental students
- Surveys assessed
 - Attitudes regarding tobacco cessation in dentistry
 - Knowledge of tobacco use and cessation
 - Self-efficacy regarding tobacco cessation counseling

[Pre-Doctoral DTCS]

Students had negative attitudes about dentists' ability to be successful at tobacco cessation at baseline.

- Significant improvement at follow-up.

Baseline average of 47% on the knowledge component, after the course the average increased to 82%, $t(52)=-13.105$, $p<0.001$.

- Student perception of their knowledge about helping people stop using tobacco also improved significantly after completing the course, $p<0.001$.
- Perception of knowledge improved from an average score of 2.26, indicating fair ability, to 3.49 indicating a good level of knowledge.
- Additionally, student confidence in their ability to help someone stop using tobacco increased significantly from an average score of 2.29 to 2.88, a change from slightly confident to moderately confident (Albert et al., 2012).

[Pre-Doctoral DTCS]

- At baseline most students believed that the dentist or dental hygienist should be involved in tobacco cessation activities in the dental office.
- Students had positive attitudes about tobacco cessation in dentistry with regard to the importance of tobacco cessation as a component of preventive dentistry, and the role dentists should play educating patients about tobacco use, and encouraging and discussing tobacco cessation.

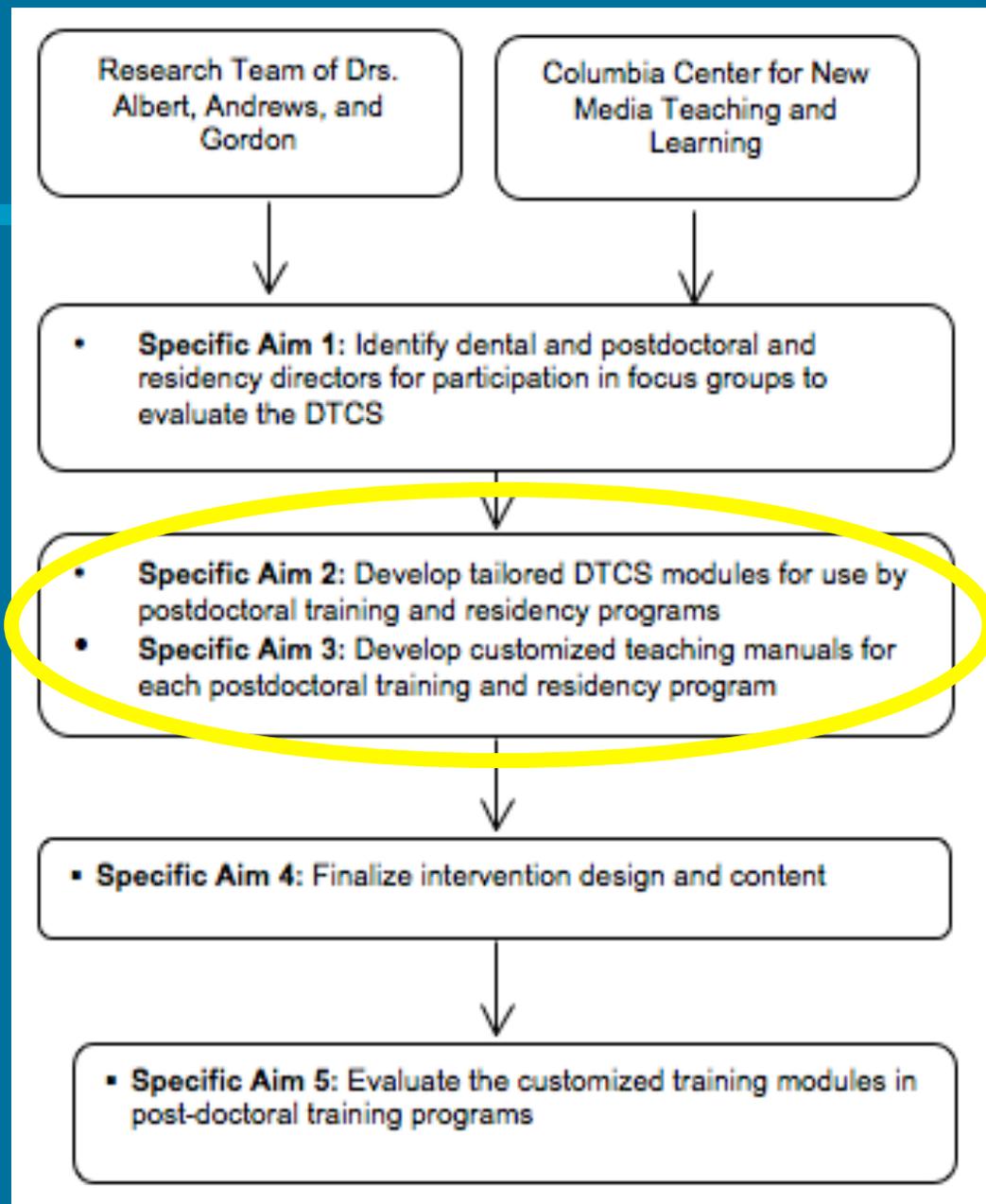
[Post-Doctoral DTSC]

