Helping People Be Successful with Tobacco Free Living – Part 2

Megan Wohr, RPH and Rowdy Atkinson, PharmD

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Jan Frederick:

Start out by introducing yourselves and telling us about your background.

Megan Wohr:

Great! Thank you very much, Jan. This is Megan Wohr. I'm a pharmacist at the Phoenix Indian Medical Center here in Phoenix, Arizona. I've been back over here since October 2011. Previously though, I was the Tobacco Control Specialist for the Indian Health Service under the Division of Epidemiology and Disease Prevention, so I've kind of dabbled in some tobacco for a few years and kind of come in and out, but have been a pharmacist here with the Indian Health Service since 2000. Would you like Rowdy to introduce himself as well in the beginning?

Jan Frederick:

Sure, that would be great! Go ahead.

Megan Wohr:

Go for it, Rowdy.

Rowdy Atkinson:

My name is Rowdy Atkinson. I'm also a pharmacist. I work over at Whiteriver Indian Hospital. I've been there, I guess, seven out of my nine years; and I'm an instructor for the University of Arizona's Basic Tobacco Intervention Program and I have instructed a lot of people and have a passion for tobacco, so that's why I'm here.

Megan Wohr:

Cool, thank you! Okay. As we discussed in our last session together, the CDC Clinical Practice Guidelines breaks tobacco interventions down into a three types. We have the Minimal Intervention, Brief Intervention and the Intensive Intervention.

The components of a Brief Intervention can be summarized in five words: Ask, Advise, Assess, Assist, and Arrange. Once a Brief Intervention is completed, then you have the opportunity to prescribe pharmacotherapy and to continue with intensive intervention.

Intensive Interventions are what we're going to focus on today. Intensive Intervention is defined as four or more visits with the total contact time of greater than 40 minutes. Intensive Interventions are more effective than Brief Interventions. They often include multiple providers, and techniques such as motivational interviewing, problem-solving, social support and coping skills are utilized. Intensive

Interventions include the established programs such as the American Lung Association Freedom from Smoking or American Cancer Society's Freshstart, as well as, other multi-session programs aimed at helping tobacco users quit.

As Rowdy mentioned in the last session, it is important to ask about tobacco use at every visit. If a patient uses tobacco, advice to quit should be clear, strong and personalized. The advice should be customized to fit the person. For example, a tobacco user who complains of chronic cough can be advised to quit as a way of improving his or her lungs, or a young mother who smokes might be willing to consider quitting as a way of helping her child who suffers frequent asthma attacks or ear infections.

Regardless of whether or not a patient is ready to quit, we need to be prepared to provide an intervention. We want to share the message of the importance of quitting to every patient. So if a patient is not ready to quit, we still want to be able to provide a brief motivational intervention, expressing the importance of quitting and encouraging them to quit. And if they are ready to quit, then we're going to start the cessation intervention and help them to continue along that trail of the quitting process.

If a patient is not ready to quit, it's important to still provide effective advice. And that can include information that is relevant, it shows emphasis on risk and rewards, identifies roadblocks, and also has repetition, so that we're sharing this at each encounter with the patient and letting them know that that if they're not ready to quit this time, we're still going to be addressing this at each visit to show them that we feel that is important for their healthcare.

If a patient is ready to quit, we can assist them in developing a quit plan. This process should take no more than ten minutes, and when developing a quit plan, we should set a quit date, provide encouragement, and help the patient identify social support, recommend the use of cessation medications if there are no contraindications, offer self-help materials, and refer them to intensive services that are more of a counseling type of aspect.

This is kind of a summary of looking at which, what happened if you were to have an intervention with a patient. This is a flow chart from the Clinical Practice Guidelines and it shows the algorithm for treating tobacco dependence. As you can see here, essentially, you have two answers: Does the patient now use tobacco? From there, we can look at the patient's willingness to quit. So if they are using tobacco, is the patient willing to quit? If no, did the patient use tobacco in the past? And if so, then we would want to provide some encouragement.

If the patient is willing to quit, then we do want to provide the appropriate treatment. And if the patient is not willing to quit, we do want to promote the motivation to quit. As you can see down to the next tier down, the patient is a former tobacco user. We want to prevent relapse by congratulating them on quitting and encourage them to stay quit. If the patient has never been a tobacco user, encourage that continued abstinence.

