Million Hearts® and Cholesterol
2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults:
Review of Case Studies

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11:30-12:30 pm CST/ 12:30-1:30 pm

Coordinator: Welcome and thank you for standing by. At this time all participants are in a listen-only mode throughout the duration of today's conference. Today's call is being recorded. If you have any objections you may disconnect at this time. Now I would like to turn over the meeting to Julie Harvill. You may begin.

Laura King Hahn: Yes. Hello. Hi, it's Laura King Hahn. I'm the program initiative manager for the American Heart Association working to support the Million Hearts Initiative. We're very excited about this upcoming webinar and we're thrilled by the level of (unintelligible) today.

Before we begin I just wanted to go through a few housekeeping items to get us started. You will see on the screen, at the top right-hand corner, a piece of paper that looks like - an icon that looks like three pieces of papers. This icon, if you click on it, will show the handout as well as the slide deck for your deck, for you to download.

Towards the top left-hand corner you'll see a Q&A, and we will be asking for everyone to submit their questions online, and we will answer them at the end

of the call. Before we begin I'm just going to go through a bit of an introduction and here's our agenda.

We're going to go through a little bit of what is the Million Hearts and then we will segue into our presentation on the 2013 ACC/AHA Guideline on the Treatment for Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risks in Adults.

I'm pleased to welcome Dr. Neil Stone who is a cardiologist at Northwestern Memorial Hospital who has a special interest in lipid disorders. He is the medical director of the Center for Vascular Disease at the Bluhm Cardiovascular Institute and was named the now professor of medicine in 2012, in preventive cardiology at Northwestern University's Feinberg School of Medicine.

He is a seasoned and award-winning lipidologist with more than 35 years of experience in the Chicago Land area. Dr. Stone opened Northwestern Memorial Lipid Disorders Clinic in 1974 and directs the Suzanne and Milton Davidson Lipid Disorders/Metabolic Syndrome Clinic.

Dr. Stone has a master’s - he is a master of the American College of Physicians as well as a fellow of the American Heart Association, the American College of Cardiology and the National Lipid Association. He has extensive experience on national guideline panels for lipid management. He is the chair of the 2013 Cholesterol Guideline for Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risks for Heart Attack and Stroke.

At the end of his presentation we will take questions and give time for final remarks. You will also find within the handouts a number of downloadable materials for your use.

The Million Hearts Collaborative is actively engaged with the CDC to move forward the priorities of the Million Hearts Initiative. With that, Million Hearts is a national initiative that was launched in 2012 by the US Department of Health and Human Services.

It is co-led by the CDC and CMS and focuses its efforts on federal agencies, states, communities and individuals to reduce the common goal of preventing one million heart attack and stroke by 2012.

The HHS has asked CMS and CDC to bring together their collective strength to lead this initiative and ensure the coordination of public health, clinical care and policy approaches for this complex problem.

In order to prevent a million heart attack and stroke, we know there is work to be done in changing the environment in which we work, live and play, and in achieving an excellent health care.

By increasing smoke-free environments, decreasing sodium in the food supply and eliminating trans fat, we will change our environment in ways that will keep people healthier and less likely to need healthcare.

In addition to changing the environment, we also need to help patients, health care professionals and systems to achieve excellence in the care that they deliver.

In the clinical arena, we can reduce heart attack and stroke by focusing the attention on patients, health care professionals and systems in which they work on the ABCs, ask them when appropriate, blood pressure control, cholesterol management and smoking cessation.

We want to harness the power of health information technology to improve health outcome and develop testing and deploying new models of care that recognize and reward outcomes and value.

As an agent we can do much better. For certain segments of the nation the burden is even greater. As we work on changing the environment and optimizing care, we need to make sure we are addressing the needs of those who are disproportionately affected by cardiovascular disease.

And this is just a slide that just does an overview of the ABCs that we're talking about here. Aspirin for those who have had a heart attack and stroke, who are taking aspirin; blood pressure for those who have hypertension and need to be adequately controlled; cholesterol, we're looking at managing the people who have to effectively manage their cholesterol and smoking, trying to encourage people to quit and get the help that they need.

This slide just illustrates the targets for the Million Hearts Initiative as a whole. And today we're focusing on cholesterol management and the clinical target moving from our baseline measure of 33% adherence to a clinical target of 70%.