- Reinforcement during the post-doctoral program needed to sustain the new knowledge acquired and to establish clinical behaviors that incorporate tobacco cessation into the office routine.
- Limited information about post-doctoral tobacco cessation curriculum or how to tailor a program for post-doctoral general or specialist dentist education.

[Developing a Tailored DTCS]

- Postdoctoral programs in Dentistry
 - General Dentistry
 - Prosthodontics
 - Orthodontics
 - Pediatrics
 - Oral and Maxillofacial Surgery
 - Endodontics
 - Public Health
- In 2010 there were 2,908 first-year trainees and residents in these programs.
 - Therefore the potential for creating effective change in tobacco education for dental professionals is great.

Project Overview



[Why Focus Groups?]

- Exploratory
 - limited existing data on post-doctoral experience
- Complex
 - multidimensional factors not necessarily suited to survey research
- Developing tailored content
 - Attempting to understand commonality among specialties and divergence

Qualitative Methods

Study Design and Sample

Content Analysis and techniques from Grounded Theory

- Simultaneous data collection and analysis
- Theoretical sensitivity

Convenience Sample

- Program residents
- Program faculty

Program Directors completed recruitment within site

Demographic and survey data collection

Data Collection

3 Sites

- Columbia University (Dental school program)
- Jacobi Medical Center (Hospital based program)
- St. Barnabas Hospital (Hospital based program)

Sessions audio recorded and transcribed

\$75/\$100 compensation for participation

Data Analysis

Iterative approach

Open/axial/selective coding & memoing

3 data coders (AW, NMW, EB)

Nvivo

Focus Group Composition

Specialty Group	Site	N
General Dentistry Faculty Residents	Jacobi Medical Center St. Barnabas Hospital (not completed)	3
Oral & Maxillofacial Surgery Faculty Residents	Jacobi Medical Center Jacobi Medical Center	4 4*
Orthodontics Faculty Residents	Columbia University Columbia University	5 7
Pediatric Dentistry Faculty Residents	Columbia University Columbia University	4 4
Periodontics Faculty Residents	Columbia University Columbia University	4 5
Prosthodontics Faculty Residents	Columbia University (not completed) Columbia University	5

