

1 negative.

2 The question is that we have more
3 negative trials than positive trials. The
4 question is, is there a logical explanation,
5 which at least I haven't come to -- it hasn't
6 come to me. And I wanted to hear if the
7 sponsor could shed some light on that.

8 DR. BOWDEN: Thank you for your
9 question. Just for clarification, this is
10 with regards to the 2119 study being
11 negative?

12 DR. BUZDAR: That study which was
13 presented by also the ECOG, George Sledge in
14 ASCO. It was a straight Phase II study in
15 which the patients were just given
16 capecitabine with Avastin to see -- there was
17 a hypothesis that this is the time to
18 progression and it should add that much. And
19 when the data is looked at in totum, that it
20 looks almost identical, no improvement was
21 observed.

22 DR. BOWDEN: So with regards to the

1 excalibur study you're referring to, that's a
2 single arm Phase II study, and so that
3 doesn't have a control arm and, therefore,
4 making a comparison can't be done.

5 With regards to 2119 and 2100,
6 please recall from this morning's
7 presentation that there are a couple of major
8 differences between the trials. Capecitabine
9 is the chemotherapy in 2119 versus weekly
10 paclitaxel. On 2119, 85 percent of the
11 patients had received prior anthracyclines
12 and taxanes in the metastatic setting. And
13 the 15 percent how had not, had relapsed
14 quickly after receiving those two drugs in
15 the adjuvant setting. Whereas none of the
16 patients on 2100 had received chemotherapy in
17 the metastatic setting.

18 And I think the other important
19 aspect is to think about the indication
20 statement that is specific to the E2100
21 patient population. And I'd like to ask Dr.
22 Miller to come and comment because there was

1 important consideration when they were
2 designing the E2100 with regards to the
3 rationale and some of the aspects in terms of
4 the drug selection and the patient population
5 as they were putting that study together
6 several years ago.

7 DR. MILLER: So I think actually
8 the E2100 study may tell us something
9 powerful about biology and results of ongoing
10 trials will see if my current hypothesis is
11 correct. You're absolutely right, Aman.
12 When I first saw the results of these two
13 studies my first intuition was that the
14 largest difference was the difference in the
15 patient populations. And I still that
16 difference in the amount of previous therapy
17 is an important difference. But there was
18 also a biologic rationale and pre-clinically
19 demonstrated striking synergy between
20 prolonged exposure to the taxanes as you
21 would get in a weekly schedule with
22 bevacizumab that has not been shown with

1 capecitabine. So I also think that
2 difference in chemotherapy may turn out to be
3 critically important in the results that
4 we've seen.

5 Now, there is an ongoing trial
6 known as the Ribbon 1 trial, also in the
7 first-line setting, that does include a
8 control arm. So we will be able to see the
9 benefits of adding Avastin in that setting.
10 And that looks at a variety of different
11 chemotherapy options, so I think that will
12 give us a better sense as to whether the
13 chemotherapy partner that Avastin is matched
14 with in first-line breast cancer patients has
15 a major or a minor impact on the outcome that
16 we see. I think looking at these two trials
17 suggests to us that it certainly probably has
18 some impact, but it's hard to know what the
19 magnitude of that impact might be without the
20 results from other studies.

21 DR. BOWDEN: If we could all --

22 DR. HUSSAIN: Ms. Mason? I'm

1 sorry.

2 DR. BOWDEN: I'll make one comment
3 with regards to the previous comment. There
4 were two components of it. One was missing
5 data. And I just want to point out that we
6 did eight sensitivity analyses of the
7 progression-free survival endpoint in an
8 effort to study the robustness of the PFS
9 endpoint, looking at missing data. And in
10 all eight sensitivity analyses the treatment
11 benefit of the Avastin/paclitaxel combination
12 was maintained.

13 Now, I'd also like to ask Dr. Winer
14 to speak to your specific question about the
15 trade-off, the benefit-risk trade-off, and
16 what that means looking at this data and how
17 that can translate to a physician-patient
18 interaction.

19 DR. WINER: So I don't think that
20 there's any real attempt to minimize this
21 acute toxicity or the severe toxicity. And,
22 in fact, I think that I certainly, and I hope

1 all of my colleagues, take very seriously
2 these rare, but life-threatening events.
3 They're a big deal. And I think particularly
4 when we consider moving agents like
5 bevacizumab to the adjuvant setting, and
6 there are now studies going on, one of the
7 major issues will be what the long-term
8 impact is of hypertension, whether that's
9 hypertension for a year or two or three or
10 forever.

11 In patients with metastatic disease
12 I actually would tend to agree with Dr.
13 Miller that having Grade 3 hypertension,
14 which requires taking an anti-hypertensive
15 medication, in the overall picture is
16 probably not nearly as worrisome as many of
17 the other toxicities that people face with
18 treatments that we have. And as one who has
19 actually administered a fair amount of
20 bevacizumab in combination with paclitaxel
21 and in combination with other agents as part
22 of trials, adding bevacizumab to a

1 chemotherapy agent adds far less in terms of
2 the day-to-day toxicity than adding a second
3 chemotherapy agent. So while I do think that
4 these serious toxicities have to be taken
5 very, very seriously, honestly, I think that
6 what one has to come back to is what's the
7 symptom burden for a patient on a day-to-day
8 basis?

9 And if I could make one other
10 comment. I just want to address the comment
11 that Dr. Pazdur made earlier. And I don't
12 necessarily disagree, but I don't know that
13 we should be discounting progression-free
14 survival any more in the first-line setting
15 than in the second- and third-line setting.

16 I actually think it's very
17 important there as well. And I think
18 maintaining patients in a disease state that
19 is stable and avoiding progression is
20 something that our patients want and, in
21 fact, does avoid symptoms in that setting as
22 well, although I admit that we don't have the

1 optimal data to answer the questions that you
2 posed.

3 DR. HUSSAIN: I actually have a
4 question because I've been thinking about all
5 the terminologies that have been used about
6 meaningful, clinically meaningful. And
7 there's no question a five-month delay in
8 progression is meaningful. The question is
9 what does it mean?

10 And so when I look at a patient and
11 associate a meaningful endpoint with clinical
12 benefit -- so if a patient is not living
13 better, which you have showed us that they
14 are not, and they are not living longer, and
15 if a lesion that goes from 4 centimeters to 2
16 centimeters and stays at 2 and then goes back
17 up to 4 without any association of symptoms
18 or anything else, and that is 2 months extra,
19 how does that translate into clinical
20 benefit?

21 And I would argue that the burden
22 of symptoms, these patients are terminal.

1 And so our job is to make their life better,
2 not say it's okay to have a stroke, it's not
3 going to kill you, or it's manageable; or to
4 say hypertension Grade 3, you're going to
5 have pills, you pile up pills when you're
6 taking all other things. And I'd argue that
7 your quality of life questionnaire, if
8 anything, showed that these patients' quality
9 of life went down, not up. And so -- well,
10 you showed that it decreased, not by
11 comparison to Taxol.

12 SPEAKER: (off mike)

13 DR. HUSSAIN: No, no, but compared
14 to their baseline did they quality of life go
15 up or go down? It went down. So you really
16 didn't show they're living better and you
17 didn't show that they're living longer.

18 And so when you put all of that
19 together, and the fact that in your study the
20 five months' difference in survival eclipses
21 any difference in -- I'm sorry, in
22 progression-free survival eclipses anything

1 you showed before in terms of the other
2 trials. Yet that did not make it into
3 survival in an era where there is all kinds
4 of second- and third-line treatments, which I
5 don't buy as the reason why, you know, people
6 -- you didn't see a survival difference. The
7 only explanation I'm left with is that those
8 who went on treatment and delayed their
9 progression, somehow their disease did
10 something to them or the treatment did
11 something to them that killed them sooner.

12 So can you please try to somehow
13 explain that to me?

14 DR. WINER: There are many
15 questions embedded in that commented
16 question. I'll do my best and you can keep
17 me on track if I stray.

18 So first, in terms of why there was
19 no difference in terms of overall survival,
20 it's true, there wasn't. There was a small
21 numeric difference.