And with regards to those who are at greatest risks, we have a few examples here that illustrate it. African-Americans develop high blood pressure more often at an earlier age than the whites and Hispanics. There are nearly twice as many African-Americans than whites to die early from heart disease and

stroke. An American Indian and an Alaskan native die from heart diseases at younger ages than other racial and ethnic groups in the United States.

This is just a review of the clinical quality measures in which many of you on the phone today are familiar. And with that, this calls action, to get involved, be engaged in the Million Hearts. You have a couple of opportunities. You can certainly subscribe. We encourage all of you to subscribe to our e-updates and become engaged in the Million Hearts Initiative as a whole.

And, with that, Dr. Stone will be presenting on what to do about cholesterol. Risk assessment is a start, not the end of the risk (unintelligible) and primary prevention. Dr. Stone?

Neil Stone: Thank you very much. Can you hear me?

Laura King Hahn: Yes. We can hear you.

Neil Stone: Okay. Good. I serve as the chair of these guidelines that have come out recently as you have heard. And I'm really pleased to present the approach to the treatment of blood cholesterol. Notice we didn't say high blood cholesterol because we think it's a continuous relationship and the lower is better. As you'll see, our guidelines say, with proven therapy.

And I was essentially the chair or what I call it the orchestral leader of a very talented panel that included Jennifer Robinson, a clinical trials expert as a vice chair, Alice Lichtenstein, an international expert on nutrition as a vice chair, and a remarkable group of doctors, nurses, epidemiologists, scientists.

So in Annals of Internal Medicine earlier this year, we published eight points that created the synopsis of the recommendations, and I'd like to use those as

our starting point because it's so simple to get a feeling for the guidelines that way.

The first thing that we did is we wanted to encourage the adherence to a healthy lifestyle. You see, the guidelines, early on, acknowledge a central causal role for atherogenic cholesterol-containing lipoproteins, especially LDL, in the genesis, in the causality of coronary heart disease or atherosclerotic heart disease. And we felt that lifestyle was the best way to start especially for youngest patients.

So we have written together, presented together and published together with the lifestyle, obesity and risk assessment guidelines, along with the cholesterol guidelines. The lifestyle guidelines talked about dietary patterns and physical activities that can improve lipid and blood pressure risk factor levels. The obesity guidelines, as the name implies, gave advice about lifestyle suggestions that were crucial for weight control.

And the risk assessment guideline, for the first time, gave Americans a lifetime risk estimator for those 20 to 59 years. It helps identify those who are younger with a high lifetime risk but a very low ten-year risk. It was explicitly designed for lifestyle and not to be used just to choose drug therapy.

And the point is it was designed to enhance the clinician's focus on lifestyle and risk factor improvement because studies have shown that by age 50, low-risk individuals can plan on not only a longer life but may not get heart disease at all as they age. And here is the picture of the lifetime risk estimator. We urge everyone to download the lifetime and ten-year risk estimator. It's very easy to do and it's free.

For those 20 to 59 years it provides lifetime risk estimates. And this was the case of a 35-year-old man, white, cholesterol 220, HDL 38, systolic blood pressure 130, not treated for hypertension or didn't have diabetes but he was a smoker. And you can see a 50% risk and this allows immediately to put that front and center on the agenda for risk reduction.

The second thing was to talk about why we recommended statins as the drugs of choice for our benefit groups. We did an extensive evidence-based search. This was not an opinion guideline. The guideline panel created critical questions. They were answered by a literature review by an outside group that gave us back quality-rated studies and only from those quality-rated studies generated from our questions. And the questions had to do about LDL and non-HDL cutoffs and also about the benefit and risk of all the various cholesterol-lowering therapies. And basically we found two groups.

One above the line, secondary prevention, people who already had a heart attack and stroke or some sign that they've had damage from atherosclerosis, diabetes 40 to 75 over a wide range of LDL cholesterol 70 to 189 and those were the primary elevation of LDL one (unintelligible) more. These are people with genetic disorders, most of them with a familial form of hypercholesterolemia.

And, in these three groups, we're not going to talk more about them today. The optimal benefit we found was with a high-intensity statin to get the LDL down much lower, at least 50% or more although we caveats about if there were safety issues, or if the age was over 75, or tolerability issues, then a moderate-intensity statin could be used.