* Data not included in analysis

Preliminary Survey Results

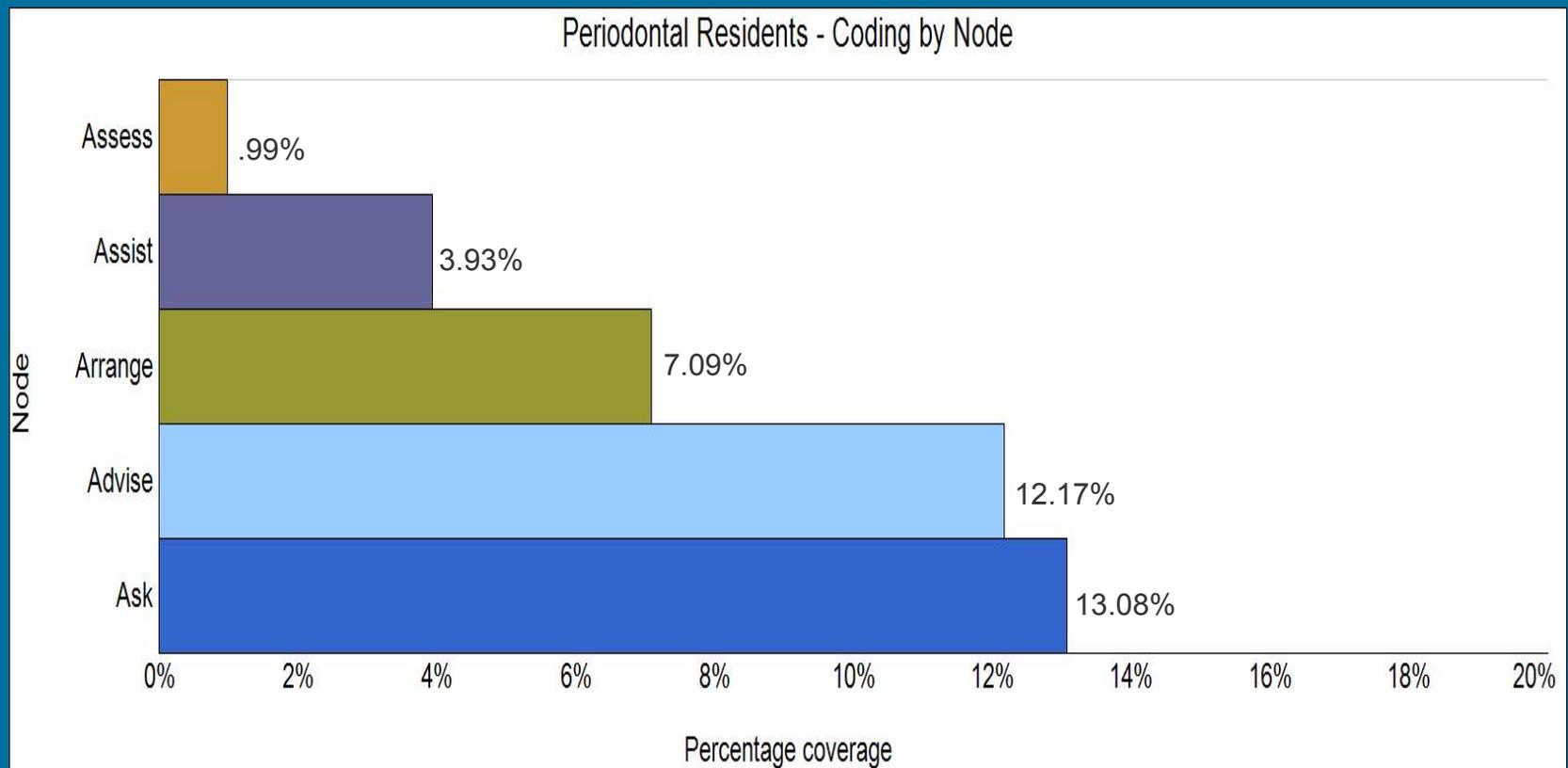
	Residents (n=21)	Faculty n=(20)
Gender	Female 57% (n=12) Male 43% (n=9)	Female 40% (n=8) Male 60% (n=12)
Average number of years post dental school graduation	3	23
Tobacco use within the past year?	0% (n=0)	10% (n=2)
Pre-doctoral training in tobacco cessation?	Yes 76% (n=16) No 24% (n=5)	Yes 30% (n=6) No 60% (n=12) Unknown 10% (n=2)
Post-doctoral training in tobacco cessation?	Yes 33% (n=7) No 52% (n=11) Unsure 14% (n=3)	Yes 20% (n=4) No 57% (n=12) Unsure 19% (n=4)
Any report of tobacco cessation activities in the past month?	Asking 57% (n=12) Advising 48% (n=10) Assessing 33% (n=7) Assisting 14% (n=3) Arranging 14% (n=3)	Asking 85% (n=17) Advising 65% (n=13) Assessing 40% (n=8) Assisting 25% (n=5) Arranging 15% (n=3)

NVivo Coding Interface

The screenshot displays the NVivo software interface with the 'Nodes' view selected. The main window shows a list of nodes with columns for Name, Sources, References, Created On, Created By, Modified On, and Modified By. The left sidebar contains navigation options like Nodes, Relationships, Node Matrices, Sources, Classifications, Collections, Queries, Reports, Models, and Folders. The top menu bar includes File, Home, Create, External Data, Analyze, Query, Explore, Layout, and View.