22 It is reasonably likely that that

1 didn't arise by chance alone, but it could
2 have and certainly that difference is smaller
3 than the difference in terms of
4 progression-free survival. And much of that
5 may relate to what is some intrinsic behavior
6 of cancer in women with metastatic disease.
7 And one could argue that particularly in
8 women with ER-positive metastatic breast
9 cancer that our therapies may do very little
10 ultimately to change survival and that it's
11 all about maintaining disease control and
12 symptoms, and that survival is affected by
13 the intrinsic pace of the disease.

14 In terms of the issue of quality of
15 life, I think this is tougher. I've been
16 involved in many studies over the years that
17 have attempted to measure quality of life.
18 Early in my career I attempted to do that
19 myself in the context of trials and became
20 frustrated. Quality of life is
21 extraordinarily difficult to measure. What
22 was demonstrated in the trial was not that

1 quality of life improved associated with
2 paclitaxel and bevacizumab, but that, in
3 fact, it declined in less than in women who
4 received paclitaxel alone, and there was a
5 significant difference.

6 But I think the real issue is does
7 progression-free survival in this setting
8 translate into an improvement in quality of
9 life? And I actually believe it does. And I
10 believe it does because in a substantial
11 number of patients one is delaying symptoms,
12 in a substantial number of patients one is
13 avoiding needing to move to a new therapy
14 with both the physical and psychological
15 trauma. But ultimately, if we had better
16 measures of quality of life that's what we
17 would rely upon and we wouldn't rely upon
18 measures of -- a progression-free survival
19 statistic. But we don't and it's what we're
20 left with here.

21 DR. PAZDUR: Could I just make a
22 comment regarding this whole issue of quality

1 of life? Because I think that, you know, we
2 have spent a lot of time at the FDA looking
3 at quality of life tools, et cetera. I would
4 like to underscore we do not have a blinded
5 trial here. We have one trial. We really
6 did not capture other symptomatic measures
7 that were perhaps given to these patients.
8 God knows if they were uneven in both arms.
9 So, you know, this whole area of trying to
10 measure quality of life in an unblinded trial
11 is highly problematic.

12 We do have a new guidance that is
13 out on patient-reported outcomes. And I
14 think in the future ODAC meetings we will be
15 giving the members some education on our
16 current thinking of quality of life claims to
17 be made. But this type of study that is in
18 this submission doesn't come close to what we
19 would consider for a credible claim for any
20 quality of life, especially with no
21 differences being shown.

22 DR. WINER: And if I can, that is

1 why we're having this discussion about
2 progression-free survival because we simply
3 don't have the kind of quality of life data
4 here that we can rely upon.

5 DR. BOWDEN: I think the other
6 clarification I'd just like to make is that
7 Genentech does not see the quality of life
8 data as being submitted for a labeling claim.
9 But with all the limitations that we
10 acknowledged, the fact that the decrease in
11 quality of life, if we can show CE-29,
12 please, these are the curves for -- in blue
13 for the combination and in yellow for the
14 paclitaxel. And there's less of a decline in
15 the combination relative to paclitaxel.

16 DR. PAZDUR: With all due respect,
17 I do disagree with you on that point. What
18 we're talking about is substantial evidence
19 to be demonstrated here in making regulatory
20 decisions. And whether they go on the
21 product label, they are going into regulatory
22 considerations for the approval of this drug.

1 And, therefore, some degree of substantial
2 evidence should be demonstrated on that
3 endpoint.

4 DR. HUSSAIN: And actually, just
5 for the record, the reason I was raising this
6 goes back to the issue of clinical benefit,
7 not clinically meaningful difference. So I
8 go back and say you've now shown that these
9 patients are living better and certainly
10 they're not living longer. And so that's
11 really where I was hoping that you clarify.

12 I have a question for Dr. Pazdur.
13 As a clinician who does clinical trials and I
14 feel the pain of the investigators, there's
15 no question, I can't see how your requirement
16 to have a blinded study when someone has to
17 come weekly and get an IV to get IV placebo
18 is reasonable because it really is not.

19 DR. PAZDUR: No, we totally -- as I
20 mentioned in my introductory comments, you
21 know, the issue with blinding in oncology is
22 very, very difficult. And even in applicants

1 that come to talk to us about blinded study
2 one of the major questions that we always ask
3 them, is it truly a blinded study? And
4 that's why we have stated, you know, for a
5 subjective endpoint, such as progression-free
6 survival, since these studies cannot be done,
7 this is why we're turning to this
8 radiographic endpoint here.

9 Quality of life claims, when one
10 wants to make them, are exceedingly difficult
11 in oncology, and here again they would
12 require not only a blinded study. If that
13 can't be done, then it perhaps could be
14 duplicated. There should be a huge magnitude
15 of effect, consistency of endpoints, a
16 prospective plan for evaluation of the
17 quality of life data. It shouldn't just be
18 let's add it on to some trial and then take a
19 look at it and make some vague claim on the
20 results that are generated. It really should
21 be incorporated as an essential primary
22 element in the evaluation of the therapy.

1 DR. HUSSAIN: Ms. Mason?

2 MS. MASON: I have one point of
3 clarification and then a question. There was
4 a comment earlier about two-thirds of the
5 patients in the E2100 being ER-positive. Yet
6 on a slide of patient and disease
7 characteristics it says 61.8 percent
8 ER-negative status. And so I was just
9 questioning that because that does have
10 implications as to a subpopulation, and
11 wanted to know if there's a way using the
12 limited collected data to be able to tease
13 out are there subpopulations that really are
14 benefiting? Because I think we're going to
15 see that more and more as we get into
16 different therapies and we're moving into a
17 new era of, I think, treating breast cancer
18 and cancer in general, and it would be
19 helpful. I know there's a lot of missing
20 data here to be able to look at that, but
21 something worthwhile considering.

22 DR. HUSSAIN: Sponsor?

1 DR. BOWDEN: I'd like to show slide
2 15, please. This is with regards to your
3 question about the frequency of patients,
4 women with estrogen receptor-positive tumors.
5 This is ER and/or PR. And you see on the
6 fourth row across, 64 percent in the
7 paclitaxel arm and 63 percent in the
8 combination arm.

9 DR. HUSSAIN: Ms. Portis? I'm
10 sorry. You're done?

11 DR. BOWDEN: Yes.

12 DR. HUSSAIN: Okay. Ms. --

13 SPEAKER: (off mike)

14 DR. BOWDEN: Oh, yes, thank you.
15 And if I could see slide 66 from the PFS
16 deck, please. We looked at a number of
17 different subsets, and Dr. Miller showed you
18 just a few of them, to try to understand how
19 consistent the effect was, who might -- and
20 also as hypothesis-generating potentially to
21 explore further other subsets. And if you
22 look at this slide, you can see that we

1 looked at age, race, region, disease status,
2 locally recurrent and metastatic. If values
3 that are falling to your left are -- favor
4 the combination arm to the right to the
5 control arm. Next slide, please.

6 They're all in favor of the
7 combination there. Then if you look at
8 disease-free interval less than or equal to
9 24 months, greater than 24 months, estrogen
10 receptor status, combined, which is a
11 triple-negative population across here, again
12 you can see that in all the subsets the
13 treatment effect is maintained finally. Now
14 looking at number of metastatic sites;
15 measurable disease versus non-measurable, a
16 topic we touched on earlier; the hazard
17 ratio,.37 versus.66. So in all of the
18 subsets examined the treatment effect was
19 maintained.

20 MS. MASON: I'd question, too, if
21 -- because there's been a significant benefit
22 seen in colorectal cancer and non-small cell

1 lung cancer with Avastin whether a subset of,
2 like, lobular breast cancer that has a
3 different progression than standard ductal
4 breast cancer, if there might be a subset
5 population there that would be worthwhile
6 exploring.

7 DR. BOWDEN: Whether subsets --
8 whether there are comparable subsets within
9 the non-breast cancer indications? To the --
10 sorry, I missed the question there.

11 MS. MASON: The progression of --
12 or metastatic lobular cancer tends to go to
13 more abdominal sites, a different progression
14 than ductal breast cancer. And with the
15 success in those other types of cancers, in
16 colorectal and in the specific lung cancer,
17 perhaps lobular breast cancer would be a
18 valuable group to look at as a subpopulation
19 metastatic disease.

