Day 2 Cutting Edge Research

Sarah Hudson Sholey [spelled phonetically]:
Hi. My name is Sarah Hudson Sholey. I'm Assistant Vice President for Research at the
National Committee for Quality Assurance, and I'm delighted to be chairing this session.
We're going to be presenting to you some research findings from the work that's been
done related to the CAHPS, HOS, and HEDIS data sets.

First off Mark Elliott [spelled phonetically] who is a statistician at Rand will be
presenting. Mark leads the CMS Medicare CAHPS Analysis project. He's a very
experienced in analyzing data from the CAHPS Survey, both at the health plan, hospital
and other levels, as well as a lot of research in other methodological areas. And he'll be
presenting some findings from the 2007 Medicare CAHPS Survey.

Next Judy Ing [spelled phonetically], who is a research scientist at NCQA and works
with me will be presenting some research from the health outcomes survey. Judy is an
expert in the HOS and Medicare, and her study today is going to be focusing on some
new HOS measures and looking at how performance rates vary among vulnerable
populations. I think you'll enjoy her presentation as well.

And then I'll come up at the end, and I'll be presenting some analysis that we've done to
look at the relationship between performance on HEDIS quality of care measures at the
health plan level, and what the outcomes are for members of those health plans over time.
So I think you'll find this to be an enjoyable session. We're going to try to have the
presentations last about 15 minutes each so that we can have questions at the end, okay?
So I'll turn it over to Mark then. Thank you.

Mark Elliott:
So what I'm going to talk about today are really two separate topics. I'm going to first
talk about some patterns that we've seen in immunization rates, and then I'm also going to
talk about some patterns that we've seen in CAHPS evaluations of the healthcare that's
provided. And I'm going to be looking at several vulnerable groups of beneficiaries. So
I'm going to go quickly over this since I think this conference has done a great job talking
about the Medicare CAHPS Survey.

The 2007 survey is administered to Medicare Advantage beneficiaries with or without
prescription drug coverage and fee-for-service beneficiaries, including those who are in
standalone PDPs. We have survey data from more than 100,000 beneficiaries of each
type in 2007. So the first of the two studies that I'm going to talk about briefly today
involves immunization for Hispanic beneficiaries relative to non-Hispanic, white
beneficiaries.

So for the purpose of this analysis, we restricted ourselves to roughly the quarter million
beneficiaries who we had surveyed who were either Hispanic or non-Hispanic whites,
and we have completed surveys both in English and in Spanish. And we also, because
we were looking at immunization focused on beneficiaries 65 and over in this analysis,

and also because the patterns were so different, we excluded from these particular analyses beneficiaries from Puerto Rico. Hispanic ethnicity is itself reported on the survey, and we also inferred language preference from whether they chose to complete the mail or phone survey in English or Spanish. In this first set of analyses we'll be focusing on whether they received pneumonia and influenza immunizations in the year prior to the survey.

All these analyses use survey weights. When we describe the rates of immunization, we're going to look at things in two ways. First of all we're going to look at these without any adjustment for health or other demographic characteristics and we think that's important because these are actually showing you what the actual levels of disparities are. But we also want to adjust for a variety of characteristics: age, gender, whether there was a proxy respondent, health status and so forth, so that we can also understand the extent to which these factors might explain some of the disparities. But we really want to look at this both ways because we think that both tell us something. And we look at this nationally, and also we break this down to look at a little bit of variation across the ten CMS regions.

So I hope this font is big enough to see but if not I'll try to walk you through this. The three rows here represent non-Hispanic, white, English speakers. The second row represents Hispanic beneficiaries who responded in English and the third row represents Hispanic beneficiaries who responded in Spanish, either by telephone or by mail. And the two first bolded columns are simple, unadjusted rates of immunization. And you can see that a reference group of non-Hispanic whites are being immunized at 73 to 75 percent, depending which measure you look at. Those drop noticeably when you look at the Hispanic beneficiaries who responded in English. You get a drop of about eight percentage points for the flu shot. You get a drop of 13 percentage points for pneumonia immunization, and they drop further still another eight points for the flu shot and another 17 points for pneumonia when you look at the presumably less acculturated Hispanic beneficiaries who responded in Spanish. So we feel like there's a real opportunity for improvement with the second and third group in particular.