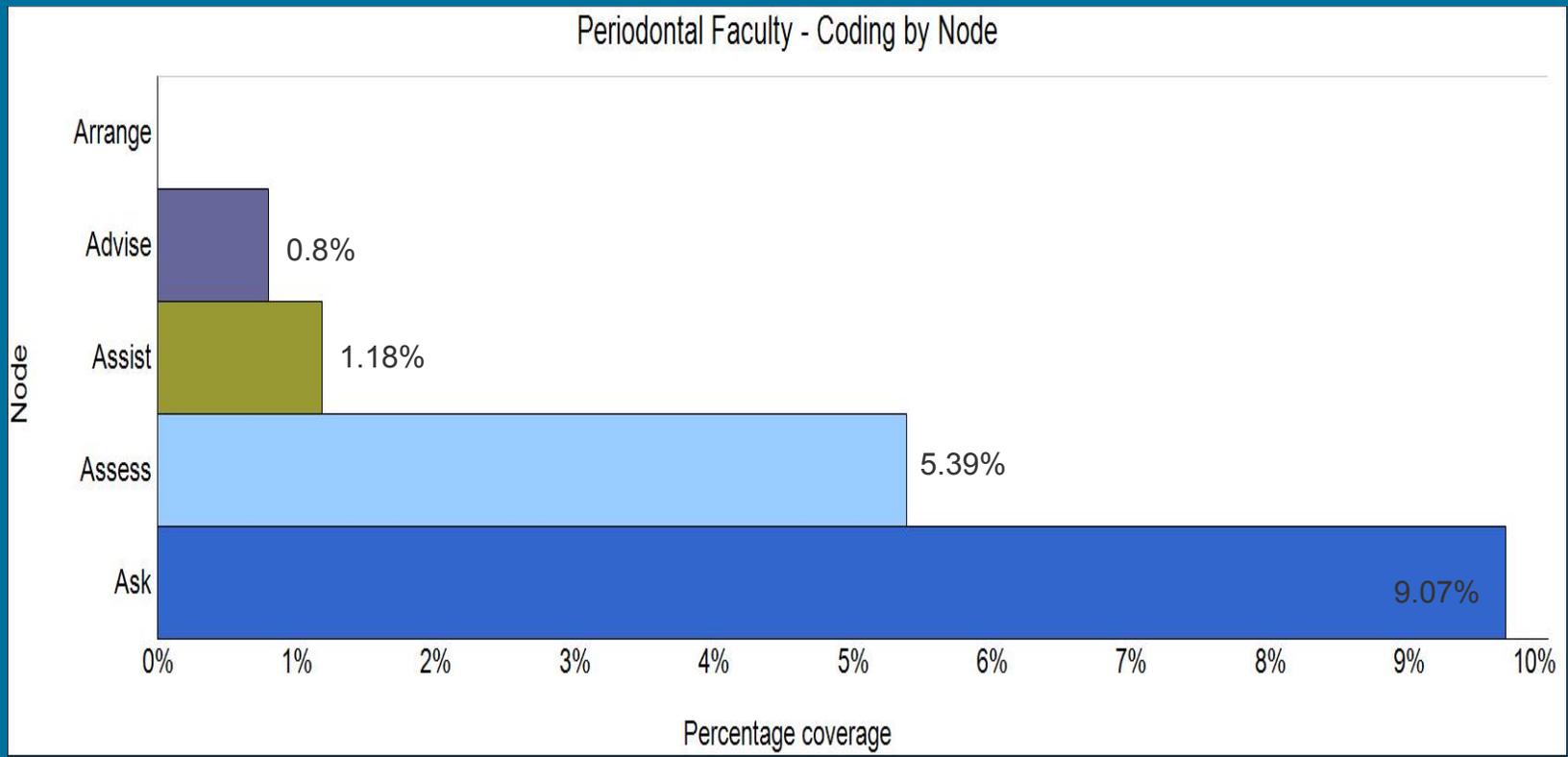
Name	Sources	References	Created On	Created By	Modified On	Modified By
Peds differences	0	0	10/16/2013 11:13 AM	EB	10/16/2013 11:13 AM	EB
Perio differences	2	12	10/16/2013 11:13 AM	EB	10/24/2013 12:40 PM	EB
Pros differences	0	0	10/16/2013 11:13 AM	EB	10/16/2013 11:13 AM	EB
DTCS general impressions	3	9	10/16/2013 11:15 AM	EB	10/30/2013 4:24 PM	NMw
Virtual patients	1	5	10/16/2013 11:15 AM	EB	10/16/2013 3:21 PM	EB
DTCS suggestions	3	33	10/16/2013 11:15 AM	EB	10/30/2013 4:36 PM	NMw
DTCS facilitating tools and resources	2	13	10/16/2013 11:10 AM	EB	10/24/2013 1:40 PM	EB
General practice suggestions	0	0	10/24/2013 1:32 PM	EB	10/24/2013 1:32 PM	EB
Oral surgery suggestions	0	0	10/16/2013 11:16 AM	EB	10/16/2013 11:16 AM	EB
Ortho suggestions	1	5	10/16/2013 11:17 AM	EB	10/29/2013 4:59 PM	Alw
Peds suggestions	0	0	10/16/2013 11:16 AM	EB	10/16/2013 11:16 AM	EB
Perio suggestions	2	10	10/16/2013 11:16 AM	EB	10/24/2013 1:30 PM	EB
Pros suggestions	0	0	10/16/2013 11:16 AM	EB	10/16/2013 11:16 AM	EB
Simplification reduction	1	6	10/16/2013 2:05 PM	EB	10/16/2013 3:20 PM	EB
Fear	3	12	10/15/2013 3:54 PM	EB	10/30/2013 4:33 PM	NMw
Finances or cost	2	4	10/15/2013 3:53 PM	EB	10/24/2013 12:56 PM	EB
History	4	48	10/16/2013 11:35 AM	EB	10/30/2013 4:08 PM	NMw
Incentives	3	18	10/15/2013 3:57 PM	EB	10/30/2013 4:18 PM	NMw
Macro level barriers	3	11	10/16/2013 11:18 AM	EB	10/30/2013 3:29 PM	NMw
Reimbursement	3	8	10/16/2013 11:18 AM	EB	10/29/2013 5:09 PM	Alw