The impact of a physician or healthcare professional is a strong one. A physician's advice to quit, of three minutes or less, increases quit rates by 30 percent, and this is based out of the Clinical Practice Guidelines from the CDC. We also want to emphasize that the healthcare professional advice does matter. Patients report that the physician advice is the most important motivating factor for them. And when compared to no provider message at all, we can see the impact that it has. Patients who self-help, who just decide to quit on their own, their quit rates are about 10 percent. If we include other healthcare professionals such as nurses, dentists, counselors, psychologists, pharmacists, et cetera, we see an increased quit rate of about 70 percent. And then, when we get the physicians involved, we've see an increased rate of about a 120 percent to those patients. Again, this is all out of the Clinical Practice Guidelines.

Interventions by multiple providers also have a significant impact. And we can see here, if you think about the line of service for a patient, when they come in, if we're asking at triage about tobacco use, we can see that we're going to have an increase of about 80 percent. But if we're asking at triage and then the provider is giving a message, we're going to see an increase about 150 percent for that patient's cessation rates. And if we add a third tier on there, say perhaps, triage, then they see the provider, and then maybe they come to the pharmacy and we share with the patient the importance of quitting, we can actually increase that patient's success rates by 140 percent.

Now, it's not just about asking or just about the patient knowing that tobacco is bad for them or that it can be harmful to their health. Most of our patients do know that and unfortunately, the concept of – well, if you know that it's bad for you, you should just quit. There's a lot more involved than that. And if you'd look at it, that's we called a "Three-Link Chain" of nicotine dependence, you can see that there are three components that have a strong factor in a patient's ability to be able to quit. We have the biological factors, the psychological factors and the socio-cultural factors. So the three of those together provide very strong links to make it difficult for the patient or to cause relapse, I went through all symptoms, that's what we'll talk about in a minute.

The biological factor is the body's actual dependence on the nicotine drug, as most regular tobacco users are addicted to the nicotine component of the medication. See, the nicotine receptors in the brain and as you start to smoke or chew tobacco, the nicotine itself latches on to those receptors and what happens is, those receptors start to grow more and more, the brain grows more and more receptors to accommodate for that feeling of the nicotine that it gives the body. And when we go through a withdrawal symptom, it's actually almost like twinkle lights. Your body starts to crave more and more of the nicotine itself. So over time, there's tolerance to the nicotine, and that's where we're seeing that the receptors start to grow.

Withdrawal symptoms in tobacco are associated with both abrupt cessation and reduction in tobacco use. These withdrawal symptoms appear within hours of the last use of tobacco and are generally most severe within the first two weeks. It can reoccur in the form of cravings for months later. These types of withdrawal symptoms include depressed mood, insomnia, irritability, frustration, anger, restlessness. Weight gain is another one. As you all probably know, a lot of these symptoms are what cause people to relapse and go back into smoking again or chewing tobacco again.

When I was mentioning before about the twinkle lights, I was thinking about when a patient does quit smoking and they're off of the nicotine for a while, and those nicotine receptors actually kind of go dormant. So when the patient starts to smoke again, they can go from being able smoking a full pack a day and they'll stop smoking and they'll do well for months at a time; and it may have taken them years to get to smoking that pack a day. But once they quit smoking, those nicotine receptors never actually go away. So when they have the nicotine exposure back into the receptors again, all of those receptors become awake again and alive, kind of like, twinkle lights is kind of my own reference to it. So the patient immediately can very quickly go from not smoking for several months or several years, back right up to smoking a full pack if not a more a day because their brain has been designed to handle that now.

The other component is the socio-cultural side and tobacco plays an important role in our society. It may be part of identifying with a group or part of regular social activities, and also cultural practices. And as we know, traditional tobacco plays an important role in the Native American society. So it's really being able to kind of decipher the difference between what is part of the culture and what is part of what's now become the addiction process, or the overall habitual process of using the nicotine.

In discussing commercial tobacco with patients, we need to be aware of those educational differences, family relations, learning styles, age, language, religious beliefs, and those cultural norms. Unfortunately, a lot of times that we see within our Native American population and Alaska Native

population is that the commercial tobacco is being used for ceremonial purposes, and that line starts to get a little fuzzy as far as when we're using tobacco and what is acceptable then. Sometimes it's our only option and that is perfectly fine, and so we want to make sure that we're not abusing the commercial tobacco beyond the cultural purposes.

Psychological factors are actually one of the main reasons for relapse. A smoker believes that the cigarette has a positive impact and they attribute power to that cigarette, so the cigarette will become their friend. "I need this cigarette to be able to --," or "It relaxes me when--," or "It helps me to --," so these psychological factors are that strong bond that we have with the nicotine and with the cigarette. A lot of it has to do with the hand and mouth. People say that, it helps to calm me down when I'm nervous, or, if I'm getting frustrated about something, I'd go outside and I'd go smoke a cigarette. And if we can talk to our patients and let them kind of look at the link and what the emphasis that they're putting on the cigarette, we can start to help them get break away from the psychological factors. For example, if you have a patient that says, "Well, you know when I get stressed out at work and somebody is really aggravating me, I go outside and smoke a cigarette and the cigarette helps me calm down."