20 DR. BOWDEN: Yes, thanks for your
21 comment. We're looking at studying Avastin
22 in a number of different breast cancer

1 populations. And it's something that we'll
2 need to consider in terms of looking at that
3 specific group certainly. Thank you.

4 DR. HUSSAIN: Dr. Lyman?

5 DR. LYMAN: Three quick questions
6 for the -- well, one has been already
7 addressed by Dr. Pazdur and that's the
8 blinding issue. I would agree completely
9 that we can't really evaluate the data in a
10 non-blinded study for quality of life.
11 Having said that, as was pointed out, very
12 few labeling indications for oncology
13 therapies or certainly cytotoxic therapies
14 has blinding been mandated and is extremely
15 difficult to do, if not impossible.

16 The two clarifications that perhaps
17 could be brought forth by the staff, one is
18 among the discordance discussions was a
19 discordance in terms of the dates of
20 progression that was mentioned, but you
21 didn't say how much -- unless I missed it,
22 how much discordance was discordance. If the

1 dates were a day or two different, I would
2 presume you wouldn't consider that
3 discordant. But how much of a leeway did you
4 give before you would say the dates from the
5 two sources were discordant? That's question
6 one.

7 And the other goes back to the
8 first-line metastatic approval for
9 gemcitabine and paclitaxel.

10 I wasn't entirely clear on what the
11 primary outcome for label indication there
12 was. Was it time to tumor progression with
13 reassurance that the survival was at least
14 borderline significant or did survival become
15 the primary determinant there? If you could
16 just clarify what was the major labeling
17 outcome for that approval?

18 MS. LU: This is Laura Lu. I will
19 answer the first question regarding the
20 discordance in progression date. For that
21 calculation we include any difference in
22 progression date, like including even,

1 although it is rare, one or two days
2 difference. But if there's any, it's
3 included.

4 DR. CORTAZAR: Regarding the other
5 question, gemcitabine, the basis for full
6 approval was a positive time to progression,
7 but that was supported by a strong trend
8 toward improved survival.

9 DR. PAZDUR: We were taking a look
10 at the totality of the data there and we were
11 aware of the survival impact.

12 DR. LYMAN: Are you suggesting it
13 wouldn't have been approved if that hadn't
14 been significant?

15 DR. PAZDUR: I have no idea. We
16 can't go retrospectively back in thinking.

17 DR. LYMAN: Yeah.

18 DR. HUSSAIN: Ms. Portis?

19 MS. PORTIS: Just going back, and
20 not to overly flog the issue of quality of
21 life, I know that it's a very difficult thing
22 to assess. And yet I just want to highlight

1 my point, though, that we have real data here
2 about toxic effects and they're severe toxic
3 events and there are deaths in this study.
4 And that can't be overlooked even if we can't
5 measure here quality of life, per se, if we
6 don't have a measure that does that. I've
7 made lists of the things that were in there
8 about severe toxic events and I think they're
9 important.

10 DR. HUSSAIN: Thank you. Dr.
11 D'Agostino?

12 MR. D'AGOSTINO: I just wanted to
13 maybe make comments, but make sure that the
14 sponsor is thinking the same way that we are.
15 With regard to the subsets, I'm not surprised
16 by the consistency of the subsets. What I
17 was afraid that the question was going to
18 lead to is we were going to start looking for
19 some subsets where survival looked good and I
20 hope the sponsor has no intention of doing
21 that later on.

22 The other is just to reiterate what

1 was said about the toxic events. With the
2 cardiovascular profiles getting worse and so
3 forth, you will have a potential real -- and
4 not only the quality of life, but a potential
5 increase in events and you could be exposing
6 a group with their existing problem to
7 tremendous cardiovascular problems. And
8 because of the randomization we can be pretty
9 sure that it's in this combination.

10 DR. HUSSAIN: Any other burning
11 questions? Dr. Curt? And if anybody has
12 another question, raise your hand.
13 Otherwise, once he is done, we're going to
14 stop the questions session.

15 DR. CURT: Yeah, 34 percent patient
16 loss to follow-up is certainly higher than
17 you'd like to see, but I'm wondering whether
18 or not that loss to follow-up is balanced
19 across the arms or whether there's an
20 imbalance in loss to follow-up, which could
21 further confound things.

22 DR. BOWDEN: Thank you for your

1 question. I'd like to ask Dr. Michael
2 Ostland from Biostatistics, Genentech, to
3 answer your question.

4 DR. OSTLAND: Good afternoon. I'm
5 Michael Ostland, Genentech Biostatistics.
6 Yeah, could I -- that's the slide. Oh, I'm
7 sorry, number 97 actually. It's a little
8 more focused on your question, specifically
9 about the loss to follow-up.

10 I'm sorry, 129, 129. I'm a
11 statistician, I can't get my numbers right.

12 So what this slide will show you is
13 in reference to I think the statistic that
14 was -- yeah, that's the one, thank you very
15 much. So in the FDA presentation you saw a
16 statistic, I believe it was 34 percent was
17 quoted as having PFS censoring. We actually
18 come up with 37, so a slightly different
19 number, but I think it's qualitatively
20 similar.

21 And what you see here is a
22 breakdown of that 37 percent by various

1 causes. And what you see here is no scan
2 submitted, so missing data would obviously be
3 a big part of that. But I really want to
4 draw your attention to the non-protocol
5 censoring in the third line down. So a big
6 chunk of that 37 percent that were not
7 followed up to the data cutoff date were
8 actually on account of the fact that in our
9 primary pre-specified analysis of PFS we
10 censor patients at their first instance of
11 non-protocol therapy. Since that
12 non-protocol therapy happened earlier, those
13 patients were not, by definition, followed up
14 to the end of the study. So I think you can
15 subtract those from the rate you might be
16 concerned about.

17 And I'll also just talk about the
18 last two lines there. So there's a little
19 imbalance numerically between the
20 investigator PD not confirmed by IRF, but
21 that's, you know, 6 percent overall.

22 Then the data cutoff in the last

1 line, that's actually expected that those
2 would be imbalanced due to the fact that we
3 have evidence of 50 percent reduction in the
4 risk of death. So you would expect then
5 about a 50 percent difference between those.
6 Thank you.

7 DR. BOWDEN: And if I could just
8 add -- follow-up on a previous comment.
9 There was a question about the clinical
10 benefit -- risk-benefit profile thinking
11 about cardiovascular toxicity and overall in
12 the first-line population. Dr. Winer, could
13 you comment again on that with regards to
14 first-line versus second- and third-line?

15 DR. WINER: I just want to come
16 back to this issue of first-line versus
17 second- and third- line. And I want to go
18 back to a point that you made, Dr. Hussain,
19 which is that I agree that we have to be very
20 careful in patients who don't have symptoms
21 from their disease. And there are patients
22 in the first-line setting who have symptoms

1 and patients who don't. And certainly when I
2 lecture, and when I think many of my
3 colleagues do, we emphasize that if you have
4 a patient who is asymptomatic, you're not
5 going to make that patient feel better with
6 any therapy. That's a matter for education
7 within the oncology community, both patients
8 and doctors. It's sort of a separate issue.

9 That said, I still don't understand
10 why time to progression would be a meaningful
11 endpoint -- or progression-free survival,
12 excuse me, would be a meaningful endpoint in
13 the second- and third-line setting and not in
14 the first-line setting.

15 And if I can make one last point.
16 I do believe that within the past two months
17 the FDA actually approved ixabepilone in the
18 second- and third-line setting in addition to
19 capecitabine for an improvement in
20 progression-free survival that was less than
21 two months. And while I realize that we're
22 not necessarily supposed to be comparing

1 across these agents, in terms of the
2 toxicity, in terms of the day-to-day toxicity
3 of adding ixabepilone to capecitabine versus
4 adding bevacizumab to paclitaxel, I'm
5 actually left speechless. There's no
6 comparison here. It is far, far easier to
7 add bevacizumab to paclitaxel in exchange for
8 a five-month improvement in progression-free
9 survival than to ever considering adding
10 ixabepilone for a six-week improvement in
11 progression-free survival. I'm not
12 disagreeing with the judgment about
13 ixabepilone, but I'm trying to put this in
14 context. Thanks.