Medication	2	25	10/16/2013 11:17 AM	EB	10/30/2013 4:33 PM	NMw
Organizational level barriers	4	20	10/16/2013 11:14 AM	EB	10/29/2013 4:35 PM	Alw
Participant demographic factors	1	5	10/16/2013 10:55 AM	EB	10/30/2013 4:36 PM	NMw
Patient barriers	3	27	10/15/2013 3:52 PM	EB	10/30/2013 4:36 PM	NMw
Patient demographics	3	28	10/15/2013 3:41 PM	EB	10/30/2013 4:36 PM	NMw
Patient knowledge or awareness	3	37	10/15/2013 3:54 PM	EB	10/30/2013 4:36 PM	NMw
Patient motivation	3	59	10/15/2013 3:54 PM	EB	10/30/2013 4:36 PM	NMw
Patient population and outcomes	3	30	10/15/2013 3:57 PM	EB	10/30/2013 4:33 PM	NMw
General practice population procedures outcomes	0	0	10/24/2013 1:32 PM	EB	10/24/2013 1:32 PM	EB
Oral surgery population procedures outcomes	0	0	10/15/2013 3:59 PM	EB	10/15/2013 3:59 PM	EB
Ortho population procedures outcome	1	3	10/15/2013 4:00 PM	EB	10/29/2013 4:41 PM	Alw
Peds population procedures outcomes	0	0	10/15/2013 4:00 PM	EB	10/15/2013 4:00 PM	EB
Perio population procedures outcomes	2	17	10/15/2013 3:59 PM	EB	10/24/2013 1:44 PM	EB
Pros population procedures outcomes	0	0	10/15/2013 4:01 PM	EB	10/15/2013 4:01 PM	EB
Patient receptiveness to tobacco cessation	3	30	10/15/2013 3:56 PM	EB	10/30/2013 4:36 PM	NMw
Professional norms	1	9	10/16/2013 11:02 AM	EB	10/30/2013 4:31 PM	NMw
Role of faculty	3	11	10/16/2013 11:32 AM	EB	10/28/2013 4:44 PM	NMw
Technology	1	1	10/15/2013 3:57 PM	EB	10/28/2013 4:42 PM	NMw
Tobacco cessation facilitators (general)	3	55	10/16/2013 1:32 PM	FR	10/30/2013 4:36 PM	NMw