We're going to focus today on the primary prevention. That's below the line group. And these were adults 40 to 75 over a wide range of LDL cholesterol

value 70 to 189, and who had, based on the risk estimator, and notice I used the word estimator because it's not a precise estimation but it's pretty close.

And what it does, if we found that there was a 7.5% or more, greater ten-year risk, we said there is strong evidence that a moderate-intensity or even a high-intensity statin could provide net benefit but this was a clinical guideline. And we said statin therapy is not automatic, that requires a clinician-patient discussion. That was one of the important points of our guideline that was in what's new in the figures and tables and in the discussion.

Some people said, "Well, where did you come up with 7.5%?" Well, this was based on the rates of fatal and nonfatal heart attack and stroke seen in three large-scale clinical trials, exclusively primary prevention, not a mix of primary or secondary prevention, and these included JUPITER, AFCAPS/TexCAPS and MEGA.

I will tell you that our 7.5% is the same number essentially as the NICE guidelines, the National Institute of Clinical Evidence guidelines that say they would begin the risk discussion if the risk is 10% because they include other things like TIA or heart failure that mean that their 10% is our 7.5%. And why are we so close to those other guidelines? It's because we're looking at the same database.

We, actually, as you can see, see benefit down the 5% but we chose 7.5% as the time to start the risk discussion to avoid over-treating if the risk estimator would over-treat in certain groups - overestimate in certain groups.

And what do we mean by a clinician-patient discussion? I do this every day in clinic. I practice medicine for over 40 years. And one estimate, the ten-year ASCVD risk, was that risk estimator that we just showed, and use that as a

starting point for talking about risk factors that need to be identified and controlled, for example, like hypertension and smoking.

Number two; review the potential for benefit from a heart-healthy lifestyle. Number three; review the potential for benefit from a statin and the potential for adverse effects of drug-drug interactions. And number four; ask about patient preferences.

And, by the way, as we'll see in a few case reports in a second, we added some additional factors that improve calibration, discrimination and reclassification.

What that means is a lot of people have their favorite risk factors they'd like to add but knowing about a family history of premature heart attack and stroke, an hs, a high-sensitivity CRP, two or more, coronary artery calcium or CAC score 300 or more, or more than the 75th percentile for age, race and sex based on the MESA study, and an ankle-brachial index less than 0.9.

These were some additional factors that could be used if a risk decision was uncertain and by that we meant if the patients didn't fit in the four risk categories or if they were in the risk categories but the patient still had some uncertainty.

And here is the flow diagram that shows you that in primary prevention we suggested a clinician-patient risk discussion. So those with low risk, less than 7.5% risk because they were either young or they were out of the categories we would consider like an LDL more than 190 because those were in the higher-risk groups, these individuals require the clinician-patient discussion because you could use some of those additional factors.

Number two; if you were in the higher-risk groups, you still got the clinician-patient discussion. A statin was not automatic. You could either - the patient could say and the clinician could agree a statin didn't make sense and emphasize adherence to the lifestyle, manage other risk factors, monitor adherence or to feel that it did make sense. Let me give you some examples of that to make this more clear.

Thirty-six-year-old man with a family history of premature coronary artery disease and a LDL cholesterol of 180, too young for the ten-year risk estimation, but our guidelines clearly show that you could use additional factors like a family history of premature CHD.

And our guideline panel also said an LDL of 160 or more could inform the treatment decision because this person appears to be a patient in a high-risk group of family who, from birth, had high levels of LDL cholesterol that's resulted in coronary heart disease.

A statin therapy for him would be reasonable after a risk discussion that would review the potential for benefit, the potential for adverse effects, drug-drug interactions and patient preference. And what about the people though who fit in some of our statin groups?

Well, for example, what about the 68-year-old man with average risk factors and an estimated ten-year risk of heart attack and stroke of 7.5% or more? Many doctors and patients said, "You know, obviously, it's my older age that's pushing me in that higher-risk group. Do I really need to take it?"

Well, age is like a summary statistic for which your arteries have seen your whole life. And so our guidelines said if the patient and the physician felt that

the risk profile was otherwise unremarkable or just had one risk factor like blood pressure, you should have this risk discussion.

And, in addition, if the risk decision was still uncertain for the doctor and/or the patient, you could order a calcium artery score that could clarify this with a zero score, of course, indicating that, perhaps, no statin was needed at this time or an elevated score further corroborating the increased risk.