15 DR. HUSSAIN: I think what you
16 raised is the low bar that we have overall.
17 And if it's up to me, I would tell you that a
18 lot of those approved drugs in the
19 second-line, if I was the president, I would
20 not approve them. Okay? So I think to
21 compare, you know, I don't want to say
22 mediocre, but suboptimal with suboptimal to

1 make a case, we could discuss that at ASCO
2 maybe. Dr. Mortimer?

3 DR. MORTIMER: I have a question
4 for the statistician. So in the negative
5 capecitabine/Avastin trial, appreciating that
6 these are totally different patient
7 populations, but the reassessments were
8 performed twice as often as they were on the
9 ECOG -- on this, the ECOG 2100 trial. And
10 the long-time interval between reassessments
11 in 2100 I think has raised some concern that
12 perhaps that does, in part, account for a
13 longer progression-free survival. And if you
14 could just comment about the difference in
15 those two trials and reassessment interval.

16 DR. HUSSAIN: Thank you. I think
17 -- does the FDA have any comments that they
18 want to make.

19 DR. KEEGAN: Well, I think one
20 trial we had input on and the other one we
21 didn't. So, you know, it's very difficult
22 for us to justify the E2100 evaluation

1 period. We didn't have an opportunity to
2 really get good input on it.

3 DR. MORTIMER: Because I guess, you
4 know, there's no question that these are much
5 -- they're very superior results and how much
6 of that can be accounted for by the frequency
7 of reassessment? And I guess I would raise
8 concern (off mike).

9 DR. BOWDEN: Pardon me. Could we
10 make a comment with regards to the question
11 as well?

12 DR. HUSSAIN: Please do.

13 DR. BOWDEN: Thank you. I'd like
14 to introduce Dr. Ostland from Biostatistics.

15 DR. OSTLAND: Thank you. Could I
16 get the PFS Kaplan-Meier curves from the main
17 deck, please?

18 Yeah, I think the issue of the
19 timing of assessments is an important one.
20 And just to hop on some comments a bit
21 earlier, yeah, I think we do need to keep a
22 very high bar for PFS. And part of that is

1 having a benefit that we can really sink our
2 teeth in and establish with confidence. And
3 yeah, if you could put that up, please.

4 And I think certainly it's true
5 that when you are assessing less frequently,
6 you run the -- you have less precision to
7 detect a small difference. And indeed a
8 priori in the setting, having a 3-month --
9 excuse me, a 12-week assessment interval gave
10 us less precision to detect a difference than
11 we had in the 2119 setting with 6 weeks. But
12 the good news is it didn't matter here,
13 clearly. The size -- it might have been a
14 very different conversation had the benefit
15 that we've seen here been on the order of six
16 weeks or two months. But I think as you can
17 see from this curve the assessment interval
18 really manifests in these sort of bumps in
19 the curve as you ride these down. Because
20 that's when patients are coming in for their
21 assessments and you tend to have progression
22 events clustering around there as they get

1 detected by the investigators.

2 So I think what we're really
3 talking about, having a more frequent
4 assessment interval, would smooth out some of
5 these bumps and give you a little bit more of
6 a refined estimate there. But I think in
7 this setting we can be really confident that
8 the magnitude of the benefit we're seeing
9 wouldn't be sensitive to that particular
10 difference.

11 Thank you.

12 DR. HUSSAIN: Dr. D'Agostino and
13 that's the last question.

14 MR. D'AGOSTINO: Yeah, and just to
15 comment. I think, you know, the question you
16 asked, it would have worked in the opposite
17 direction. It would have made the study
18 we've seen before us more significant had we
19 had more frequent, so they probably lost some
20 significance by doing the grouping.

21 DR. HUSSAIN: Thank you. Ms.
22 Hinestrosa, are you here? Excellent. Ms.

1 Hinestrosa is a representative of the Breast
2 Cancer Coalition, is that correct?

3 MS. HINESTROSA: I want to thank
4 the chair very much for the opportunity to
5 make a brief comment. And I'm compelled to
6 speak just to try to explain the absence of
7 many people in the breast cancer community at
8 this hearing. We rely on communications that
9 come to us from the Office of Special Health
10 Issues at the FDA. We realize information is
11 available in the public register, but in the
12 advocate community many of us rely on those
13 communications. We didn't receive one this
14 time, unfortunately. And we -- through the
15 grapevine people found out yesterday, so we
16 received e-mails last night are you coming to
17 this?

18 And the reason I make this comment
19 is because the absence of testimonials can be
20 a statement in itself. And the reason we're
21 not here is because we didn't know in advance
22 and we were not prepared.

1 The National Breast Cancer
2 Coalition is going to make comments and send
3 them to the FDA on these issues. We care
4 deeply about this issue and we urge the
5 committee to set the highest bar always in
6 breast cancer, for this medication or any
7 other that is considered by this committee.
8 We feel well- represented in the ODAC by
9 members of the consumer advocacy community,
10 but we ask you to really look ultimately what
11 is the value of this or any medication that
12 you're considering in breast cancer.

13 Thank you.

14 DR. HUSSAIN: Thank you very much
15 for sharing your thoughts. So now we go to
16 the questions that are posed by the FDA to
17 the committee. And if I may have, please,
18 the first question.

19 So the way we're going to run this
20 is that we'll have one question at a time.
21 After the question is read there is an
22 opportunity for committee member discussion.

1 This is your opportunity to explain your
2 thoughts because once the vote is happening,
3 I'm not going to ask why you voted this way
4 or that way. So this is your opportunity to
5 speak up if you have any points you want to
6 raise.

7 And then I will -- great, we have
8 the questions now. So the first question
9 that has been posed to us, that in the E2100
10 study PFS is not a surrogate endpoint for
11 overall survival in the first-line breast
12 cancer. The discussion that's been requested
13 from us is whether PFS alone, without a
14 demonstrated survival advantage, should be
15 considered a measure of a direct clinical
16 benefit in the initial treatment of
17 metastatic breast cancer. Dr. Buzdar.

18 DR. BUZDAR: I think that will be
19 going backward and we need harder endpoints.
20 As I pointed out in these data that
21 differences in measurable disease between the
22 two groups could even explain all these five

1 months differences by chance alone, even
2 though all the measures and everything is
3 accurate, it could be just that biology of
4 breast cancer is very heterogeneous. And we
5 need endpoints which are harder, fixed, and
6 not observer-dependent.

7 DR. HUSSAIN: Dr. D'Agostino?

8 MR. D'AGOSTINO: You know, in terms
9 of these statistics that we start off with
10 that very first line, it's not a surrogate
11 endpoint for overall survival, then what is
12 it, is really, you know, the issue. And what
13 we're hearing from basically both sides
14 around the table and the sponsor is that we
15 don't have any way of saying how it
16 translates into quality of life, how it
17 improves symptoms. Well, I don't want to get
18 into the toxicity, but we don't have anything
19 to put our hand on outside of the fact that
20 it's a measure that has been -- with an
21 appropriate measurement instrument has said
22 that it is an improvement over one group

1 versus the other. But we don't have anything
2 to pin it on in terms of what it actually
3 means. So I would think that it's very, very
4 serious that in this first-line treatment
5 that we do not buy into this progression-free
6 survival.

7 DR. HUSSAIN: Any other person who
8 wishes to make a comment? Dr. Lyman?

9 DR. LYMAN: Maybe it has something
10 to do with what breast cancer doctors eat and
11 drink, but I have a somewhat different
12 perspective on this. And clinically I think
13 there's no question among my colleagues and
14 myself that progression-free survival is
15 clinically meaningful. Having said that, it
16 challenges how much and, again, the safety
17 and toxicity side of it.

18 We have data in the adjuvant
19 setting, a different setting very clearly,
20 from a compilation of all the randomized
21 control trials in the adjuvant setting
22 conducted over the last 20, 25 years by the

1 Oxford Group, the Early Breast Cancer
2 Trialist Collaborative Group, that in their
3 most analysis demonstrated that differences
4 in disease-free survival at 5 years seemed to
5 translate into overall survival differences,
6 significant differences, at 15 years. This
7 is a different setting and I recognize that
8 may not entirely extrapolate.