Periodontal Residents Percent Coverage of the 5 A's*



*Preliminary Results

Periodontal Faculty Percent Coverage of the 5 A's*



*Preliminary Results

Tailoring Content for Periodontal Practice

Periodontal Practice Factors	Example Suggestions for Course Customization
Periodontal practice already includes a strong focus on prevention and behavioral intervention	Emphasize how tobacco cessation fits into routine periodontal practice
Tobacco use is a modifiable risk factors for periodontal disease that affects outcomes	Feature clinicians discussing the impact of tobacco use on periodontal outcomes
Periodontal practice often involves the management of a medically compromised patient	Develop a medically compromised virtual patient
Periodontal treatment often requires multiple follow-up visits	Discuss strategies for arranging for follow-up in the context of periodontal care
Surgical outcomes can be greatly improved with short-term tobacco abstinence	Present a video of a periodontal clinician discussing tobacco use and surgical outcomes with a patient

Tobacco Cessation Barriers Cluster Analysis*



Patient Barriers
tended to cluster with
structural level barriers

Clinician barriers
tended to cluster with
organizational barriers

Exception was
reimbursement

*Preliminary Results

Factors Contributing to Successful Tobacco Cessation Intervention in the Post-Doctoral Experience*

Factors	Dimensions	Examples of Facilitators
Clinician factors	Tobacco cessation confidence	Opportunities to practice behavioral counseling; formal and informal training in Assisting; manageable training in pharmacotherapy
	Tobacco cessation knowledge and skills	Appropriate formal and informal training reinforced throughout the post-doctoral experience; faculty training and modeling in the clinic
	Outcome expectations	Knowledge and awareness of patients interest in tobacco cessation; successful performance of tobacco cessation
	Perceived benefits	Didactic training emphasizing how tobacco abstinence impacts dental outcomes
	Professional norms	Awareness of dental organizations policy statements on tobacco cessation; faculty training and modeling in the clinic
Organizational support	Resources	Accessible patient information; adequate support staff; appropriate charting mechanisms; integrated medical records
	Philosophy	General administrative support for tobacco cessation; faculty leaders
Structural and contextual factors	Patient population	Patient's access to care; patient insurance status; patient receptiveness; socioeconomic position; daily stressors
	Financial constraints	Reimbursement; financial strength of the organization; allocation of resources and financial priorities

*Preliminary Results

In Participants Own Words

Dimensions	Examples of Illustrative Quotes
Tobacco cessation confidence	<i>"I don't know if I would feel comfortable really prescribing medications for tobacco cessation in my practice. I think I'd feel a lot more comfortable if I were to recognize it and make a referral to a pediatrician. Or possibly even a general dentist. But I think as an orthodontist, I would shy away from doing that myself." (Pediatric Faculty Member)</i>
Outcome expectations	<i>"You'd be surprised how many patients are waiting to be asked if they want to quit." (Periodontal Faculty Member)</i>
Perceived benefits	<i>"You know, it's valuable on your side to not have [the implant] fail. You're invested in [the patient] quitting, to make sure the treatment goes correctly. (Periodontal Resident)</i>
Financial constraints	<i>"The whole residency program, by its nature, is preparing people to go out and practice real periodontics. So if there is nothing called smoking cessation that can be a billable service, I mean you can mention it but it would definitely not attract as much attention as it would if it were, you know, a billable service. At the end of the day, I think that plays a role." (Periodontal Faculty Member)</i>

[Next Steps]

- Complete focus groups
- Complete analysis
 - Particular focus on convergence and divergence among specialties
- Finalize content
- Evaluate the training modules in post-doctoral programs

[Acknowledgements]

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