Or you could do an hs-CRP of two or more because, over 60, the patient could be a man or a woman that would have been in the JUPITER trial that selected patients based on their age and the CRP or an ankle-brachial index with less than 0.9.

If you will, an observer or doctor call said that what we were trying to do was to marry the best scientific evidence with clinical judgment and patient preference. That's what our guidelines have tried to do in primary prevention. It was not a "said it and forget it" or "statin's our automatic guideline".

We'd like to point out that the word clinician judgment is used several times in the guideline. It is important for several patient groups, especially when the randomized controlled trial evidence is insufficient for guiding clinical recommendations.

Again, for younger adults with a low ten-year risk but a high lifetime risk, our guidelines allow for clinician judgment based on single strong factors or multiple risk factors to make a judgment about the best therapy but, of course, always starting with an emphasis on lifestyle.

We specifically called out under the limitations of a risk factor approach, of an approach based on randomized controlled (unintelligible) that there could be

individuals with HIV or rheumatologic conditions, or inflammatory diseases, or those who undergone a solid organ transplantation, and that this guideline encouraged clinicians to use clinical judgment in these situations, weighing potential benefits, adverse effects, drug-drug interactions and to consider patient preferences. We use that phrase over and over again because we think this is what good clinicians do.

Now what about the newly developed pooled cohort equations for estimating ASCVD risk? This was hailed as a great benefit because, for the vast majority of patients, it was designed - it was based on five communities. And it now includes a separate pooled equation for African-Americans as well as non-Hispanic whites. We wish we could have had other ethnic groups I have dated that we could have used to put in the equation but I'll mention how we deal with that in just a minute.

But in the (Montaner) paper in JAMA, in March of this year, they noted that the observed and predicted five-year atherosclerotic CVD risks were similar. These risk equations were well calibrated in these community-based populations that they were designed to be used in.

Notice here, a graph right from the paper by (Montaner) that, in the middle ranges, the middle deciles of predicted risk, the difference between white observed and blue predicted is very close, so the risk estimator estimates pretty well for the vast majority of people in those areas.

Now it may overestimate in those with high socioeconomic status such as healthy volunteers in clinical trials and a group of those were reported. By the way, the score risk estimator used in Europe also over-reports for volunteers and those with high SES status.

But we also pointed out in our guidelines that there are certain groups like South Asians that may have an especially high risk of an event and a risk discussion is therefore needed to indicate that the risk estimator may underestimate their risk, if you will.

Let me give you an example. This is a woman, 55, African-American, cholesterol 210, HDL 55, blood pressure 145 systolic, she's being treated, diabetes, no smoker health. But what do our guidelines say about her risks? The risk estimator says that her risk is 7.7%.

Because there's a separate equation for this African-American woman, she would be recommended for a risk discussion to discuss the statin added to the lifestyle and blood pressure control in her as opposed to her white non-Hispanic counterpart in whom the risk would be too low to generate this.

Our guidelines we found out many times are causing lower-risk white women to stop their statins because they were given it just because their LDLs were above a certain number, say, 130, but their actual ten-year risk was much lower.

So some people have said, "Well, how do you know you're doing the right thing? How do you know that assigning a statin based on risk rather than an LDL target makes the most sense?"

Well, this next slide shows a trial done reported out in September of this year, 3000 subjects, two-thirds men, and they looked at the assessment of plaque on a coronary artery, a CT scan to look for atherosclerosis and compare it with the prediction based on the older guidelines that used LDL targets.

And what they showed was that our new guidelines assigned fewer patients with no plaque to statin and more patients with heavy plaque to statin. The correlation of the serum LDL level, it's crucial as a causative factor. It's just not a great biomarker, if you will, that took various plaque levels as levels.

So you want to be up on this upper line and the ATP III without focusing on hard targets. It does a pretty good job similar to what we do but ATP III falls short if it depends on their rigid targets in order to say who gets treatment or not.

(Pencina) and colleagues used data from the National Health and Nutrition we call NHANES dated 2005-2010 to look and see who would be eligible for statin therapy under the new guidelines, compare it to the older guidelines and extrapolate the results to 150 million American adults between 40 and 75.

And what they found out we're treating more older patients, more men, those with higher blood pressures, often with lower LDL because there was no hard number below which risk went away with LDL and no hard number above which risk suddenly began higher rate of obesity. And they actually noted in their discussion that using our guidelines, you could potentially reduce the risk of - you could potentially save 450,000 individuals from heart attack or stroke.