9 But I do think raising the bar for
10 first- line metastatic breast cancer to an
11 unequivocal overall survival difference,
12 given the difficulty in many cases of
13 documenting, monitoring, and standardizing
14 subsequent therapies that these patients have
15 -- many of my patients after their first-line
16 approach go through five, six, seven
17 additional regimens. And that just adds
18 enormous noise and can cloud the survival
19 differences of a first-line regimen.

20 And when we see differences in
21 progression-free survival that reach a
22 certain level, and, frankly, I think this may

1 have done that, one has to wonder if the
2 survival differences aren't being clouded by
3 the fact that there were probably multiple
4 treatments done separately subsequently.
5 And, in fact, we don't know because that data
6 wasn't collected.

7 And this on top of the fact, I
8 think the point was made, that the
9 differences between managing first-line
10 metastatic disease and subsequent second- and
11 third-line therapies really in the last few
12 years has become very, very cloudy as well.
13 And that has to do with the fact that the
14 vast majority of patients that come to me for
15 first- line metastatic treatment have had an
16 anthracycline, they've had an alkaloiding
17 agent, they've had a taxane. If they're
18 HER2-positive, they've had Herceptin and
19 often other agents. So they come in already
20 fairly extensively treated before --
21 admittedly in the adjuvant setting, before I
22 see them for first-line metastatic disease.

1 And I'm not sure that population overall is
2 any different than a patient who comes back,
3 a recurrence after their first line of
4 metastatic failure.

5 So obviously, again, there may be
6 -- I mean, I wouldn't go out and suggest that
7 we start setting different rules for
8 different malignancies.

9 Obviously we need something that
10 can extrapolate across diseases. But from
11 the breast cancer management perspective, I
12 find progression-free survival to be a fairly
13 compelling endpoint.

14 DR. HUSSAIN: Dr. Eckhardt?

15 DR. ECKHARDT: Yes. You know, I
16 think that PFS over response rate and the
17 ability to look at durability of that disease
18 status is one that is a real advantage. And
19 I think really what we're struggling with is
20 the measurement. And I think here the
21 concern is clearly in patients that have
22 bone-only diseases that, you know, it becomes

1 more and more difficult to really set the
2 time of progression.

3 But I also am struggling a lot with
4 the survival endpoint and front line because,
5 you know, I think that what we've seen here
6 is a fairly robust response rate and PFS.
7 And, you know, the question -- I think we
8 could say, well, that's why randomized
9 studies. But if you look at again the
10 control arm essentially going from 11.7
11 months for a single agent taxane to 24.8
12 months in 10 years, it's hard to make the
13 case that that's patient selection. I really
14 think some of that can be due to salvage
15 therapies and the variability of application.

16 And for instance, if you just ask,
17 well, would the physician take a patient here
18 that had had a taxane, would they give them
19 cape -- docetaxel? Would they go ahead and
20 add gemcitabine to capecitabine to a patient
21 that has failed? A taxane -- I think there's
22 a million different ways that post-protocol

1 therapy could be applied. And I think that
2 it is very difficult to say that just because
3 it was a randomized study that that should be
4 equivalent between the two arms.

5 So I'm really struggling with -- I
6 do think it's a clinical benefit parameter.
7 The measurement bothers me and I think,
8 again, the overall survival just in terms of
9 what's happened in the past 10 years even to
10 the control arm really to me signifies that
11 there is something there with regards to
12 variability of second- and third-line
13 therapy, which really has implications I
14 think going forward in front-line metastatic
15 breast cancer.

16 DR. HUSSAIN: Dr. D'Agostino?

17 MR. D'AGOSTINO: I guess I'm
18 reading this question only in terms of
19 first-line breast cancer.

20 And I think we -- you know, I think
21 we have to be careful that we say it's
22 clinically meaningful and then describe a

1 completely different set of parameters to
2 interpret that.

3 You know, I'm a statistician and
4 not an oncologist, but I've lived through all
5 of these discussions where we pull up a
6 surrogate and we know, you know, reducing
7 arrhythmias is great. And then we get drugs,
8 you reduce arrhythmias, and you kill people.
9 I mean, there are lots and lots of examples
10 where surrogates and intuition doesn't work
11 and where clinically meaningful in one set of
12 outcomes doesn't really translate. And my
13 response earlier was solely for this
14 first-line breast cancer, and I thought
15 that's what we were being asked.

16 DR. HUSSAIN: Dr. Mortimer?

17 DR. MORTIMER: I'm going to
18 reiterate what Dr. Lyman said. I think
19 progression-free survival is an important
20 endpoint. And I think as we talk about
21 first-line therapy today, again, to reiterate
22 what Dr. Lyman said, most of these women have

1 been heavily pretreated. And so, in fact,
2 very few truly are first-line therapy, making
3 it harder I think to expect overall survival
4 advantage.

5 I happen to be of the school that
6 outside of trastuzumab I don't believe that
7 any chemotherapy alters overall survival.
8 And I think this just reflects that we don't
9 know who the subsets are who truly benefit
10 from each of these different therapies. And
11 I think it would behoove us to find out who
12 the subsets are who potentially might be in
13 this group. But from a patient perspective,
14 progression-free survival I think is a very
15 meaningful endpoint for second- and
16 third-line therapy.

17 The other thing I'd like to say,
18 again, reiterating what Dr. Winer said, is
19 ixabepilone was approved with a 70 -- and I
20 appreciate this is second- and third-line
21 therapy, but with a 70 percent incidence of
22 neurotoxicity and a 65 percent incidence of

1 Grade 3 myelosuppression. And I think that
2 we're being inconsistent here.

3 DR. HUSSAIN: Dr. Buzdar?

4 DR. BUZDAR: Yeah, one point I
5 disagree, that the thing is that if you look
6 at the survival, the issue which was being
7 raised is all because there is heterogeneity
8 in the therapies. These patients who were on
9 this protocol, the majority of these patients
10 were treated in the U.S. So we can't talk
11 out of both sides of the mouth, saying that,
12 oh, maybe patients got a different type of
13 therapy upon progression. These patients are
14 uniformly being treated in the U.S., and most
15 of the practice is very similar. Because
16 these are the patients who are treated by
17 selected investigators and their practice
18 pattern should be very, very similar. That
19 should not be the only reason that why we
20 didn't see the survival advantage. I think
21 we have to look for other reasons that why
22 there is progression-free survival and there

1 is no advantage in survival.

2 DR. HUSSAIN: So I am also
3 struggling with it and I wonder if there is
4 like a middle of the road thing in terms of
5 approval. So this is just a thought I'm
6 going to throw at you, the FDA.

7 You know, I respect my colleagues'
8 opinions about progression-free survival.
9 And there's no question if I'm in the clinic,
10 my psychology is much improved when my
11 patient is not progressing, not to mention
12 their psychology is, and there's no way to
13 capture that as a clinical benefit.

14 I also come from a field whereby
15 there has been at least one or two examples
16 where early positive indications did not
17 translate. And I don't want to bring drugs'
18 names here, otherwise I'll be written up
19 again. But did not translate actually into a
20 survival advantage. If anything, despite
21 early therapy in populations with drugs that
22 should not have harmed them, indeed resulted

1 in worse survival. And therefore, if you
2 ignore the survival and you've just gone by
3 response or progression-free survival, you
4 would have actually put harmful drugs in the
5 market. And then, of course, in medicine
6 there is numerous examples.

7 And I'm wondering if there is a way
8 of coupling an approval process with at least
9 equivalent survival, understanding that
10 equivalence is hard to prove. But maybe a
11 non-inferiority or something whereby, yes,
12 the progression is delayed and, by the way,
13 you have to have survival data and that you
14 have to show that there is really no
15 significant chance of a harm. Because I do
16 think that I look at the drug and I can't
17 disregard the toxicity, with all due respect
18 to all the experts here. I would say that a
19 little nausea is not like a Grade 3
20 hypertension or a stroke or a perforated gut
21 or a bleeding. And I think that a patient
22 who's in the ICU, no one's going to check

1 their quality of life. And so we really have
2 to be very careful, you know, in terms of the
3 statements we make.

4 But is it possible to couple it
5 with some other measure that says you have to
6 prove one and two? And then, well, okay, you
7 don't have to prove survival superiority, but
8 at least that there's no harm.