When we -- now it is the case that a lot of the factors associated with immunization such as education and rurality and so forth do differ across these groups, and so when you adjust for those factors you see smaller differences in the two columns to the right. You see a four-percentage shortfall on the flu shot for Hispanics who responded in English and you see a six-point shortfall still for Hispanic beneficiaries who responded in Spanish. But you still see discrepancies that are probably of a policy relevant magnitude, and you see very large differences persisting with respect to the pneumonia shot. You see a nine percentage point difference even after we've matched on all these characteristics for Hispanics responding in English and you see a 20 percentage point difference, even after we've matched on all these characteristics for Hispanic beneficiaries responding in Spanish.

And one of the things that we saw is that, you know, these are we think fairly dramatic patterns nationally, but there's a fair amount of regional variation, and I'll give you a

couple examples of that. And what we found here is that, and I'll show you a region where the disparities were relatively small and where the disparities were relatively large. When you look at these, what you're going to see is that rates of immunization for our reference group, the non-Hispanic, white responders changed very little from region to region. What made for small discrepancies in some places and big discrepancies in others was variation in the rate of immunization for Hispanic beneficiaries. So in CMS region two, which is predominantly New York and New Jersey, since we excluded Puerto Rico from these analyses, there are no statistically significant differences in the adjusted immunization rates for flu, and there are some differences still between non-Hispanic whites and these two different Hispanic subgroups, but they're much smaller. There are differences of only seven to 11 percentage points. So this is the region that had the smallest shortfall for these two Hispanic subgroups in immunization.

Region Four, which is the Southeast United States, had the largest discrepancies. Here, while again the rates of immunization for non-Hispanic whites for both the flu and pneumonia were typical, you saw very low rates of immunization for these Hispanic subgroups. Even after adjustment the two Hispanic groups were 12 and 22 percent lower on flu immunization and 14 and 27 percent lower on pneumonia immunization and again, even after demographic matching, so we see these really large differences.

So that's sort of one set of findings in immunization, and in an over-ambitious attempt to switch gears and talk about something related but different, I'm now going to describe a second set of analyses. Again, using the same data set that I talked about before, the 2007 Medicare CAHPS data set, but here instead of restricting to older beneficiaries and excluding Puerto Rico, we're using the full data set. Here we're going to be focusing on 12 CAHPS outcomes: five zero to ten ratings, both Part C and Part D, seven composites assessing experiences that are built up from multiple report items and these are Part C and Part D as well. And the way this breaks down is of these 12 measures, eight of them are Part C measures and four of them are Part D measures.

And in a way that was done independently, but I see is remarkably similar in many ways to what was done by our next speaker, we were interested in six potentially vulnerable subgroups: those who are eligible for low income subsidy, those who had less education, which we defined by not having a high school degree, those who were in poor or fair self-rated health, those who were 85 or older when compared to those 65 to 84, female and also African-American versus non-Hispanic whites. And what we did in each of these cases is what you might describe as a difference of differences analysis. In other words, rather than just looking what the differences were for each of these groups in Medicare Advantage versus original fee-for-service Medicare, we looked if whether the relative advantage, whether there was a relative advantage on the basis of these characteristics between the groups. And that's something that we assessed by looking at the inter-action in a linear model between an indicator of being in Medicare Advantage and being a member of the subgroup. And so in some sense we're asking if there are less positive differences for some of these vulnerable beneficiaries than their non-vulnerable or less vulnerable counterparts.

And here's a summary of what we found. First of all when we look at the Part C measures then in general, and I'll provide a little bit of detail on this, but what we found is that non-vulnerable beneficiaries typically did worse in M.A. they did in fee-for-service in terms of their reported measures. So if you are not vulnerable, you were either similar to or had somewhat less positive experience in fee-for-service. And that's something that we've seen before, but with the vulnerable beneficiaries this difference was exacerbated where the vulnerable beneficiaries tended to have a Part C reports that were markedly less positive than those in fee-for-service.