And the reality, if you look at the situation, what is helping the patient to calm down? Is it really the cigarette itself, or is it the fact that the patient has now removed themself from the situation that is causing the stress and they're essentially doing some deep breathing exercises to be able to calm down and remove themselves from the situation and think about things.

So really, the most important thing when you're looking at these is, really helping the patients find those links and really dig deeper than their dependence on the cigarette but why are they utilizing that cigarette, and where are the factors, and what is causing them to want to smoke at those times. And a lot of that has to do when you're first with a patient and intervening with them, is helping them to identify those. Because those are the types of things that are going to come back later to help, to cause and to probably most likely have a relapse or have a slip.

There are several types of counseling, and behavioral therapy that can be implemented to help the patient. We have practical counseling, which is more of the problem solving skills, skills in stress management. There's the intra-treatment support, so support from your clinician. Extra-treatment support, which is support from the smoker's environment. And then the aversive smoking procedures and essentially, these are ways that deter the patient from wanting to smoke again such as rapid smoking, rapid puffing or other exposure. Things that are mostly kind of -- almost repulse the smoker to not want to be able to utilize the cigarettes anymore.

The treatment efficacy is very — and so compared to no treatment at all, social support during direct contact with the clinician increases quit rates by 30 percent. Social support outside of treatment increases quit rates by about 50 percent. Problem-solving skills can help by 50 percent. The aversive smoking and the rapid smoking, these seemed pretty high to me and these are per the Clinical Practice Guidelines and unfortunately, I don't know much about how effective they are long-term. I think it's something that might be a quick-term fix for somebody, but overall to stay quit these numbers don't reflect that, and I think that that might be a pretty high assumption and that would be the most effective way to be able to treat.

Here are a few other ones as far as the types of counseling and their effects. Again, these are kind of alternate ways to be looking at it, and it really comes down to really have facilitating getting down to what we were talking about, the psychological factors, really getting down to why the patient is quitting and talking them through and things like that. A lot of these other little breathing exercises and cigarette fading, things like that, don't seem to have that much of an effect.

The intensity of an intervention plays a large role in quit rate. So we can see that minimal contact, less than three minutes, increases quit rates by about 30 percent; whereas low intensity counseling which is three to ten minutes increases quit rates by about 60 percent.

Then we have the higher intensity which is the greater than ten minutes, and as we talked about intensive interventions, greater than ten minutes and usually for more than four sessions at a time, which can increase this overall quit rate by a 130 percent.

The duration of the treatment also plays a big role, so if you see the amount time spent each time, one to three minutes is about 40 percent, 4 to 30 minutes is about 90 percent, 30 to 90, 200, 90 to 300 to 220 percent; and then you see a drop again. So you really need to weigh the amount of time that you're spending with the patient and then also, once we get beyond a certain amount of time, is it really the information that the patient is really gaining from. Are they absorbing whether -- is the message that's been given, are they really sincerely ready to quit at that time?

So in addition to the amount of time that we spend with the patient, the number of sessions that we spend with them too also helps to increase their quit rates. So if we spend two to three sessions with that patient, we see about increased quit rate of about 40 percent. If we jump that up to about four to eight sessions with the increased quit rates of 90 percent. And then more than eight sessions, showed the increase rate of 130 percent.

As we discussed earlier, there are several formats for behavioral treatment that have documented success including the self-help and the telephone and other distance counseling, so your telephone quit lines, individual counseling, and also group counseling. And a lot of that, those formats are really just based on the patient's personal preference; what they're most comfortable with. A lot of you will see a lot, within our population that they really do enjoy the group counseling aspect of it. But some people just don't have the time or the means to get to a face-to-face treatment, and something like a telephone counseling session is the perfect opportunity for them.

The cessation rate of each of these formats is as follows. So we see with no intervention, the patient has the likelihood of quitting about 10.8 percent; self-help about 12.3 percent; proactive telephone counseling is usually an average of about 13 percent; individual counseling, 16.8 percent; and then group counseling, around 13.9 percent. In those group -- you'll see a lot of the literature shows kind of a flip-flop between the individual counseling and the group counseling; and a lot of that comes down to really just having the time to spend with the patient and oftentimes, most of those counseling sessions are multiple counseling sessions. So again, we talked about the number of sessions can help to increase and that reflects to that as well.