9 DR. PAZDUR: You have to show
10 safety and efficacy to get the drug approved.
11 And in many situations, for example adjuvant
12 breast cancer, we would approve a drug on a
13 disease -- or disease-free survival endpoint
14 with the sponsor basically looking at or
15 submitting subsequent data to make sure that
16 there's no harm to overall survival. So yes,
17 we don't -- we want to make sure that no new
18 therapy is producing a decrement in survival
19 because that's going backwards here. We have
20 accepted, as I said before, you know, and
21 we've made it quite clear that PFS is -- we
22 have approved drugs not only in breast

1 cancer, but in other disease settings,
2 usually in the refractory disease setting.

3 Here again I think you're grappling
4 with a concept here. You're trying to say --
5 enunciate what is this clinical benefit, and
6 perhaps you know in your heart that it may
7 be, but you're having a difficulty in kind of
8 enunciating it or really clarifying what it
9 is. And I get this feeling from hearing
10 several people here.

11 DR. HUSSAIN: The other concern I
12 have, if you do not look at survival, is you
13 cannot capture bad events that might happen
14 after patients have been removed from study,
15 which I go back and say something bad
16 happened that led -- I really truthfully have
17 not yet heard any credible evidence that says
18 post-protocol therapy impacts outcome. In
19 fact, if that's the case, then there should
20 be never a positive trial in breast cancer,
21 and that's not true. If there's a disease
22 that has numerous active agents in it, it is

1 breast cancer. And yet you were able to show
2 a survival advantage in colorectal cancer.
3 And other -- gemcitabine and Taxol had the
4 trend in an era where there are other agents.
5 And so I'm not so sure that I buy that
6 argument.

7 But I really would encourage the
8 sponsors in the future is to make sure that
9 as much data is collected as possible to make
10 sure that that hypertension in someone who's
11 borderline heart failure did not, three
12 months after study registration, lead to
13 their death. And anytime you have a cancer
14 patient who dies with metastatic cancer, you
15 know what the likelihood is going to be that
16 this is going to be recorded secondary to
17 cancer. And so there may be subtle harmful
18 effects that are not being picked up and may
19 explain why your survival is not different.

20 DR. SCHENKEIN: David Schenkein,
21 Genentech. Just to address that. We agree
22 with you and that's why we're very committed,

1 as I mentioned earlier, not only to continue
2 to study Avastin in breast cancer with many
3 ongoing studies, but also in the other
4 diseases in which we've already received
5 approval, both in colorectal cancer and lung
6 cancer.

7 We continue to follow these
8 patients. We follow them both in clinical
9 trials and in disease- specific registries,
10 where we follow these patients long after
11 they've completed their protocol therapy, so
12 we can look for those late signals that may
13 occur. So we have made that commitment and
14 will continue to do that not only in diseases
15 that we've already achieved approval, but
16 also in breast cancer.

17 DR. HUSSAIN: Ms. Portis?

18 MS. PORTIS: Yes. I agree that we
19 absolutely have to raise the bar in terms of
20 safety and that that's very important.
21 Otherwise, there have been mistakes made in
22 the past and they have caused people their

1 lives. And I know that everyone wants to
2 offer women with metastatic breast cancer
3 hope, but I don't think we should offer false
4 hope.

5 And I hear that there's been
6 inconsistencies perhaps that things have been
7 approved in the past, but I don't think
8 that's a reason to go forward and make a
9 similar mistake if, in fact, that's a
10 mistake. So I just think it's important that
11 we hold that in our mind.

12 DR. HUSSAIN: Thank you. Dr.
13 Eckhardt?

14 DR. ECKHARDT: Well, I mean, I
15 would just go back to a comment where I think
16 I would be willing to say that PFS is an
17 adequate endpoint for clinical -- or does
18 include clinical benefit. I think really
19 what I'm struggling with and many of us are
20 struggling with is the measurement in these
21 kinds of studies. And, you know, I think
22 that's going to be something that will have

1 to be decided going forward as to whether --
2 you know, I think in this trial, because it
3 was something that initially started out as a
4 non-pivotal trial, certainly there were a lot
5 of variabilities in there, including the 30
6 percent lack of follow-up. So I think -- I'd
7 hate to see us throw out the whole endpoint
8 just based on the fact that this was a fairly
9 difficult to apply endpoint in this kind of
10 setting.

11 DR. HUSSAIN: Dr. Lyman?

12 DR. LYMAN: Yeah, I just want to
13 make sure that we have this in context.
14 Women with metastatic breast cancer are being
15 treated with Avastin every day in combination
16 with chemotherapy, second-, third-line, or
17 later therapy. So the real issue is whether
18 we have an indicator, like progression-free
19 survival, that says it's safe to do that and
20 efficacious to do that first line.

21 As I've already stated, I think
22 that most breast cancer oncologists and I

1 would dare say most breast cancer patients
2 probably would accept progression-free
3 survival as a reasonable endpoint.

4 And Rick made the point in the
5 adjuvant setting, I mean, certainly Arimidex
6 and some of the hormonal therapies, were
7 approved not based on survival difference,
8 which ultimately needed to be looked at and
9 should be required to be submitted, but were
10 approved based on disease-free survival,
11 again the early stage kind of surrogate for
12 progression-free survival in the metastatic
13 setting.

14 So, you know, I really think we've
15 got a legitimate efficacy point here and
16 we're all wrestling with was it measured
17 correctly and was the toxicity or the
18 risk-benefit justifiable. And I think that
19 gets us into the second question.

20 DR. HUSSAIN: But Dr. Lyman, are
21 you arguing that -- because the question as
22 it's posed by the FDA is, if you forget about

1 what was presented, this is more of a
2 philosophical question, are we now saying
3 that for anyone who is to do a trial with a
4 new agent that they can get away without a
5 survival also data collected? That we now
6 are not going to require survival? We're
7 going to say if you show progression-free
8 survival improvement, therefore, this is a
9 home run and we're done. Because I'd like
10 that clarified. It is my understanding that
11 a lot of us still consider survival as the
12 gold standard.

13 DR. LYMAN: No question survival is
14 the gold standard. I would argue I think
15 reasonably that first-line metastatic breast
16 cancer may be one of the most challenging
17 settings to show that because of the fairly
18 -- not compared to other diseases, GU and so
19 forth, a relatively lengthy disease course
20 after the development of metastatic disease
21 and the multiple regimens that they get
22 placed on. So whether it should be

1 extrapolated to all settings and so forth,
2 I'm not -- I have some discomfort as well.
3 But in this setting I think it's very clearly
4 a clinically significant and important
5 endpoint.

6 And I think where I would encourage
7 we go with it -- and I liked, in fact, your
8 suggestion that maybe we need to couple it
9 with some documentation that there's no
10 worsening of survival as well as no
11 tremendous increase in toxicity. But I think
12 it still doesn't negate the fact that this is
13 an important clinical endpoint.

14 DR. PAZDUR: Let me guarantee you
15 that we would demand that the sponsors
16 provide survival data as a follow-up. That
17 would -- that is not even a question here.
18 If we are going to be approving these drugs
19 and progression-free survival it isn't
20 progression-free survival and then let's
21 forget about it.

22 The way we're wording this question

1 is, you know, the situation if you have
2 progression-free survival -- and perhaps
3 their survival is in this case where we don't
4 see the advantage here. That's what we're
5 really talking about, not a disadvantage,
6 okay. If we saw an inferior survival we
7 wouldn't even be here.

8 DR. HUSSAIN: Well, but my concern
9 is this. If you're going to somehow begin to
10 say progression-free survival now is the
11 primary endpoint for everything, then studies
12 will never be powered for survival. Sample
13 sizes go down, follow-up time goes down.
14 And as you know --

15 DR. PAZDUR: Let me assure you in
16 our discussions with sponsors on this, okay,
17 when we are negotiating a progression-free
18 survival, whether it be -- and here, again,
19 these conversations are usually in the more
20 refractory disease settings, we ask them to
21 power the trial to ensure that we could take
22 a look at overall survival and obviously

1 you're going to need larger numbers of
2 patients to show a survival advantage. The
3 reason behind that is obviously if we never
4 ask the survival question, we'll never see
5 the answer. And as you pointed out, and we
6 have repeatedly mentioned this to sponsors
7 and also at ODAC, if we go on a slippery
8 slope of having smaller and smaller trials,
9 then we're really doomed to failure here.