On the other hand, in Part D we saw something that was a little bit different. We saw that the non-vulnerable beneficiaries tended to have Part D experiences that were markedly more positive than those who were in standalone PDPs, whereas the vulnerable beneficiaries had experiences that were on average parallel to or only a little bit better than in a freestanding PDP. So if I can step back and try to reiterate that, because I know this is a lot to take in, there's sort of two things going on here at once. One of them is that in general, the Medicare Advantage plans are doing a little bit better than the standalone PDPs on these Part D measures whereas, as we've seen in the past for the Part C measures, there's a bit of the reverse going on where the original fee-for-service is doing better than the Medicare Advantage on the Part C measures. And then the other thing that's overlaid on top of that is, within each of these groups, being in a vulnerable group makes you a little bit worse off in Medicare Advantage, relative to original fee-for-service. And we looked at that a little bit more specifically here with respect to each of these vulnerable characteristics.

So, you know, as I mentioned on the previous slide, whether you're absolutely higher it varies a bit for measure to measure, and it mainly sort of breaks down along this Part C versus Part D distinction but the relative differences show a very consistent pattern. So there were 33 cases where being a member of a vulnerable subgroup made you relatively worse off in M.A. There was only one case where we saw the reverse. In particular, we saw the strongest patterns for low-income supplement eligible, for fair and poor health. We saw sort of intermediary patterns for female and no high school degree, and we saw some of these patterns but not quite as consistently for beneficiaries who were black and who were over 85.

And so what we've concluded then is, first of all, that among beneficiaries 65 and older there are real gaps in flu and pneumonia immunization for Hispanics, relative to non-Hispanic whites, and this is particularly true for Spanish preferring Hispanic beneficiaries. But we also note that there are significant regional variation in these disparities and at least the narrower gap that's seen in region two in New York and New Jersey suggests that there are, there is potential to reduce and perhaps eliminate some of these disparities in immunization. Secondly, it appears that lower income less healthy female, less educated and black beneficiaries often have relatively less positive experiences with Medicare Advantage than with fee-for-service Medicare, and that for Part D this translates into either sort of no advantage relative to fee for service or small advantages. In the Part C domain it tended to translate into larger disadvantages, relative to fee-for-services.

So we feel like there are opportunities for quality improvement, that there might be opportunities to target Hispanic seniors, especially those who are less acculturated and Spanish preferring for immunization. We also feel that there are opportunities for Medicare Advantage to target QI efforts on some of the more vulnerable subgroups and find ways to assist them, and I believe that our second talk will sort of help sort of more specifically address ways in which that might happen. Thanks very much.

[applause]

Judy Ing:
I'm going to talk today about a new set of preventive care and counseling measures in the Medicare Health Outcomes survey that addressed some very common problems in the older population. For example, urinary incontinence and falls, and I'm going to talk a little bit about the development of the measures first and then also present some results from a study where we examine whether receipt of these preventive services varied across different social demographically vulnerable subgroups as well. And I believe Sonja Bowen [spelled phonetically] already covered the nuts and bolts of the HOS yesterday, and what I want to point out here is HOS really is a first outcomes measure for the Medicare population included in HEDIS, which is more often known for process measures rather than outcomes measures. And for the very first time in 2006 a full set of preventive measures were added to HEDIS that address this whole range of areas of care that are important in the older population.

So I'll first go through the purpose of the study. The measures themselves -- a little bit of background on the development of them, the study population: how we define vulnerability status in this group, and then present the results in the study's main implications.

So the main purpose of our study was really to examine whether we see preventive counseling or care for very prevalent conditions in the older adult, Medicare managed care population varied by their vulnerability status. And these measures were developed by NCQA in association with CMS's geriatric measurement advisory panel. They aim to prevent geriatric syndrome across four important areas of health in the older population: urinary incontinence, falls, osteoporosis and physical activity.

In the case of physical activity, it's really about preventing a multitude of problems that the lack of physical activity can cause. And all the measures were based on national guidelines that recommend certain aspects of preventive counseling care for older adults across these four areas. For physical activity, the measures assess whether a person had a discussion with their doctor about this topic and whether they received advice on their physical activity levels from their doctor.