Medication in addition to behavioral therapy has a strong impact on success rates as well. So if you look at medication alone, it runs about 21 percent success rate, but if you add the medication plus the counseling together, you see 27.6 percent increase in success rates. Compared to counseling alone, if you were just to provide counseling and no medication therapy, you would see about 14.6 percent success rate. But if you add medication to that counseling again, you're running at 22 percent.

So once the patient has quit, our journey isn't over. We need to help our patients stay on track and prevent relapse. And the way we look at it is quitting is a process, whether it's your first time to quit or your fifth, we need to give our patients the permission to go back to the doctor, pharmacist, or counselor if need be to try and quit again. We never quite know where our patients are in their quitting process and we never quite know what might trigger them to go back to smoking again. But on average is about five to seven times that it does take a patient to quit and quit successfully.

So in continuing to encourage the patient, we need to remember those five R's that we talked about earlier: Relevance, Risks, Rewards, Roadblocks and Repetition. When we talk about Relevance, we

really want to make it a personal message to the patient. That information needs to be relevant to that patient's situation. And as we discussed earlier, a lot of times especially in our professions, we're able to compare that to something that will affect their healthcare or their health status. So a client who complains of a chronic cough should be told that it may be related to smoking and may be resolved if he or she quits. Or a smoker who complains that her children have frequent ear infection, should be told that her smoking maybe contributing to her children's illness.

When we're looking at Risks, you want to ask the patient to identify potential negative consequences of using tobacco, and suggest and highlight those risks that seem most relevant to that patient. Any opportunities that we have to make the message personal will have a huge impact in the end.

We can help them to identify the short-term risks, so whether it's -- and each person is different as far as what they will react to but maybe -- smoking stains their teeth and they're self-conscious about that, or the exacerbation of their asthma is really starting to get to them now, or perhaps there is impotence involved. So the things like that that really kind of hit home with the patient help them to really motivate to quit.

We also want to look at the long-term risk and those are little bit harder for the patient to see first hand, they can't really look in the mirror and see the future, but at the same time, we want to talk about heart attacks and strokes, lung and other cancers. Maybe they have other people in their family that have had these types of medical conditions before and they're afraid of it happening to them and you can certainly help to identify some relevant risk there. Also chronic bronchitis or emphysema, things that they're not really experiencing right now but maybe they are starting to see a few symptoms that you can help to point out and kind of show the pathway that they're leading into right now.

The other is environmental risk. Who else are they having an impact on? You're increasing the risk of lung cancer for your spouse and your children, increased risk for your children for asthma and respiratory infections or ear infections. Also, higher rates of tobacco use in children of smokers as compared to children of non-smokers, we see more children that use tobacco that have the access to them at an earlier age.

Along with all of the negatives, we also want to provide some insight into the Reward aspect of that, and really kind of help that patient identify what those rewards would be. Ask the patient to identify potential benefits of quitting tobacco, suggest and highlight those benefits again that seem most relevant to that patient. And together, work to identify those individual rewards for that patient, whether it be improved health, their food might taste better, improved sense of smell, helps to save the money, allow them to feel better about themselves, their car, their home, everything will smell better, whatever again is relevant to that patient.

The other thing to remind the patient, and this one is hard to read unless you open up the slide completely on your screen. Now, if you click the full screen button up on the top there. Is the immediate impact of quitting smoking are very high. In 20 minutes later, after not using tobacco and being affected with nicotine, your pulse rate and blood pressure drop to the levels they were before you started smoking. Within 10 hours, the levels of oxygen and carbon dioxide in your blood return to normal. Within three days, your lung capacity begins to increase. Within four years, you will have reduced your risk of heart attack to that of a non-smoker, and after 10 years, you have reduced your chances of dying of lung cancer to that of a non-smoker.

So when you put those in terms like that, it really has a significant impact and it really shows the patient that no matter how long they have been smoking for, or how old they are, there really is a chance to better their healthcare, better their health.

We also understand with all of these risks and rewards that there are Roadblocks, so we need to make sure that we help the patient identify and address those barriers to their cessation. Is it the withdrawal symptoms? A lot of times I'll have patients that will come in and be ready to quit and this is their third or fourth time and they'll tell you that, "You know, I quit smoking a few years ago and I tried really hard and I quit for a couple weeks, but I became such a bear that my husband or my wife did not -- wanting me to start smoking again because the withdrawal symptoms were so bad."

A lot of our patients are afraid to fail, maybe they have already tried two or three or four times, and this one could be it, but they're just afraid of letting themselves and their family members back down again. Looking at weight gain, they don't like the feeling of gaining the weight that they do when they quit smoking and the weight gain is a mix of things. A lot of times the smoking, you lose flavor of the food, so people don't eat as much as they would be otherwise. And then also, nicotine is a smooth muscle relaxer, so it really does help to kind of smooth the GI tract and it tends to decrease constipation and things like that. So we can talk to the patients about ways that we can differ from the weight gain whether if we choose the next exercise regimen as a way, as a coping mechanism, or we help choose the right food or we help to replace a water bottle for that hand-to-mouth motion versus having the cigarette in your mouth, or we always say about chewing gum.

