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Session: Events Associated with Changes in Reliance on VHA Among Medicare-Eligible Veterans

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**Liam Rose:**  My name is Liam Rose. I am an Economist at HERC and I’m very excited to be introducing one of, a very, very accomplished researcher in VA who’s also at the University of Washington, Paul Hebert. And today he’s going to be telling us about elderly Veterans, Medicare eligible. So go ahead and take it away, Paul.

**Dr. Paul Hebert:** All right, great. Well thanks, thanks very much, and thanks for joining. I am waiting to, here we go, I’ll need to show my screen. So is that working for everyone?

**Maria:** Yes.

**Dr. Paul Hebert:** I’ll take that as a yes. Okay, great. So today we’re going to be talking about VA, how Veterans are relying on either VA or on Medicare. And I should warn you in advance it’s going to get kind of nerdy. But the topic is really interesting so kind of hang in there. The topic is all about VA competitiveness which is really important to the VA, you know, especially given the CHOICE Act and the MISSION Act. And this all came about because some work that Fen Liu has been doing over time and an idea that Todd Wagner gave to Fen and I several years ago. So as you may know, about half of all Veterans in the VHA, all the Veteran users, are Medicare enrolled. And so those Veterans have a choice of either using their VA providers or using their Medicare providers. So basically the VA is competing with community providers for the care of these dually enrolled Veterans. And Todd Wagner really had a brilliant idea. He basically said, you know for the last 50 years we’ve been running a natural experiment on VA competitiveness. As soon as a person turns 65 they’re able to go out and get care from the community and they’re not unlike people who are approved through the CHOICE or MISSION Acts to get care in the community. So we can learn something about how the VA is doing in the competitive marketplace by just studying how Medicare-eligible Veterans vote with their feet to rely on either the VA or Medicare providers. A really smart idea and I have to really credit Todd for coming up with that.

So I’m going to highlight some prior research on VA reliance and there’s a lot of research on VA reliance and I’m only going to highlight some of the stuff that we are doing here because I’m lazy and I had slides for that stuff. And I don’t mean to disrespect any of the other people who are doing work on VA reliance, it’s really great stuff, but I’m lazy. So VA reliance is usually defined in terms of the VA visits, the visits, outpatient visits that you get at the VA divided by the sum of the VA visits and Medicare visits. And people define visits differently but basically that’s a measure of VA reliance and it goes from 0% reliance to 100% reliance. And the first thing that we’ve noticed is that reliance on the VA is U-shaped. So here is, on the left-hand side of this left graph is Veterans who are reliant on Medicare, which we’ve said that 50% or more of their visits are to Medicare providers. Well as you can see, for those people who have more than 50% of their visits to Medicare, most of them, the average is 85% of those visits are in Medicare and only 15% are in the VA. And conversely, if you’re reliant on Medicare if more than 50% of your visits are in the VA rather, 90% of your visits are in the VA and 11% are in Medicare. So you’re kind of like all into Medicare or almost all into Medicare or almost all into VA and there's not a lot of people who are sort of 50/50. You can see this over on the right-hand side of this panel. This is from a study by Fen Liu in 2001. This is from a panel of patients that she followed over time. And so while this is the proportion of visits over here, this is the proportion of patients over here, and here’s VA reliance on the X-axis and then the proportion on the Y-axis. As you can see, this distribution is U-shaped so, again, there are a lot of people who have, you know, 100% Medicare reliance or 100% VA reliance and not very many people in the middle. And as you can see over time you’re, as you get older, as a Veteran gets older, they tend to use more Medicare and less VA. So as a patient gets older, it uses more Medicare and less VA. So that’s kind of interesting.

So here’s the first poll question. So a bunch of Veterans who turn 65 are going to switch to Medicare. So who is switching to Medicare? So compared to VA users who switch to Medicare providers when they turn 65, do VA users who rely on the VA have greater health risks, less health risks, or about the same health risks compared to Veterans who rely on Medicare?

**Maria:** Okay, the poll question is now open. So we have, let’s see, we have 33% already voted. And we’ll give it a little bit more time. We’re now at 70% and I’m about to close the polls here, okay, at 78% of the vote. And we have 71% has greater health risks, 29% has lesser health risks, and 0% say about the same risk.