For urinary incontinence it's also whether a discussion took place with their doctor, and whether a person actually received treatment for it. And likewise, for falls risk management whether a discussion occurred and whether treatment was received. And

finally, for osteoporosis which applied just to women 65 and older, the measure assessed whether a person ever got testing for this, for example, bone density test for osteoporosis. The results are all aggregated to the plan level and plan performance rates are reported publicly to drive quality improvement. I also want to point out here that the HOS is very much a living, breathing survey and measures do cycle in and out. They often reflect developments in public health and medicine, so this new set really speaks to and acknowledges a growing recognition of the importance of prevention in helping this particular population maximize their functioning and their quality of life.

This is just to give you an idea of what the measure actually assesses and asks of survey participants. So here on the column labeled "Eligibility," you have the people who are eligible to be accessed for that measure. In other words, people who the guidelines suggest should have received that particular service and across all four areas what you see really are people that are 65 and above who are recommended for a service and eligible for it, and in a few cases, you also need to have reported a problem in that area.

And in the next two columns labeled "Rate One and Two," what you have here are the actual preventive services that the survey participants were asked about. In the first column it's that whether the person discussed the particular problem or issue with their doctor, and the second column is whether they actually received some form of treatment or management for it. And the exception is the osteoporosis in that last row which only assesses one thing: whether the person got testing for it.

Now for a study sample we limited ourselves to community dwelling elderly, 65 and above, who completed a usable HOS survey in 2006. By usable, we define this as having at least 80 percent of the survey or more completed, and who did not indicate that they wanted to be removed from the list of survey individuals, which left us with over 110,000 people in our study sample. And all the measures asked survey participants about care they received in the 12 months prior to the fielding of the survey in 2006.

I want to talk a little bit about how we constructed this, what we called the vulnerability status variable in our data set. We really based -- you can think of this as sort of a vulnerability profile. We really base this on a concept of vulnerability from the Day Anderson Access to Care Framework. And in research, this framework has been adapted so that the concept of vulnerability is operationalized as a combination of three major risk factors associated with access to care: predisposing factors, which contribute to a person's propensity to use health services. These are usually social/demographic factors such as race, ethnicity, age, and you have enabling factors, which are the means a person has available to use the services: income and education level, for example. And lastly, need factors, which are the key cause of health service use. And there you have such things such as health status and illness.

And we use variables in the HOS that reflected all three of these types of factors and combined them into a single vulnerability status variable. We ended up using and combining race: the predisposing factor, which we dichotomized as non-Hispanic black and white. We also used education level, the enabling level, which we dichotomized as

having never reached college versus having at least some college education and lastly, a person's self-reported health: the need factor, which we dichotomized between good health, excellent, very good, good, self-reported or poor health, which is fair or poor self-reported.

And we really preferred looking at this convergence of factors instead of studying individual factors separately because we thought this better captured reality. After all, a person's not one-day black, the next day poor health and the next day low education. They are all these things at once and we also -- the beauty of the HOS is that it's a large enough data set that you can really break things down to this level.

Now of course, any time you start combining multiple variables into a single profile, you do start getting smaller and smaller cells. You break things down. So we did have to be a little bit careful of that. We had no magic rules about how we did this and went about it, but we were guided by both the conceptual needs and statistical needs of having to have sufficient sub-sample sizes for comparative analysis.

So this is just a visual to give you an idea of what the final vulnerability status measure looked like. There are eight categories in all, and comprising race, education, perceived health with the dichotomized categories within each of those. And at the very top what you'll see is that people who don't have any of the vulnerability traits or self-report good health, having at least some college education and white. And at the very bottom you have what we would call the triple jeopardy individuals. They are black, never reached college and have poor self-reported health. And in between you have those who report at least one or two of these various traits, and to give you an idea of how large some of these subgroups are, at the very top the people of no vulnerability traits, they are the largest group with about 44,500 of them within that subgroup, and the very bottom, the triple jeopardy individuals were the smallest subgroup here with about 550 of them within the group.

And here are our results. The columns you see at the top depict all the various facets of preventive counseling care, discussing physical activity, being advised on it and so forth. And then in that very first row you see the percentages of the overall elderly study population who reported receiving that particular service. And what you see here is really quite a range. For example, while they're almost 70 percent of the women in this population who are eligible, say that they got osteoporosis testing. Right next to that only 23 percent, which is it barely one out of five elderly who should have gotten falls counseling said that they got it.