Or, the other hand-to-mouth one, a lot of times that we'll use is the cinnamon stick. So, it has that same size of a cigarette, it has that same harsh flavor almost to it, but the patients can hold it like a cigarette and play with it like a cigarette and it takes that place.

Other things are roadblocks, that people are just afraid of the lack of support. Either they don't have any in the beginning because the other people around them are all smokers, or maybe they have tried to quit so many times and they feel as though people have given up on them. So helping them to identify their support systems is really, really important.

Fighting depression, again, another one of the withdrawal symptoms that we can talk to with the patient. That's where the medications can come into play too, because a lot of those can help to offset some of the depression and the withdrawal symptoms from the nicotine.

And also just the pure enjoyment of tobacco; people like to smoke, and it's hard to take that away from them. We talked about it earlier even; still that cigarette is always there for them. They enjoy that cigarette. They look forward to that cigarette after they eat. They look forward to that cigarette when they walk out the door after work. It's a real relationship that they have with that.

But the most important thing that we can do for our patients is to be Repetitive. Repeat the motivational intervention every time they visit the clinical setting, inform the patient that they will be asked at every visit about their tobacco use, and share that health message with them at every time.

And this you've seen before, this is another diagram that Rowdy -- the model that Rowdy showed at the last one, we just never quite know where the patient is in this cycle. They may be not ready to quit but now all of a sudden, they're at a point where they're thinking to quit because maybe one of their relatives had a heart attack and now they realize that, "Really, I should be taking better care of myself." Or maybe they did quit and they're down at the bottom of that circle there and now, something tragic has happened in their life and it's caused them to revert back to smoking again because smoking is the one thing that helps them to relax or to cope. Maybe they are in the stay quit stage, and they're really working towards the last – towards termination where they're going to stay quit forever, so we want to continue to encourage that. Or maybe, they're about to relapse. Again, we want to be there to share that message and encourage that they don't fall into that relapse mode. Rather than just asking once a year, as part of our GPRA measure, we really should be asking at every visit to make sure that we have caught those patients.

If they are ready to quit, making sure that they're ready to -- asking them the next question of, "Are you ready to set a quit date in the next 30 days?" Because evidence shows that those that are ready to quit in the next 30 days and are willing to commit to that are going to have some of the highest success rates.

Along with that is preventing the relapse. With that, we want to provide positive reinforcement, encouragement, discuss the process of relapse and show them that they're not in this alone, that oftentimes there are people do relapse. Again, it takes five to seven times our patients to quit on average. And there are a lot of difficult situations and events that will pop up and you'll have to work through with them. That's why the behavioral component is so important to helping to treat tobacco dependence.

We also want to help that patient develop strategies for handling how they're going to get through all of these. Avoidance, whether it's in this aspect, if you have a patient who always has a group of people at work that maybe they smoke with. How are they going to step themselves out of that situation? And a lot of times that I worked with our patients is role playing. So, if a patient can play over in their mind how they're going to handle a situation before it happens, like perhaps it is a work break where they can go outside and if they can put that in their head and start to handle it in their mind over and over, how they're going to handle it. When they are actually put into that situation, they don't have that deer in the headlights feeling where they're like, "Okay, well I'll just smoke this time and next time, I'll figure out how to handle it."

We need to let our patients be able to anticipate how they're going to handle those situations. Avoidance is great but it's not always the option. And then also providing self-help materials. They are just bombarded with the amount of information that's out there these days whether on the Internet or brochures. There's so much paperwork out there. I always tell my patients, you're going to get a lot of information from me throughout our treatment process and a lot of it is going to seem like it's repetitive, but every now and then, there might be just that one little thing that you pick up on that that is going to be the key to helping you quit successfully.

So along with the prevention of the relapse, and the counseling session is the recommendation for pharmacotherapy. Rowdy's going to take over from here and discuss that aspect with you all.

Rowdy Atkinson:

Thanks, Megan!

I wanted to highlight just a couple quick things that I thought were super important. Dr. Bullock, when she presented at the last session, talked about a trauma score, I think that was what it's called. There's a very high trauma score rating for our patients, and some of them use tobacco as a coping mechanism and to mask depression and some of these other mental disorders caused by trauma in the past. So, as we talk about pharmacotherapy and we talk about quitting smoking, it's really important to recognize that there will be quite a few patients that may uncover some of these severe depression and some of these severe disorders that we want to be able to be prepared for that and make sure that, you know, if they need counseling for mental health, that we can be able help treat that.