**Dr. Paul Hebert:** Interesting. Okay, so interesting that 0% is actually the most interesting. So the answer is a greater health risk. So let me set up this a little bit. On the graph on the right-hand side here are a bunch of risks. So we have social risks up in this quadrant, health risks in this quadrant, and health behaviors in this quadrant. The X-axis is the relative risk and we're going to look at the prevalence of these risks here. So relative risks greater than one favor the VA, meaning that the risk is higher in the VA than in Medicare. And relative risks less than one favor Medicare, meaning that patients who chose to go into Medicare have a greater prevalence of that factor. So as you can see with these social risks, almost all the social risks are higher in the, more prevalent in the, among people who chose the VA than among people who chose Medicare. So here's marriage, so you're more likely to be married if you're in Medicare, more than likely to be separated, widowed, or divorced if you're in VA. Here's education. So more likely to have less than a high school education, less likely to have college. More likely to live alone, to have food availability concerns, or to have no one to take you to the doctor if you live in VA. So a lot of higher prevalence of social risks in these factors. Here are the prevalence’s over here if you’re interested in the absolute numbers. In terms of health risks, you’re more likely to be in excellent health. If you chose Medicare, less likely to be in poor health. Your physical component scores and, yes, I've [unintelligible 8:24] the mental component scores also following the same trends as do, the number of health conditions actually don't differ that much. And then down here are health behaviors. So you're also more likely to have worse health behaviors if you chose the VA rather than Medicare. So here's people smoking every day or some days is more prevalent among people who chose the VA. Alcohol consumption greater than weekly is more prevalent among people who use, chose the VA, as is exercising none of the time. Overall the people who chose the VA have significantly greater risks than the people who chose Medicare.

So here’s the second poll question. How does care change for Veterans who switch from the VA to Medicare? So compared to VA users who switch to Medicare providers when they turn 65, do VA users who relied on the VA have more outpatient procedures, fewer outpatient procedures, or about the same?

**Dr. Paul Hebert:** Hey, Maria?

**Maria:** Have 43% people who have voted. I’ll give it a few more minutes, seconds. And we have 79% of the vote. I’m going to go ahead and close it and share the results. We have 45% more outpatient procedures, 45% say there’s fewer outpatient procedures, and 9% about the same number of outpatient procedures. I’m going to go ahead and hide this.

**Dr. Paul Hebert:** All right. So interesting. So the, you would think, or this could go either way, right? Because you would think that well if the patients or the Veterans who are choosing the VA have greater risks then maybe they’re having more outpatient procedures. On the other hand, Medicare beneficiaries or providers are getting reimbursed on the Fee-for-Service basis, so maybe the system is encouraging more procedure use. So it really could go either way and it seems like the voting suggests that.

But in fact, it only goes one way. We looked at 28 outpatient procedures as defined by these BETOS codes. And for 24 of them Veterans who chose Medicare were more likely to get them than Veterans who chose the VA. So here’s relative risks again down here. So this side favors the VA, meaning that the likelihood of getting one of these procedures is higher among people who chose Medicare and on the left-hand side of this one is, you're more likely to get it if you are VA reliant. And for each, every single one of these all but four, you know, hernia repair was one of the only ones that you were not more likely to get in VA. Interesting. Flu shots, you're more likely to get flu shots if you're reliant on the VA. But otherwise, everything is over on this right-hand side. So a lot more stuff if you chose Medicare. And that stuff tends to often be expensive. So here's electrocardiograms, cardiac stress tests, a lot of testing and monitoring, and here’s MRIs. So a lot of stuff and a lot of expensive stuff if you go into Medicare.

The final poll question is, okay so that’s great, we looked a little at some cross-sectional data on Medicare reliance or VA reliance but what are the trends in the VA reliance? Especially given everything that we’ve heard about the VA over the last several years. Are Veterans increasing their reliance on the VA, decreasing their reliance, or keeping their reliance about the same?

**Maria:** Okay, I just launched the third poll question. And currently we have 52% voted so we’ll just give it a few more seconds before I close the polls. And there’s 80% that have voted and I’m going to go ahead and close this. So we have 52% increased their reliance on the VA, 35% decreased their reliance on the VA, and 13% kept their reliance about the same.

**Dr. Paul Hebert:** Interesting. So I would’ve, I kind of would have thought just given all the publicity at the VA that this, reliance would be going down. In fact it’s just the opposite. Reliance is going up. So most people predicted that correctly. That wasn’t what we were expecting at all. But here is a study that ascended, this is a 5% random samples of Veterans in each year. You had to be on a primary care panel at some point between 2004 and 2014 but you could’ve been on in 2004 and then not in 2014, but not in 2014 because you switched to Medicare. So you didn’t have to be on a panel in every year. You had to have Medicare part A and B and we got rid of all the Medicare Advantage enrollees when they went into Medicare Advantage so this is a big sample of 87, you know, big sample of person-years of observation. And as you can see, for mental health, primary care, specialty and surgical care reliance on the VA is going up every year. And these are pretty big increases. So this is 24% in 2004 up to 35% of visits are to VA.

It’s also going up in each of the specialty care sectors that we looked at; so cardiology, oncology, pulmonology, gastroenterology, ophthalmology, dermatology, and nephrology they're all going up over time. So Veterans are voting with their feet to use more of the VA both for primary care and specialty and subspecialty care.

And the reason for this shouldn’t be too surprising given Fen’s earlier work that said that VA reliance is U-shaped. The reason that the reliance is going up is that increasingly VA users are becoming VA-only users. So here she broke up the sample into Medicare only, VA only, and dual users. As you can see over time the proportion of Veterans who are Medicare only decreases and the proportion that are VA only expands. So Veterans are sticking with the VA over time. So really interesting comment on the overall VA competitiveness.