Now in the remaining rows we show the differences among all the vulnerability groups in the receipt of the preventive counseling and care, and there are a lot of rows here. But in general, what you see in the upper section are those people with high education. Let's see if this works. They're divided between the black and the white, and in the lower row you have low education folks also divided between black and white. And within these subgroups, you have them divided up into people of good and poor health. And wherever you see a plus, that depicts a percentage point difference in receipt of that particular

service that favors the vulnerability status subgroup over the overall group of elderly, and one plus is a pretty modest difference where we saw about three to six percentage points. Two pluses are larger difference of at least six percentage points. And the minus depict any size difference that favored the overall group rather than the vulnerable subgroup.

And as you can see starting with physical activity there, discussion of physical activity, there really is a big difference between the top and bottom sections. So the difference here in the percentage points for this particular aspect of care actually favor those people down here, the lower education group. They are the ones likelier to report discussing physical activity with their doctor than those of higher education. And you see pretty much the same thing if you move over to advising physical activity, and in that group there's some favoring also of those in the black subgroup, compared to their counterparts in that same education group, and some favoring of those in poor health.

For the urinary incontinence measures, the difference is also largely between the top and bottom rows, with the difference again favoring the lower row, which is the low education group. And here there's also some favoring of those who are in poor health and really see a favoring of those who are black, compared to their counterparts in that same education group.

For osteoporosis testing, you have a slightly different story. Here, in this case, the differences really favored the white group who are low education amongst these women. And lastly, for the falls measures, you can see the differences in these two measures really favor the poor versus the good health. So that's a slightly different story from the rest of them.

So our main findings, really to summarize them, the receipt of preventive counseling and care is associated with certain vulnerability traits. For low education we saw that it made a difference in terms of receipt of physical activity, discussion and advising, as well as both urinary incontinence measures and in osteoporosis testing. Poor health really made a difference in terms of whether or not you received physical activity advising as well as urinary incontinence and falls measures, in terms of discussion of treatment. And for race what we saw were that blacks were much more likely to get advice on physical activity and whites were more likely to have an osteoporosis test. I also want to mention here that when we ran regression results looking at receipt of these particular services as a function of their vulnerability status, we got the same things. We saw the same trends confirmed.

So in conclusion, we saw differences in vulnerability status associated with preventive care and the combination of all three vulnerabilities traits were not the worst off. In fact, we saw low education, poor health were generally the best off in terms of receiving preventive services and the convergence of certain vulnerability traits do seem to matter. So there does seem to be some good news in that physicians are targeting counseling to patients perceived to be at higher risk, but there are opportunities for improvement here where there needs to be a focus on making discussion of risks part of the conversation for all patients, not just those perceived at certain risk levels.

[applause]

Sarah Hudson Sholey:
Okay. So what I'd like to do is finish up with a presentation that looks at how health plan performance and quality measures relates to outcomes for their enrollees. And, you know, this is one of the things that Judy mentioned. You know, the value of the health outcome surveys that we actually have outcomes data. And so it provided us a unique opportunity to try to understand what association we might see in changes in health outcomes over time depending on what health plan beneficiaries are enrolled in.

And the reason we want to do this -- we know from studies as we developed the HEDIS measures at NCQA, we're always looking for measures that have good evidence that these outcomes in clinical trials have shown an impact on outcomes, okay? So we're looking for quality measures that will lead to better outcomes. But often those are clinical outcomes and not global health functioning outcomes like the SF 12 or other measures of health status. And so in this study we really wanted to test that question, "Is focusing on health plan quality improvement really going to help us achieve better outcomes, better functioning, among the members?"

There had been one study before this that looked at this relationship, but in a cross-sectional fashion, and you get a lot of problems when you try to look at those data at the same time, outcomes and quality at the same time. So what we were able to do was to think about the longitudinal approach and try to say, "Okay, we have the health plan and we have the quality of that health plan. What's happening to the outcomes of that health plan's members over time?" And our hypothesis was, we were focusing on patients with diabetes. Our hypotheses was that diabetics enrolled in health plans with high performance on the diabetes related HEDIS measures would have better patient reported health outcomes over time, compared to those members who were in lower performing plans.