On the other hand, they carefully noted that our guidelines ask for a risk discussion. And, as a result, they don't necessarily mean that everybody who's 7.5% or more gets treated, so that estimation of benefit was just an estimation.

The Dallas Heart Study tried to say, "What about this additional statin eligibility? Is it reasonable to treat those people newly eligible for statins based on the guidelines?" And they used the number needed to treat, NNT,

among newly statin-eligible patients -- I'm sorry for the sirens. I'm talking in a hospital.

And they showed that the number needed to treat was less than 25 or 30 in most cases, a very reasonable number needed to treat. In other words, the new guidelines identified a higher-risk group who would benefit from statins.

But what about the concept of net benefit? We purposely looked at whether or not the statin assignment would benefit net to patient. And one of the potential adverse effects could be the new onset of diabetes. Based on our analysis, if you give a moderate statin the risk is one in a thousand. If you give a high-intensity statin the risk is three in a thousand.

But (Ritger) and colleagues showed that those who get diabetes with a statin tend to have a number of diabetes risk factors and they tend to be older as we've noted. So a body mass index of 30 or more, a blood sugar of 100 or more and an A1c glycosylated hemoglobin of 6.0% or more, metabolic syndrome risk factors, if you have several of these or more, you're on the path to diabetes anyway.

And that was corroborated by a study of secondary prevention that also showed that they didn't go onto new-onset diabetes if they had few diabetes risk factors. A one-year change in body weight and that secondary prevention treat-to-new targets trial also predicted that. And that's why I tell patients if you start a statin, support your weight daily and don't gain weight. Healthy lifestyle doesn't go out the window when you start a statin. We needed just as much.

And, by the way, when people said, "Well, what was the effect on their lives by having diabetes since they were started on a statin?" It appeared on the

JUPITER primary prevention trial with a high-intensity statin, it was just accelerating the time in diagnosis by 5.4 weeks. These were people already on the path toward diabetes. So the key is, remember, if they are older, if they have diabetes risk factors, if they're gaining weight, they may be prone to diabetes and we need to talk about it.

So our guidelines in short are simple as ABC. A, always encourage adherence to lifestyle. It's where you start. And even if the patient receives a statin, you must consider the lifestyle.

B, bring your practice closer to the randomized controlled evidence. No arbitrary fixed LDL or non-HDL goals. We couldn't find support for them per se. We did find support for the appropriate intensity of statins for higher-risk groups in whom statins are shown to benefit.

This allows you to get LDL lower because that's what they do. They lower LDL and you want the highest lowering of LDL in your higher-risk groups like secondary prevention, primary elevations of LDL 190 or more or those with diabetes in the 40- to 75-year range.

C, choose a risk estimator to estimate lifetime risk for young people and use that for your lifestyle discussions and a ten-year risk for 40 and over for primary prevention. If you download the ACC/AHA app, it provides useful decision support. It summarizes the lifestyle, obesity and the risk assessment guideline, one-stop shop and to really understand what we're saying.

But, remember, the risk estimator isn't for those on treatment. Once they've been on a statin, the whole idea is we want to get LDL lower with proven therapy and that's the statin plus lifestyle, and I'll talk about non-statins later

but they pertain really only to the higher-risk groups, not to primary prevention.

D, discuss attention to risk factor control, lifestyle, potential for benefit as well as adverse effects, drug-drug interactions and patient preferences, and a clinician-patient risk discussion. Our guidelines have stated that this precedes statin therapy and primary prevention. Statin therapy not automatic.

E, evaluate additional factors that can inform the risk discussion, factors chosen specifically that they improve discrimination calibration and reclassification of the risk assessment.

So family history of premature ASCVD; family history, of course, is done on everybody. But when you get a premature history before 65 in women, before 55 in men that may have a strong influence on how you and the patient feel about a statin prescription.

A calcium artery score of 300 or more, or greater and equal to 75th percentile based on age, race and sex. Again, whether you order, the score requires a risk discussion and you have to bring in factors such as costs and how you would respond to that score.

An hs-CRP, a measure of inflammation of 2.0 or more. An ankle-brachial index of less than 0.9, a measure of blood flow. And you may use, especially in younger people, a primary elevation of LDL equal or greater than 160, if that appeared to be on a primary basis, and using the lifetime risk estimation to enhance the discussion and need for more optimal lifestyle, has always been part of our guidelines.