10 So we would require not only a look
11 at survival, but we've also recommended
12 basically powering for overall survival and
13 perhaps looking at the endpoint of PFS as the
14 approval endpoint. But if you do demonstrate
15 obviously a survival advantage, that would be
16 quite a marketing advantage for the drug.

17 The disadvantage of that, for the
18 members here in the audience, is that when
19 you do overpower a trial for progression-free
20 -- for -- because you're powering it for
21 survival, you may get a statistically
22 significant finding for PFS and it could be

1 relatively marginal. And then we really have
2 to have very careful discussions about what
3 is the clinical meaningfulness of a very
4 small impact on progression-free survival
5 that may be highly statistically significant.

6 DR. HUSSAIN: Isn't that why you
7 have ODAC?

8 DR. PAZDUR: Oh, yes.

9 DR. HUSSAIN: Dr. Link?

10 DR. LINK: I was just going to ask
11 if there was a signal anywhere in this trial
12 that the survival was worse? It was better,
13 just not statistically better. So in other
14 words, you're sort of -- you know, I don't
15 see that we're worried so much now that
16 there's an inferior outcome in terms of
17 survival that we even see here.

18 The second question I had is how
19 are you going to control for what happens to
20 a patient after relapse? So I can think of
21 scenarios, which happens in pediatrics all
22 the time, how you can shorten a patient's

1 survival once they fail their primary therapy
2 by doing some sort of, you know, bone marrow
3 transplant kind of thing. And if that
4 happens after that, you will definitely
5 shorten survival. And so you could actually
6 be totally misled. You could have a program
7 which is actually very useful and clinically
8 meaningful in terms of event-free survival or
9 progression-free survival, whatever you want
10 to measure, but then you can blow the
11 survival advantage by what you do
12 post-relapse.

13 DR. PAZDUR: One would hope in a
14 randomized study those disasters would be
15 allocated randomly between the two arms.

16 DR. LINK: Well, you may have more
17 patients in the --

18 DR. PAZDUR: It could be.

19 DR. LINK: -- inferior event-free
20 survival arm that get that there if you --

21 DR. PAZDUR: Could be, but one --
22 that's the process of randomization.

1 DR. HUSSAIN: Dr. D'Agostino?

2 MR. D'AGOSTINO: I just would like
3 to know what the clinical benefit is in this
4 setting outside of the fact that it's
5 progression-free survival. I haven't heard
6 anybody say any clinical benefit outside of
7 the measurement of progression-free survival.
8 Shouldn't we sort of give a little list on
9 why we think progression-free survival in
10 this context has some clinical benefit
11 outside of, let's say, the measurement
12 itself?

13 DR. HUSSAIN: Because they pay me
14 --

15 MR. D'AGOSTINO: It doesn't lead to
16 survival in this study.

17 DR. HUSSAIN: Yeah. No, I know.
18 Because they pay --

19 MR. D'AGOSTINO: It doesn't lead to
20 quality of life.

21 DR. HUSSAIN: They pay me as the
22 chair, so I'm going to take a stab at this,

1 but I'm going to welcome others. I think
2 part of the problem is that we have no way of
3 measuring some subtle issues that are of
4 benefit. So those of us who sit in the
5 clinic in front of patients, I will guarantee
6 you there is not a tool out there that
7 captures the nightmares, the sleepless
8 nights, the worry about scans by the time
9 they come. And so if one wants to be removed
10 about it and just put party line in terms of
11 things you can measure, I agree with you that
12 there is really no clinical benefit. And
13 that's why I was trying to put the pressures
14 on Dr. Winer to tell me where there is the
15 clinical benefit in the traditional context,
16 and there isn't. There's no disagreement
17 there.

18 But isn't it -- for those of us who
19 are clinicians, when you sit with patients,
20 assuming therapy is safe, and I have a
21 question with safety because I'm not so sure
22 it's that safe, but if you put that aside,

1 patients are a nervous wreck when their
2 disease is progressing. And that you have no
3 tool to measure. So it is one of those
4 intuition things, which you just said it
5 cannot be by intuition. Unfortunately,
6 that's a question we face every day when
7 we're at the clinic.

8 I don't know if anybody else wants
9 to take a stab at that. Dr. Lyman and then
10 Ms. Mason after Dr. Lyman.

11 DR. LYMAN: Yeah. I mean, my -- I
12 don't think you're going to find the data
13 there in breast cancer that's going to
14 convince everybody. A couple of recent
15 elegant studies in the metastatic colorectal
16 setting done by, in fact, statisticians have
17 demonstrated across multiple trials in the
18 metastatic colorectal setting as very strong,
19 highly significant correlation between
20 progression-free survival and ultimate
21 overall survival. This is a setting where
22 there's many fewer options for subsequent

1 downstream therapies, so conceivably it could
2 be that you're going to have less blurring
3 and muddying of the early treatment's
4 survival impact in that setting. But there's
5 just not much out there that I'm aware of.

6 MR. D'AGOSTINO: So is it on the
7 hope that it makes sense? Sort of the model
8 that you would have says that we think
9 ultimately survival will improve? We don't
10 have it now. Is that where we're getting the
11 clinical benefit from?

12 DR. MORTIMER: Well, response rate,
13 you know, people who hurt have less pain.
14 People who are short of breath have less
15 shortness of breath.

16 MR. D'AGOSTINO: Well, response
17 rate is one thing that turned out to be
18 significant. Is that something?

19 DR. MORTIMER: And that's
20 consistently been a signal.

21 MR. D'AGOSTINO: I'm just looking
22 for is there some list?

1 DR. HUSSAIN: Any other comments
2 from the committee members? Ms. Mason, I'm
3 sorry, yes.

4 MS. MASON: Just wanted to share
5 that since I represent the consumer, but I'm
6 also a survivor, and so I'm seeing this from
7 a lot of different angles. And clearly, as
8 you stated, you know, when you're a clinician
9 or a patient looking at these issues, it's a
10 very, very difficult place to be. There are
11 not a lot of options for patients, especially
12 the HER2-negative population, in terms of
13 what to do with metastatic disease. And it's
14 so hard when we're looking at whether you're
15 talking about first-line metastatic treatment
16 or later because of the pre-treatment for
17 initial breast cancer. Yet, I am also
18 concerned about the toxicities and whether we
19 lowered our standards more and more. There's
20 been some comments to that effect.

21 So I think for myself I have a very
22 difficult time choosing which side, since I

1 have to choose a side, where I want to fall
2 on this. Because either way, you know,
3 you're making some very difficult decisions
4 based on people and their outcomes.

5 DR. HUSSAIN: Thank you. Any other
6 comments? Dr. Pazdur, do you have all the
7 discussion you want on this?

8 DR. PAZDUR: I think so. We can
9 move on to the voting question.

10 DR. HUSSAIN: Excellent. So this
11 question is not a voting question. We're
12 going to go now to the voting question, which
13 they'll have up in a moment. Okay. So
14 Question 2, Summary Results, estimated
15 5.5-month improvement in median
16 progression-free survival claimed by
17 Genentech. No improvement in overall
18 survival. Increased toxicity/toxic death.
19 No effect on progression-free survival or
20 overall survival in the second- and
21 third-line metastatic breast cancer. Are the
22 data provided sufficient to establish a

1 favorable risk- benefit analysis for the use
2 of bevacizumab plus paclitaxel for first-line
3 treatment of patients with metastatic breast
4 cancer?

5 So we're going to also take time to
6 discuss this question, and this is a voting
7 question. Once we're done I'll tell you what
8 the rules are about voting. So who wants to
9 take a stab at this one? Dr. Buzdar?

10 DR. BUZDAR: Yeah. I think the
11 thing which we have to -- when we vote, we
12 have to look at the data in totality, that
13 what -- first thing, the study which turns
14 out to be positive was not designed for FDA
15 approval. The study, FDA's reviewers have
16 pointed out a number of shortcomings.