The data sources are the HOS, which you know all about I'm sure by now, as well as the health care effectiveness data and information that are HEDIS. And we were using data from the HOS because we have this nice longitudinal data. These were HOS people that filled out the HOS in 2001 and then were followed up in 2003, and we matched them to the HEDIS data for their health plan during 2002, which was that intermediate year. That's where we thought we'd find the strongest relationship.

The criteria for participation in the analysis are similar to what Judy presented. It's, you know, a completed survey, community dwelling, and we identified diabetes based on the respondents' self-report of whether a doctor had ever told them that they had diabetes, high blood sugar, or sugar in their urine.

We used the health plan results on the HEDIS measures. And because there are several measures, we decided that for simplicity we would develop two composites: one looking at processes of care and the other looking at intermediate outcomes. So the processes

include A1C testing, LDL screening, eye exams and nephropathy, and what we did is we created an average process score for each health plan and then we did something similar with the outcomes measures, looking at LDL control and A2C control and to create that average we had to invert the A1C because that's the poor control measure back in 2002.

Our dependent variables are the looking at physical and mental functioning, using the PCS, physical component summary and medical component summary of the MOS FS 36. And as you know, this score is based on national norms. It has a mean of 50, standard deviation of ten, and we used a method for looking at longitudinal performance in our outcomes that's been proposed by Paula Deere [spelled phonetically]. This is important because if we just -- because as you know, that if you follow a sample of Medicare recipients over time, some will die over that two-year period. And if we had just focused on the people that had a score at both time periods, then we would have an inflation in the outcome scores at the end. So we had to take into account -- we had to figure out how to take into account the people that died and make sure we included them in the analysis. And we followed -- that's the method that Paula Deere recommends and so that our dependent variable actually represents the change in the probability of being healthy between the baseline and the follow-up period. So it takes into account, you know, are you -- what's the probability that you are going to be at the same or higher level on the HOS, on the functioning measures at the follow-up period?

Now this analysis was actually pretty complicated. It took us -- we spent some time. We had a lot of good input from critical reviewers about how to do this analysis because we're trying to sort out this relationship between quality and outcomes. We at first thought, well, let's look at it at the patient level. And the reason we couldn't do that is something called the simultaneity bias because you don't want -- because actually people that are sicker tend to be more often in to see their doctors, more likely to get the screening, okay? So that kind of severity, the relationship between that severity and patient receipt of high-quality care is a problem, and so that's why we pulled back and did this analysis looking at membership within a high performing health plan.

We also had to take into account the fact that the data, the HOS data -- members are sampled with in health plans and health plans are, you know, have different characteristics and there's this clustering of patients. And so that's why we used a hierarchical modeling design that took into account the health plan differences and the clustered sampling.

So multi-level, multi-variant models -- our unit of analysis is the patient and then you can see the measures that we controlled for in these grids and analyses. Importantly, we did control for the baseline PCS and MCS scores, as well as some measures of diabetes severity and depression because we know that depression -- we've seen in our analysis that depression is related to poor ratings of functioning.

And I have a couple of slides here that I'm going to run through quickly that just give you some information about the data set, the performance rates. These are the health plan performance rates on the HEDIS measures so you can get a sense of where the average

process composite score was, the average outcomes composite. They're around 70 percent. Patients, and this is probably not a surprise to any of you who are familiar with the Medicare population. We see more women, and you can see the African Americans and Hispanics. And some other characteristics on the prevalence of depression, diabetes severity and the mean number of chronic conditions.

So this gives you information on the actual scores on the PCS and the MCS at baseline and follow up, and so our sample of individuals who completed the HOS survey at both time periods. You can see that their physical functioning and their mental functioning decreased somewhat over the two-year period. We also had another 13 percent of the original set of eligible participants who died between baseline and follow up, and so that's why we wanted to make sure that we included them in our analysis.

So here's -- this is the major results side. When we looked at the impact of health plan quality on physical and mental functioning, what we see is a positive relationship and its significant in three of the comparisons. So just in terms of the first row, we see that a ten percentage point increase in health plan's performance on the process composite was associated with an 11 percentage point increase in the probability of improved mental functioning. So that's how we read these results. So basically if your health plan improves, if the health plan's performance was higher by at least ten percentage points compared to others, then the members had an 11 percentage point increase in the probability of having improved mental functioning. And we saw that for intermediate outcomes, so if the health plan had, was ten points higher than other health plans in the intermediate, in their performance on the intermediate outcomes composite, then their members had about a 7 percent increase in the probability of improved physical and mental functioning. So we're seeing a positive relationship based on the performance in the health plans.