The other thing is as we go and hear people's experiences on quitting, there is a genetic link to addiction and each person will have a different experience. So, you know, it always frustrates me when I hear somebody that used to be a two-pack a day smoker saying, "It's all willpower. All you got to do is quit. I did it first time." A lot of it is a lot of willpower but there are some genetic links. So each person's experience with quitting is a little different than the next and some will require pharmacotherapy.

Pharmacotherapy does double and sometimes triple the rates, the quit rates, compared to placebo. The patients that attempt to quit, they should be encouraged to use effective therapy for smoking cessation. We'll go over a couple of instances where pharmacotherapy is actually contraindicated. We'll go over those in a later slide.

The two important points to remember is pharmacotherapy can double and sometimes triple our chances of quitting, and pharmacotherapy -- not just your two pack a day smokers but -- pharmacotherapy can be successful for those that are half a pack a day smokers. It covers a broad range, it's not just for those hardcore smokers.

Pharmacotherapy is effective for low as well as high levels of psychosocial treatment intensities. So, the importance of pharmacotherapy and counseling, that's so important that both of those increase chances of quitting separately above placebo. But combine those two together and you've increased your chances even further. As a result, counseling should be offered to all patients.

Now, when we talk about the different products, it's really important to be able to present to your patients, understand what different therapies would be right for them. But patient buy-in is so important as we talk about these different items, to be able to say that they qualify for these three different medications and be able to explain to them what they are and how they work and some of the side effects, and be able to help them make the decision or have them make the decision of which one would be best for them.

Here are the available; we call them NRTs, which just stands for Nicotine Replacement Therapies. We'll go over them in greater detail but as you can see from this slide, there are similar abstinence rates. The nicotine spray actually shows the highest on there, but depending on what study you look at, they tend to be pretty similar across the board. These are all what we call first line agents and can be used depending on a number of factors. But definitely, patient preference is a huge buy-in there.

The other therapy besides the nicotine is the Non-Nicotine Replacement, the NNRTs. As you see there, they have a very similar abstinence rate as well. Again, we'll go through these in further detail in just a little bit. I'm going to highlight a couple of things on the dosing. Nicotine has effects on the heart and the fetus. As a result, those are some contraindications post-MI, unstable angina, arrhythmias, and pregnancy.

Highlighting the dosing, nicotine gum comes in a 2 and a 4 mg piece. Those that are heavy smokers, that smoke greater than 25 cigarettes a day, those are your 4 mg recommendations. Anything under that, they can start with 2 mg and they can chew a piece every one to two hours for six weeks. And then, there's a tapering off point from there.

My brother actually tried the gum for the first time and he told me how poor it worked, and found out that he was just chewing the gum like you'd chew any other gum. This is an important point because you are supposed to chew it until there is a peppery taste to it and then you park it in your cheek. As you park it in your cheek, that's when it absorbs through the mucosa there into your blood stream. So he was basically increasing his chance of side effects swallowing the nicotine and not getting much benefit. So proper education can go a long way, and oftentimes-poor education is the most common cause of these treatment failures.

Nicotine patch, this comes in a number of doses. There's actually a 16-hour dose patch available. We have the 24-hour here. It's important to note if patients are having insomnia and they're having difficulty sleeping to be able to let them know to either go to the 16-hour patch and remove it at night, or even their 24-hour patch, they can remove it at night but they'll want to put it on first thing in the morning because they'll have some withdrawal symptoms when they wake up because they'll be without the patch for that eight to ten-hour period.

The nicotine inhaler, this right here is a 4 mg per cartridge. We'll actually briefly go over what that looks like and how it's put together. With that one, 6 to 16 cartridges a day for three to six weeks, and then tapering it off. It's kind of neat because it kind of has the shape of a cigarette and they can puff on it so it gives a little bit of that hand-to-mouth type coordination that sometimes feels important when people are trying to quit. They miss that, so that might be a good option for those types of patients.

Nicotine nasal spray, this one is absorbed through the nasal mucosa. One to two sprays each nostril every hour for 48 weeks and then they taper off from there.

The last nicotine product is the nicotine lozenge and this actually is a dose based upon if they are were waking up, one of the greatest signs of addiction is when somebody wakes up, they've got to have a cigarette right away. So this one is actually based upon how quick they need a cigarette when they wake up. If they need one less than 30 minutes after waking, then they'll do the 4 mg lozenge. If they need one greater than 30 minutes, then they'll do the 2 mg lozenge. So they can actually suck on that lozenge every one to two hours for six weeks and then taper from that point.