F, follow-up needed to evaluate adherence to therapy. People incorrectly say that sometimes a therapy might be "said it and forget it". That's not what we recommended in our guideline. We recommended adherence to therapy, adequacy of treatment effect and follow-up on safety, and you can only do this if you get follow-up lipids three to 12 weeks after the initial assignment to a statin, and then three to 12 months after that to check on adequacy of effect, adherence and even safety.

And G, give consideration to prove non-statins and high-risk groups. So I'm going to leave the primary prevention for a second. We just had the improvement trial results and it showed that secondary prevention patients, those on a moderate-intensity statin to which they had ezetimibe, got additional benefit.

Our guidelines anticipated whether this would be positive or negative by saying in those where the adequacy of effect or there was a statin, intolerance was not great, you could add a non-statin. All we ask is that it be proven and is safe as well as effective. And so this new information fits right into these clinical guidelines.

So, in brief, I've tried to summarize the points of the guidelines in primary prevention and hope you find them useful. Thank you very much. Now here are some relevant resources for the patients. A 2013 ACC guideline can be printed out. There are some pocket guides.

Again, all of these can be helpful and we think, with practice, patients find out that having a doctor or a nurse clinician or staff explain why our therapy is so important and the choices the patient has, their informed preference, this is an important thing. Now I'll turn it over to Laura for questions and answers.

Laura King Hahn: Thank you, Dr. Stone. I just wanted to also remind everyone that we will be taking questions via the online tool. And so if you do have questions, please submit them to the online. At the top left-hand corner, you will note a Q&A tab in which you can submit those and we will respond to those.

As a reminder, towards the top right-hand corner, there is an icon, the three pieces of paper, in which you can download, not only the slides that were presented on today but also the handouts and the resources that were just reviewed by Dr. Stone.

And, as a reminder, you know, today's presentation really is about our AHA guidelines. I recognize that, you know, many of you are engaged in other - this went out on the Guideline Advantage (Webserv) and the Guideline Advantage Program actually has other organizations in which it supports but this presentation does represent the AHA/ACC guidelines. Dr. Stone, do you see the top box?

Neil Stone: Yes. Let me take - I don't see a question there. Let me look to Q&A. Here it is. Good. And the first question is it's just about the slides. Let me answer this.

Laura King Hahn: If you'd go to the Manage tab, you'll see a list of...

Neil Stone: Okay. I want to just point out, by the way, just a disclaimer; the guidelines were not endorsed by every group that supports the Million Hearts so you'd have to look that up. It says here, if you have a patient that's already on a statin, do you take them off of it to find a non-treated total cholesterol HDL value to put into the risk estimator?

No, we don't. We actually said that if they're already on a statin, you could note that the clinical trial showed that an LDL less than 100, not a target, but just a guidepost was seen in most of the trials of statin therapy.

So, if you will, we're encouraging you when you're on a statin and lifestyle to check lipids because remember the triglyceride and HDL are going to be very sensitive to lifestyle.

And also, a lifestyle, particularly in ways that you reduce LDL cholesterol by a diet can be complementary to the statin and gets you lower. And, in the highest-risk people, the lower is better but I always say it's proven therapy.

Remember hormone therapy didn't work out. Torcetrapib therapy caused increased mortality, stopping the trial. Niacin added to a statin didn't prove additional benefits. So you want to do lower is better but with proven therapy.

And primary prevention, we think staying on the right intensity of a statin and lifestyle makes the most sense. And there may be somebody or some patients who can do a tremendous job by getting their LDL as low as possible on lifestyle.

And the question is does the Center for Disease Control endorse the new cholesterol guidelines? I don't know that answer. Is there a limit for how low LDL can be safely lowered? Is there a number that's too low?

First of all, you have to remember, the problem with getting targets -- specific hard numbers above which or below which you start or stop medicine -- is the (unintelligible) formula is not very accurate below 70. It really wasn't designed for that task.

And the guidelines pointed out that in the clinical trials, an LDL less than 40, and you'd have to repeat it to be sure you were right around the right area, was that a signal in one of the trials but not all of the trials, to cut back a little bit on the intensity of statin therapy.