17 There's no study which is perfect.
18 We are all clinicians and all patients are
19 humans, so there are going to be
20 shortcomings, but there are major
21 shortcomings in this study. So I think we
22 have to keep that in mind, that a single

1 study which shows one endpoint which is
2 positive, there are other studies which do
3 not support that.

4 The thing is that are we enhancing
5 the patient's choices? Here we're putting
6 something which is of not established value.
7 It may be of value. But the data -- I think
8 we have to look at it critically that is the
9 data which is available today, does it meet
10 the standard to put the drug on the market
11 and change the label?

12 DR. HUSSAIN: Anyone else wants to
13 make a comment or discuss this question? Dr.
14 Lyman?

15 DR. LYMAN: Since I'm getting in
16 trouble I might as well continue. This is
17 actually to me a more difficult question
18 because of the nature of the data and, as was
19 alluded to, probably designed and run
20 initially without anticipation of a label
21 extension. I do think, as I've stated
22 before, that in this context a 5-1/2-month

1 difference in progression-free survival is
2 clinically meaningful.

3 Certainly it's statistically
4 significant and seems to hold up through a
5 variety of both FDA and sponsor sensitivity
6 analyses.

7 It is true that there's not a
8 significant if it's an overall survival, but
9 there certainly is a trend. Statisticians
10 don't like trends, but it at least assures me
11 to a large extent that subsequent studies'
12 design may be a little bit better, whatever,
13 would show any worsening of survival. I
14 think the probabilities, if we ran the
15 numbers, would be extremely low that this is
16 such an extreme false signal.

17 So the real question in my mind and
18 where I'm really having most difficulties
19 with the toxicity and are we doing any harm
20 or not. And that's why I asked the questions
21 earlier about how well we can adjust the
22 differences in the arms, the toxicities in

1 the arms, to how much is the addition of
2 Avastin to a drug that is used in the
3 first-line setting and how much is the fact
4 that the patients didn't relapse for an
5 additional 5-1/2 months? They stayed on
6 treatment in the majority of those cases.

7 And obviously that can -- certainly
8 for the neuropathy, that may completely
9 explain the differences that were observed
10 there.

11 There are others that are
12 Avastin-specific toxicities, but as has been
13 pointed out, they are not new. They were
14 there when it was approved for second- and
15 third-line metastatic setting. Do we really
16 need to make a distinction in terms of those
17 are unacceptable in the first-line setting
18 and not in the second- or third-line setting?
19 Keeping in mind these are all metastatic
20 patients. With the exception of that 1 to 2
21 percent that were local regional, it's very
22 unlikely any of these patients will not die

1 of breast cancer or some other co-morbidity
2 or accident or whatever. It is a fatal
3 disease.

4 And we have to put in context if we
5 can prolong, almost double -- actually more
6 than double the median survival in these
7 patients or nearly double the median
8 survival. You know, yes, they will go on to
9 die. Those curves will come together as they
10 do downstream. And if you follow patients
11 long enough, the curves come together at the
12 baseline.

13 So I am certainly not at all as
14 convinced here, but I would -- I'm leaning
15 towards voting yes on this.

16 DR. HUSSAIN: Dr. D'Agostino?

17 MR. D'AGOSTINO: Yeah, just to
18 reiterate some of the comments that I was
19 making before, that there is no improvement
20 in overall survival. If the survival went
21 the other way, we wouldn't have the
22 presentation before us. If the survival were

1 really with a P value of .98 or something, we
2 wouldn't have it. We have it before us
3 because it looks like there might be a signal
4 and all of us have lived through chasing
5 after signals and their flattening out.

6 So I don't think we really can say
7 that there's a trend there. There might be,
8 but the data isn't -- shouldn't convince us.
9 The toxicity I think is a real problem. So
10 putting this in, you know, sort of as a
11 package of all these different comments that
12 are made, I think that our approval would
13 rest completely on buying into the
14 progression-free survival as an appropriate
15 measure of efficacy. And I don't think we
16 have that ability at the moment given the
17 data that's before us.

18 DR. HUSSAIN: Okay, Ms. Portis?

19 MS. PORTIS: Well, I see that the
20 question really is about is the data provided
21 sufficient to establish a favorable
22 risk-benefit ratio? And I really take that

1 question to heart. And I know I keep
2 probably saying the same thing over and over
3 again. And absolutely, it's a very painful
4 reality that metastatic breast cancer is not
5 curable. And I don't think that means then
6 that we should just say, well, here, try
7 this, if there isn't meaningful data to
8 support it. And in this study as presented
9 there is missing data. There are
10 inconsistencies and I remain very
11 uncomfortable about that. And that along
12 with all the comments that I've made and
13 others have made about the toxicity, I think
14 that that is too high a price to pay.

15 DR. HUSSAIN: I guess when I looked
16 at the data first before the discussion, I
17 was really impressed by the overall survival.
18 And then we began to see the holes, one hole
19 after the other, one piece of information
20 that is incomplete. And so if things were
21 not perfect, but semi-perfect, I would have
22 been willing to vote yes.

1 I am leaning to a no vote because I
2 think there are too many uncertainties in the
3 way the data was collected, the discordance
4 as far as imaging, the fact that things were
5 not set up from the beginning for a
6 registration so that you have everything done
7 in a line that makes the case. And so I
8 think that a vote of a yes today on something
9 like that to me lowers the bar.

10 I think there are other agents out
11 there that are available for this patient
12 population. I fully recognize that it's
13 imperfect, but I don't think we could
14 sanction suboptimal conduct of trials
15 necessarily. And I have the utmost respect
16 for ECOG. I work with SWOG and I know the
17 limitations and the strengths of the
18 cooperative groups. But I think that what we
19 saw today in terms of deficiencies is
20 concerning enough for me that I would -- it
21 takes away from the positive results
22 otherwise.

1 Anyone else who wishes to discuss
2 the nature of their vote? Because that's
3 your opportunity.

4 Okay, so before we go to a vote is
5 there anything else, Dr. Pazdur, that you
6 need discussion- wise?

7 DR. PAZDUR: No.

8 DR. HUSSAIN: Okay. So as I
9 understand it we're going to vote first those
10 who say yes. And again, the question is are
11 the data provided sufficient to establish a
12 favorable risk-benefit analysis for the use
13 of bevacizumab plus paclitaxel for the
14 first-line treatment of patients with
15 metastatic breast cancer?

16 What I'm going to ask is those who
17 want to vote yes to raise your hands
18 simultaneously, keep your hands up in the
19 air, and then one-by-one mention your name,
20 and just for the record say that your vote is
21 yes so that they can capture that in there.

22 So I guess on a count of three

1 we'll raise our hands. One, two, and three,
2 those who are voting yes, please raise your
3 hands. Okay, can you -- this is -- keep it
4 up, please. And for the record state your
5 name and that your vote is what.

6 DR. LYMAN: Gary Lyman, I would
7 vote yes on Question 2.

8 DR. MORTIMER: Joanne Mortimer and
9 I'm voting yes on Question 2.

10 DR. ECKHARDT: Gail Eckhardt, I'm
11 voting yes on No. 2.

12 DR. LINK: Michael Link, yes on No.
13 2.

14 DR. HUSSAIN: So now those who are
15 voting no to Question 2, raise your hands.
16 And then I'll begin with Dr. Buzdar. Please
17 state your name and --

18 DR. BUZDAR: Dr. Buzdar, I'm voting
19 no.

20 MR. D'AGOSTINO: Ralph D'Agostino
21 voting no.

22 MS. PORTIS: Natalie Portis voting

1 no.

2 MS. MASON: Virginia Mason voting

3 no.

4 DR. HUSSAIN: Hussain, no. And
5 then we'll tally the vote and we'll give you
6 the final vote.

7 So we have four for yes, five for
8 no. Thank you.

9 Is there any other thing, Dr.
10 Pazdur, before we adjourn this component of
11 the meeting?

12 DR. PAZDUR: No, thank you.

13 DR. HUSSAIN: Okay. Thank you,
14 everyone. The committee will have a closed
15 session, so those who are not members of the
16 committee will have to leave. Thank you.

17 Yeah, we'll have a 10-minute break
18 for the committee.

19 (Whereupon, the PROCEEDINGS were
20 adjourned.)

21 * * * * *

22