And we also wanted to take into account whether this relationship between the health plan' performance and the outcomes of their members, whether that made a difference depending on where you started out, okay? So whether members started out among the healthiest of the members within the health plan, whether they were in the middle range or whether they were in the lowest tier, the lowest third of Medicare beneficiaries in terms of their baseline physical functioning or their baseline mental functioning. And generally what these results show is you see these negative relationships, which are significant in a couple of instances. What this is telling us is that people that are in the highest tier at the baseline benefit the most from the improved quality in their health plan, okay?

Now the analyses that I've shown you are based on looking at diabetes care, and we thought diabetes was really our best example because we have a really nice, robust set of HEDIS measures for diabetes and a large sample of patients that we could follow and really good information. We think that self-reported information on diabetes is very good. We looked at hypertension, ischemic heart disease and depression. With hypertension we found some similar relationships but they weren't significant. We weren't really surprised because it's actually -- our data showed it's really kind of hard to

have an impact on blood pressure over time, and we only had the one measure. Ischemic heart disease again, a very small -- the measures that we have at that time in HEDIS affected a small proportion of the population. And then in depression I think we didn't see a relationship, but partly, we're a little bit nervous about the measures and the sample and how it was defined from HOS, still some suggestion that we might be in the right direction, but clearly calls for more research to try to support our results.

So in summary, what we've demonstrated is that the quality of the health plan has a positive impact on the longitudinal change in their members' health outcomes. So being in a higher performing health plan is better for your functioning and your change in functioning over time. You're more likely to be healthy at a follow up a couple of years later. We saw that there was a little bit different relationship for process and outcomes. We also saw that people that were in the healthiest group of enrollees at baseline tended to have this effect, compared to people that were in the middle or lower tiers, and while we didn't see a consistent impact on outcomes.

Now the limitations of this study are common to studies that are based on the HEDIS and HOS data. There was attrition in plans. Some plans left the Medicare market during this time period. Beneficiaries changed. We focused on those, the plans that were stable, and the members that remained in those plans. We used self-reported information and in some cases we had few quality measures, which we think contributed to the lack of consistency across conditions. But overall we believe that these results really suggest that improving quality of care can improve health functioning. We think this is really exciting work.

It clearly needs to be replicated. We'd love to do this kind of analysis in other populations and with better measures and different conditions with Medicare. But we think it does point to the opportunities to try to encourage and monitor quality improvement at the health plan level and demonstrates the value of monitoring outcomes over time: that this is really useful information. And that we need to be paying attention to how those outcomes change. Thank you. And now we're going to --

[applause]

We're going to -- I think we have about six to ten minutes for discussion, so I wanted to open it up for questions to any of the speakers.

Female Speaker:
Good morning. Actually this question I think is for either Sarah or Judy. I'm wondering in your current or maybe future analysis, you're correlating your findings in these two studies to levels of hospitalization. So in fact, as we help to keep people healthier, does that have a direct impact on our ability to impact or reduce admissions, readmissions?

Sarah Hudson Sholey:
Actually, that's a great question. As you know, you may know that we are just starting to include in the HEDIS data set measures of relative resource use. We have measures of

hospitalization in the HEDIS database, and there maybe some opportunities for us to really try to look at that. That's something we've been interested in trying to think about the relationship between disparities and utilization and cost of care. So we'll certainly take that back as a research opportunity.

Male Speaker:
Hi. I want to address my question to the presentation by Dr. Ing, and you showed that physical activity, black race and low education were counseled more about, they were counseled more about physical activity. What wasn't included in the Anderson model that you included was the environment, and George Kaplan at the Alameda County study showed consistently that if the persons are not living in a conducive neighborhood for physical activity, they aren't going to go out and walk in the evenings because there are no lights. It's not safe. So what can you tell us as health plans to increase the physical component summary scores of the enrollees although they might be living in an unsafe environment that's not conducive to taking walks and so on?