So the guidelines suggested that an LDL, if the numbers are way below 40, there's not a lot of information. There's information but not a lot of it there. And that the clinician might want to consider cutting back.

Could I touch on secondary prevention for stroke patients? We've seen a tendency for providers in the hospital to put all stroke patients on a statin, setting the new guidelines, disregard the LDL number.

So most stroke neurologists feel strongly about the SPARCL study over a wide range of LDL cholesterol being on a high-intensity statin which would be consonant with our guidelines, resulted in a reduction of heart attack and stroke. This was a very large study. They had almost 5000 people and, at entry, they had LDL cholesterol levels of about 100 to about 190, and they responded to atorvastatin 80.

Now if you have a patient with an LDL of 50, they would not have been in the SPARCL trial and one would have to get some consultation to decide if that was appropriate but - or if the highest-intensity statin was needed at that low number because, of course, that would drop you below the 40 cutoff. So that might be a way to look at that.

Can I have instructions on how to download the lifetime risk estimator tool? Well, if you go to both the American Heart Association or the American College of Cardiology Web sites, they have tabs so that you can download the tool.

And people who want to know about the lifestyle guideline strategy. It was low in trans and saturated fats because both strategies have been shown to reduce LDL cholesterol but I think it's very important to realize it's what you replace saturated fat with that is so important. You don't want to replace it just with carbohydrates.

And so the lifestyle guidelines talked about consuming a dietary pattern with intake of vegetables, fruits, whole grains, using low-fat dairy products like poultry, fish, legumes, non-tropical vegetable oils and nuts, limiting sweets, sugar-sweetened beverages and red meat, and this was a high level of evidence, (one-8).

And people are going to achieve this pattern with some well-known patterns out there including the DASH Pattern, USDA Food Pattern, AHA Diet. This is certainly consistent with a Mediterranean-style diet.

The point is that a (one-8) thing was to aim for a dietary pattern that keeps the saturated fat low and to reduce the percent of calories from trans fat. And, of course, if you're worrying about blood pressure, you're going to want to have a pattern that keeps the sodium intake lower.

Please address the adverse effects of statin therapy including muscle weakness, elevated A1c and development of cataracts. Well, the cataract issue has been looked at and dismissed in prospective trials. It was picked up in retrospective trials. It was a worry because of cataracts in beagle dogs with lovastatin more than 30 years ago. But prospective trials showed that statins did not increase the risk of cataracts.

And I want to point out that when you use retrospective case claim data, as it often does, to look for a problem and that's called hypothesis-seeking or hypothesis-generating. And that's got to be tested in a randomized placebo-controlled trial where neither the evaluator nor the patient knows whether they got a drug -- in this case, a statin -- or a placebo. And that's the safest way to know what causes it.

The best estimates of muscle weakness in those prospective trials with statins are about 5% to 10%. There are some much higher estimates but one should know that when they've looked at the placebo trials, many placebo patients think they have muscle complaints and they're actually on a placebo. They're not getting the statin at all.

And so our new guidelines talk about if a patient is concerned they're getting moderate to severe or persistent discomfort, they should stop the statin right away and then they should let the discomfort fade away, and then you can consider a re-challenge with the same statin or half the dose or a different statin to be sure that this is truly a statin effect.

Also, adults over age 50, there are other conditions that can mimic this like polymyalgia rheumatica where patients with a high sed rate have weakness and muscle aches and that's not due to their statin, and there's a host of other conditions, so the doctor needs to evaluate the patient who feels they have a problem.

The important thing is the assignment of a statin doesn't mean that you never stop it if you have a problem. If you have persistent symptoms you should stop and evaluate. Our new guidelines said, before patients are given a statin, the clinician should ask the patient about a personal or family history of muscle weakness because that could be a red flag that could help you.

I have one patient who's all their family members had weakness on simvastatin and wondered why they were given simvastatin because they had weakness too and, of course, we stopped it and, eventually, they found a statin they could tolerate but it wasn't that drug. So that's an important clinical pearl. Always look for a personal or family history before you start and let the patient know that muscle problems can occur but it's the persistent ones and if they're moderate or severe that should cause you to stop and reevaluate.

Anything about new classes of drugs not only tackling LDL but increasing HDL. Well, we recommended proven therapy. You not only had to be effective, you had to be safe. And by effective we meant you had to show a reduction in outcomes.