So the Non-Nicotine Replacement Therapy dosing, we spent a lot of time on those nicotine products. There's a ton of them available and again, we'll go over those further. But the Non-Nicotine Replacement, I think it was 1997, the Bupropion, which is the brand name of that is Zyban, that's actually a FDA approved medication. It takes about five to seven days for this medication to actually reach steady state levels. As a result, we start it out once a day in the morning for three days and then we increase it to twice a day. But they need to wait at least a week before they start to quit, because those steady state levels will not be there. Many will wait a week and some will wait two weeks just to make sure that the medication is in the system. If you're not familiar with this medication, it actually is an anti-depressant as well. And so, this is a great medication if somebody has underlying depression, to be able to offer this for them, it might kind of kill two birds of one stone, so to speak.

The second non-nicotine replacement therapy that's approved as a first line agent is our Chantix, which is Varenicline. This is the first non-nicotine replacement drug created specifically for tobacco cessation, approved in 2006. This one is not recommended in pregnancy, neither is the Bupropion. So we need to make sure when we have patients that are pregnant, there are not a lot of great options. We will actually address that in a little bit as well. The dosage there is in front of you, .5 mg daily for three days, then you would taper it up until you get to a dose of 1 mg twice a day. You can discontinue the tobacco use after seven to 14 days, and then continue that medication for 12 weeks. If they are successful, you can increase that for an additional 12 weeks.

This is just a highlight of some of the tobacco products out there, and some of the rationale behind the nicotine dosing. One cigarette equals to roughly 1 mg of nicotine. One dip or two, 3 mg to 4 mg. A cigar is way up there at 10 mg to 20 mg of nicotine. Then Bidi or Kretek is of 2 mg to 3 mg of nicotine.

So for the sake of time, we're going to cruise through and then I'm going to hit the highlights of each of each of these nicotine products. It's kind of hard to see this anyway, even on the full screen, but the nicotine gum, as I said, you need to chew that thing up until you feel the peppery or minty taste, park it in the cheek and you can leave it there until that taste goes away, usually one to five minutes, then you repeat the process. You can keep doing this for up to 30 minutes. And again, that's a really huge counseling point. Some contraindications, or at least precautions are people with TMJ disease or dental work, or dentures. Those are people that maybe the lozenge would be a better choice for them, wouldn't have that chewing motion.

The special circumstances under the precautions there, the special circumstances groups, these are your light smokers, those that smoke less than ten cigarettes a day. Adolescents, there's actually no proven method for adolescents at this point. Pregnant women as well are in this special circumstances

group. And chewing tobacco patients that chew -- there's no evidence behind these nicotine products – it doesn't mean we can't use them. But as far as approval and evidence, it's a little bit lacking there. Side effects, pretty much what you would expect from chewing; mouth soreness, jaw aches, people swallowing the nicotine getting nausea and vomiting.

The nicotine patch, we kind of covered that, but some of the most important points from this slide is just making sure that the area is clean and relatively hairless that they put the patch on. They can apply the patch in a number of different places and usually the package insert will highlight those, anywhere from the neck to the waist, usually the upper outer arm. Again, there's a number of places they can put it, but really important is that they rotate the site as well. Just to reiterate that if they do have some kind of insomnia, that they make sure that they remove that before bed.

The nicotine lozenge; this actually have some advantages over the gum. It's easier to use because you just suck on the lozenge. You can also use it with patients that are struggling with the TMJ, the poor dentition or have dentures, because all they got to do is suck on it. One of the precautions is it does contain phenylalanine, 3.4 mg per lozenge. This is mainly just a concern for people that have PKU or phenylketonuria. It's a rare disorder but if they do have it, they'll want to likely avoid this product.

The other thing that I didn't mention on the gum, but also applies to the lozenge, is you shouldn't be eating or drinking for about 15 minutes before or during the use.

It looks like we lost our slides, but the nicotine nasal spray is the next one here. This one, you can actually use this, two sprays equal about 1 mg of nicotine. You can do up to 40 doses a day, five doses an hour. The side effects are pretty predictable as far as irritation of the nasal passages, nasal congestion, some throat irritation, changes in smell. You want to advise your patients to avoid swallowing or inhaling; those will increase the side effects as well.

So here's the nicotine inhaler. As you can see from the picture, there's actually a nice, when you put the plastics together, you get this cigarette-type looking thing. You put the cartridge between there and on each side of the plastics, you have a poker that pokes holes into the cartridge and then they can actually puff on this just like they're smoking a cigarette. One cartridge delivers 4 mg of nicotine over about 80 inhalations. It says in there that it increases the odds of quitting by 150 percent, which is pretty impressive. I believe the abstinence rates that were listed were about 30 percent. This one is prescription only, which is different from the gum, the patch, and the lozenge, but is definitely worth trying especially if you have that hand-mouth coordination.

