competing events, such as death from other causes. Such analyses were precluded by the lack of information on the cause of death for all patients. Furthermore, the definition of second primary lung cancer remains controversial. Although the criteria of Martini and Melamed are the most widely used, they may misclassify some tumors, leading to inaccuracies in rates of recurrence and second primary lung cancer. However, it is still crucial to distinguish second primary tumors from relapse in clinical practice because of the significant differences in their treatment and prognosis. Last, surveillance scans were performed at predefined intervals. Recurrences may develop in between CT scans and clinic appointments. Interval censoring may lead to an overestimation of time to event in our analysis.

CONCLUSIONS
Routine CT surveillance detected the majority of recurrences, as well as the majority of second primary lung cancers. We found that the rate of recurrence remained elevated until 4 years after surgery, which is in contrast to the conventional wisdom. False-positive surveillance scan results led to subsequent invasive procedures for only 5% of patients. Most of the second primary lung cancers were detected at early stages, and more than half of patients underwent surgical resection. On the basis of our results, we support the use of CT surveillance for survivors of early-stage NSCLC. However, the optimal interval between surveillance scans remains subject to further study.

References
5. Walsh GL, O’Connor M, Willis KM, Milas M, Wong RS, Nesbitt JC, et al. Is this a reflection of the staging of the patients before they underwent surgical resection. The next question I have pertains to imaging of patients for follow-up. If we all agree that CT is pretty good, and down deep in my heart I think that CT probably is better than chest
x-ray at following patients postoperatively, do you think that might be even better than CT?

Dr Lou. Although PET scan has not been part of any of the organizations’ guidelines for surveillance, it recently has been investigated by some groups in Korea and the United States. The last study that I found actually gave patients both CT scan and PET surveillance, and they found that the PET scan was able to detect a few percentages more of recurrences, most of which were distal. However, when compared with CT scans, PET scans also missed a few cases, especially when these masses are localized to the lung if they were small or ground-glass opacities. So there are pluses and minuses of PET scans, and I think more studies are warranted in this area. But one must be cautious in interpreting these studies, because the question of which is the superior modality should be the actual effect on survival and patient-oriented outcomes instead of only slight improvement in detection sensitivity.

Dr Grondin. My last question has to do with survival. That is the elephant in the room. It is great to do imaging studies such as CT, but at the end of the day is there any improvement in survival? I noticed that approximately three quarters of your patients had distant metastases detected by CT. I am not aware of any data that treating this subgroup of patients significantly extends survival. What are your thoughts on whether this early detection of recurrent disease with CT will translate into a survival advantage?

Dr Lou. This is something we thought of extensively as a group. Again, there have been no prospective randomized trials looking at the exact effect of earlier detection by surveillance programs. However, at least for second lung primaries from our studies and some previous series, you can see that most of them were able to be detected in the early stage when curative therapies could be given. It could be inferred that this kind of early detection would lead to a survival benefit in those with a second primary tumor, but again prospective verification is needed. However, it is more controversial when you are talking about recurrences because most patients with recurrences can only receive palliative therapy, so the question of whether that kind of therapy would be more beneficial if given a few months or weeks before would actually affect long-term survival is more controversial and definitely needs to be studied. We should not make a judgment on that before prospective studies are done.

Dr Grondin. Thank you, and great job.

Dr Robert Shen (Rochester, Minn). I noted that 25% of patients with a second primary lung cancer were treated with external beam radiation therapy rather than surgical resection. Do you have a sense of how many of those patients were medically ineligible or thought to be medically ineligible for further surgery or were offered surgery and refused? A corollary to that is what is your institutional algorithm for a patient who is thought to have a second primary? Is the patient offered surgery as the first treatment or is it thought to be equivalent to offer stereotactic radiation?

Dr Lou. With regard to second primary lung cancers, it is always interesting to look at the outcomes and their treatments. We do not have the exact numbers and the exact reasons why these patients received surgery versus another treatment; however, I would suspect a lot of these patients having undergone one surgical resection already may have limited physiologic and respiratory reserve, which may limit their ability to undergo surgery, but that is just a general sense of what I think happened. In terms of how the decision was made exactly in each case, it was most likely dependent on each radiologist and surgeon, but it is our institution’s practice that whenever a second primary lung cancer is detected, the best alternative should be surgical resection if tolerated.

Dr Frederic Grannis (Duarte, Calif). This is the second of 2 important articles presented during this meeting on metachronous lung cancer, and, although they are single institution reviews, when those single institutions are Mayo Clinic and Memorial Sloan Kettering, people have to pay close attention. I think yours is the stronger study because it relies on a defined diagnostic regimen, and I think the evidence is stronger, but I have a problem. Your second author, Dr Peter Bach, authored an article in The Journal of the American Medical Association last month in which he published lung cancer screening guidelines for the American College of Chest Physicians and American Society of Clinical Oncology. In those guidelines he ignored his own data presented today by omitting this important ultra-high risk group of people from lung cancer screening guidelines. I think this will have adverse consequences and that lives will be lost because of that omission. So when you return to New York City, please ask Dr Bach why he omitted his own data in writing the American College of Chest Physicians and American Society of Clinical Oncology guidelines.

Dr Lou. Thank you.