Judy Ing:
That's a very good question. One thing I do want to point out in the HOS is that the final mental and physical health summary scores actually are not scored including these new preventive care measures. The new preventive care measures were only just added very recently. They might be included in those scores one day, but the point you make about the unsafe environment and those kinds of barriers to physical activity, they, separate from the final component summary scores, are -- that's definitely a major problem for those who cannot physically exercise.

I think the point of these measures really were to make sure that the conversation was even taking place, and that physicians and healthcare providers in a plan were aware that it's not just acute care which is so often emphasized in Medicare overall, but that prevention needs to be a part of the dialogue with their patient on an ongoing basis. So yes, it is a big problem, but the measures themselves were sort of put there for a particular purpose. And perhaps hopefully, at some point, they can move that forward to perhaps measuring other aspects that might be included, environment, or bring in data from other external sources that can examine trends related to a person's environment.

Female Speaker:
Good morning. My question is a quick question. You stated that the research or the study was given to community dwelling elderly. I wanted to know did that include community [unintelligible] such as the elderly living in retirement homes?

Judy Ing:
Are you addressing it to my study? And your question was whether community dwelling elderly in the study included those in retirement homes? It does not. The institutionalized definition of the survey's such that it would not include nursing homes, retirement homes, other types of institutions, that's sort.

Female Speaker:

Hi. My question is also for Judy Ing. I was wondering, in your study, based on what Sarah has set about like that there is a potential for people who are sicker just to go to the doctor more often. Excuse me, so they might have more of a likelihood of having an opportunity to get certain types of counseling just because of the number of contacts that they have with the healthcare system. I was wondering if there are any potential confounding factors that weren't captured, you know, or even maybe patients who are more obese might get more counseling for physical activity or, you know, like are there other interactions in the data that could be looked at to, you know, see if the relationship between the two groups changes when you adjust for those things?

Judy Ing:
That's a great question. It kind of goes back to what was the first question that came out, looking at environment. There's so many factors that could have confounded these results that of course are not part of the survey. And you can't get that information from the survey alone. But yes, there's definitely issues having to do with -- it's very possible for example, in a physician-patient encounter, perhaps there are certain and -- something is happening within that encounter when a physician looks at the patient or part of the dialogue that a physician has with a patient who, for instance, might be obese, that could be going on that would lead them to more likely discuss something such as physical activity or some other problems.

That piece of information about exactly what's going on in that encounter is of course, not captured in the HOS. But if it were unavailable or if you could pull it in and somehow link them, it even if not at a patient level, say at a plan level, at aggregate plant level, it's possible that you could look at correlations of some of these external factors. For instance, CAHPS which is talked about what touches on patient experience. You could pull in some of that, also, to see if there might be correlations between satisfaction and other types of encounter information that might be happening to shed light on what's going on when they are in the doctor's office.

Female Speaker:
Hi. I have a quick question on the flu. When you looked at flu and pneumonia did you also do a comparison between the fee-for-service and the Medicare Advantage plans?

Mark Elliott:
We have and there is a very consistent finding that immunization is higher in Medicare Advantage than it is for fee-for-service. It's also the case that immunizations are higher for those who are in poorer health. So and what I described -- we could control for being in Medicare Advantage as a covariant. We're also looking at whether the disparities, with respect to being Hispanic and Spanish-speaking differ by whether you're in Medicare Advantage or not, and I don't remember if there is a difference in that disparity by Medicare Advantage status, but if -- I'd be, I have that information. I'd be happy to follow up with you on that.

Female Speaker:
Okay, just because in general, it would be helpful to have more data that compares the

fee- for-service with Medicare Advantage plans because that's something that we're always asked for internally.

Mark Elliott:
Absolutely, and the work that I'm describing -- it will compare them on those measures, when it's written up for publication.

Female Speaker:
A quick question to Mark also. I'm curious -- the outcome data, the pneumococcal influenza vaccination --where did it come from? Was it part of CAHPS Survey?

Mark Elliott:
Which --

Female Speaker:
The outcome data. Where did it come from? Was it part of the --

Mark Elliott.
Oh, that is from the CAHPS Survey, yes. That's self-reported on the CAHPS Survey.

Female Speaker:
Okay, thank you.

Male Speaker:
Great. Join me again in thanking our panel for their excellent presentation.

[applause]

[end of transcript]