Bupropion or Zyban, I think we've covered this pretty well already. A couple of side effects: insomnia, dry mouth, shakiness. There are some things you can do if you're having a patient experiencing insomnia. They can take the first dose early in the morning and then the second dose maybe in the mid-afternoon to avoid some of those side effects of insomnia. Dry mouth, you can encourage your patients to suck on lozenges. So, you can potentially deal with some of these side effects just with some counseling. It does carry that seizure risk. It does lower the seizure threshold, so it's important to counsel your patients on that. There are some contraindications. One of those is seizure disorder but there's serious head trauma, alcoholism, and use of MAOIs.

Varenicline or Chantix, many know this one. I hear some really good things and then I hear people just scared to death about the risk of suicide and the black box warning that's associated with the psychiatric illness there. That risk is very low. They see it just as much in people that don't have a history as those that do. It needs to be talked about with everybody and it needs to be -- it is a big deal if that happens to you or your relatives. Albeit a low chance, they need to understand the warning symptoms and be able to have family recognize those as well. The other thing that's really important to note is the changes in dreams. A lot of people experience a change in dreams and then, the nausea is pretty high, about 30 percent. That's tolerable and they can even lower the dose if they need to if it's

too intense for them. You can take this one with a full glass of water and with food if needed. They can if they start this Chantix before they actually quit and then work that dose up, and then usually quit about a week later. This one's unique because it binds to the nicotine receptors in the brain.

We've looked at these abstinence rates. The highlight from this is just making sure to know that there is evidence for combining the therapies and that can increase your abstinence rates, especially your high, two pack a day smokers. There is evidence for using a nicotine patch with a PRN gum or lozenge. The patch can be covering the basal symptoms; the gum can be covering the breakthrough symptoms, or the lozenge or the spray.

I'm not even going to go over this, Clonidine and Nortriptyline. These are second line agents. I would only use those if you absolutely had a great indication for Clonidine or Nortriptyline. I would try all the other ones that were appropriate for the patients before trying these, unless they were needing these medications for other reasons.

This highlights just the delivery system. I'll let you review that on your own as you download the slides. We've talked about the social circumstances to consider; the light smokers, adolescents, pregnant women, smoke with tobacco users. Pregnant women, even though they are already getting nicotine from the tobacco, there are still some questions on the nicotine itself from the patch and those other nicotine products. That needs to be a conversation with the doctor and at this point, isn't recommended or approved by the FDA.

Electronic cigarettes. I'll let you review that on your own for the sake of time, but there's a lot of buzz about it. The FDA does not endorse it at this time.

So here's the conclusion of our presentation. I appreciate your patience with the rush at the end. Commercial tobacco is harmful, addictive, and every effort should be made to discourage its use. Knowing and using the 5As is an easy and professional way to discuss tobacco cessation and continued abstinence from the use of commercial tobacco. There's no such thing as a failed quit attempt. Quitting is a process and should be remembered by both the patient and the providers. Counseling and cessation medications play a valuable role for patients that want the best chances of quitting.

Jan Frederick:

Well, thank you, Megan and Rowdy! We really appreciate you sharing the information with us today, a lot of detailed information.

We only have one question in the chat and that is regarding the use of electronic cigarettes. Do we want to take one minute and back up and let you go over that with a little bit of detail, Rowdy?

Rowdy Atkinson:

Yeah. So, the biggest thing is there are inconsistencies in the nicotine delivery as well as the FDA, I think it was 2009, found small amounts of carcinogens. This was the Diethylene Glycol and the Nitrosamines. That was the main reason that they had not approved it at that point. They're looking at studies to address its safety. It makes sense. In fact, as I was reviewing the inhaler, I was feeling like it was a very similar product. The e-cigarettes, what they do is they vaporize the -- with a heating coil, they vaporize the nicotine and that's what they're smoking in, and they're breathing in is that vaporized nicotine. There is a little light on the end of it, the LED indicator that makes them feel like it's lighting up as they breathe in. So it's a pretty interesting product.

The hard thing is there are a lot of other first line agents that I would recommend over something that has some potential harm. That being said, if a patient did not want to try any of those and they wanted the e-cigarettes, as long as they're aware of the potential harms, the risk of smoking commercial tobacco is much, much higher, and that is my opinion, of course, than the e-cigarettes. I would be cautious. I hope that answers your question.

Jan Frederick:

Thank you.