Trials of surrogate markers, by that we mean not the end point of heart attack or stroke but abnormal tests that people thought were important, have not proven consistently to tell you which medication you should consider. So we didn't recommend doing carotid intimal thickness studies to determine whether you get therapy. We based our therapy on the randomized controlled trials.

And so we're still waiting for the cholesterol - for the CETP inhibitors to give us proven data. They've got to be shown to be safe over the long term. They have to have incremental benefit over what we're doing now.

What I hear you're saying is that, in many cases, those who later developed diabetes after statin therapy had risk factors for diabetes already. In many cases. That's right. In many cases that was the case.

For example, in the west of Scotland study, a study of younger men, pravastatin wasn't associated with diabetes, new-onset diabetes, but it wasn't an older study, the PROSPER study. So age is that risk factor. And as we've seen in JUPITER and the TNT trials, the diabetes risk factors are more likely to target those people who may be prone to diabetes.

Now we have some knowledge that you can prevent progression to diabetes with the regimen similar to that seen in the diabetes prevention program, a regimen where patients eat less, eat much smarter. They move more daily. They keep their weight down. And, again, I want to emphasize, avoiding weight gain can be very important.

If you had a specific statin that places the patient at a high risk for diabetes. Again, I pointed out that moderate-intensity statins, the risk is about one in a thousand and high-intensity about three in a thousand.

And what are clinicians supposed to do if they're not treating to goal? Are they treating to risks also? But let me - so I was presented with a case, with a man who had diabetes. He had an LDL of 90 despite pretty extensive diabetes.

For many years he was on insulin, but because his LDL was 90, he wasn't given a statin. Our guidelines would have treated him. He came in and had a heart attack and they gave him ten of atorvastatin and he got his LDL to 69 or 70 and they stopped there because they said he was at goal.

In both cases -- and I'm using this just as an example -- arbitrary fixed goals undertreated the patient based on the evidence. The patient initially required both lifestyle and a statin to reduce his risk, and then once he had an acute coronary event, getting LDL lower with proven therapy that higher-intensity statin would have made a lot of sense.

So the arbitrary fixed goals to which a lot of people spend a lot of time can be confusing. We've had cases where people were adding multiple drugs to try to get LDL just a few points lower so they could say they were at goal. We'd rather say to people the goal for the new guidelines is getting the atherogenic lipoproteins lower with proven therapy.

And that's lifestyle, number one. You would be astonished how well people can do with lifestyle, if you can talk to them about it, and then, the proper intensity of statin if they're in the proper risk group as I've indicated.

Someone says, also for clients who are on multiple meds or in multiple chronic conditions like diabetes and hypertension, statins alone are not the answer. Guidelines, notice I started off by saying, you first evaluate associated risks and you treat those. You're treating all the sources of risks. This is not a statin guideline. This is an evidence-based guideline that focuses on risks and that statement is just simply not true.

And someone says, well, what are the protocols to treat patients with multiple conditions? Well, you'd, number one, start with heart-healthy lifestyle because that helps all of the conditions usually. It helps diabetes. It helps hypertension. It helps hyperlipidemia. A lot of people spend too little time on that. And patients could be encouraged to keep a diet diary, get a pedometer and then get counseling by the appropriate person to help with lifestyle.

Number two; the appropriate treatment for hypertension or diabetes has been spelled out by groups that have focused on those things. We're simply saying here that if your risk is high -- in certain groups, secondary prevention, LDL very high because of a primary or genetic condition or diabetes -- that statins have been shown to provide benefit along with those other treatments.

So that's all the questions I see and I hope people get a feeling for the idea of the guideline's focus on therapies that are not only effective in terms of lowering outcomes but effective in terms of being safe, and I think that's very important. Thank you.

Laura King Hahn: Thank you, Dr. Stone. That was a really informative presentation. And I hope that others found that helpful for their work as well. We will be - we've recorded this webinar and we will be posting onto the Web site for those - as well as the slides. You'll be able to find them at this Million Hearts Web page and here is the link for where you could find them.

It only takes us about two weeks to get the recording as well as the slides up so please come back and look on that Web site for that information for those who were unable to participate in the call. Thank you again for your time, Dr. Stone. It was a really informative presentation and we hope that everybody enjoyed their time today. Thank you.

Neil Stone: Thank you.

Coordinator: Thank you for your participation in today's conference. Please disconnect at this time.

END