So interesting stuff, but we still don’t know that much about why people are changing their use of, their reliance on the VA. As we said earlier, we know that as a Veteran ages, he or she uses more Medicare and less VA outpatient care. We also know from a couple of really cool studies by Edwin Wong and Todd Wagner, that Veterans respond to poor patient experiences at the VA by voting with their feet to use less VA and more Medicare. So Edwin showed that when patients reported delays in care that the next year they decreased their use of the VA and increased their use, they decreased their use of the VA by about 1.6 percentage points. So this is data from the [unintelligible 16:35]. And then Todd had this really great study where he looked at a large-scale adverse event. So letters were sent out to Veterans that said you might have been exposed to an infectious agent because people were not cleaning equipment at a particular VA well enough. And in response to that, Veterans voted with their feet to stop using ambulatory care surgery. So adjusted odds ratio of .075 for use of VA and adjusted odds ratio of 2.1 of using the Medicare for that same procedure. So basically this measure of voting with your feet is sensitive to poor experiences at the VA.

But we don’t know about other things that, we still have pretty big gaps in our knowledge about why somebody decides to switch from the VA to Medicare. So that led to the following research questions. So the first one is, how soon after becoming Medicare eligible does a Veteran decided to become predominantly Medicare or VA reliant? That’s research question one. And then research question two has a couple of parts. Are there events that influence whether a Veteran chooses the VA or Medicare for his subsequent care? So we have three different types of events. One was receiving an incident life-threatening diagnoses, one was experiencing Medicare provided hospital care, and the other is moving further from a VA Medical Center. So we’ll address each of those research questions next.

The data from, for this presentation comes from the 1999 Large Health Survey of Enrolled Vets. This is a very large health survey. It’s the survey that came up with those risk factors that we shared in one of those earlier slides. We identified Veterans who became age-eligible for Medicare sometime between 1999 and 2001. We took all the Medicare and VA administrative data from 2000-2016 and we stopped following Veterans when they joined a Medicare Advantage Plan because we don't see their claims anymore. The outcome is the reliance on the VA from 2000 to 2016 so we had followed these Veterans for a long period of time. And we decided to measure reliance by Evaluation and Management CPT codes on Medicare claims. And we only chose Evaluation and Management codes that could have been billed in Medicare so that we didn't overcount the reliance on the VA for care that was provided by somebody that couldn't bill in Medicare and so it wouldn't show up in the Medicare claim. And then we didn't include visits in the hospital setting because we figured some of those were emergent and we really wanted a measure that reflected who was orchestrating a patient's care, whether it was a Medicare provider or a VA provider. And although we, so we used Evaluation and Management codes, you know they’re the most prevalent codes, but the truth is that we could have also just used total visits. So the results aren’t sensitive to using E&M codes but that’s the way we wrote up the message and so that’s what we’re sticking with. Statistical methods are going to get kind of complicated so I’ll just handle them when we get to those sections.

So here’s the study characteristics. So the first thing that you notice is that there were about 5,800 Veterans in this survey, in this study. And most of them over there, in the entire follow-up period of 16 or more years decided to rely on the VA over that time period meaning that there were more E&M visits in the VA than Medicare over the entire follow-up period. So that’s pretty good news for the VA. Here’s some of the social risk factors being higher among people who chose seeing VA were more likely to be African American or unmarried.

So here’s the results for research question one. How soon after becoming Medicare eligible does a Veteran decide to become predominantly Medicare of VA reliant? So in this graph on the X-axis is the year since becoming Medicare eligible from 1 to 15 and here is the portion of patients who are concordant. So this is a little bit weird and we really had a hard, we really struggled at how to communicate this. But basically what we did is we took the sample and we split it up into Veterans who would go on to be VA reliant over their entire follow-up period and those who would be, go on to be Medicare reliant over their total follow-up period and then look in every year to see if they were reliant in that year. But we wanted to look at the cumulative reliance. So let’s just take this point right here. This line is for Veterans who would go on to be Medicare reliant over their entire follow-up period. And in year one it turns out that about 50% of Veterans who would go on to be Medicare reliant were, had more E&M visits in Medicare than the VA in their first year of eligibility. And about 60% had more Medicare than VA visits cumulatively over the first three years. So basically about half the sample who are going to leave the VA do so right away in the first year and by year three, 60% do. And in contrast, about 90% or 95% of the Veterans who would go on to be Medicare reliant were Medicare reliant over the first three years. And then, of course, everyone is concordant at the end because concordance is defined as the, you know, cumulative E&M visits over the entire time period. So the entire time period these two numbers are the same. But interesting, about half of people who are going to leave, leave right away.

This is another way to look at these data. So in this case we divided the sample up into this panel right here, which is folks who are consistently reliant on the VA or Medicare. And this panel over here is for Veterans who switch their reliance either from VA to Medicare or from Medicare to VA. And then the axes down here are the average number of visits per person-year to Medicare CMS or to VA. And this diagonal line separates, means that if you're below this diagonal line you have more VA visits, if you're above it you have more CMS visits or Medicare visits which means you're Medicare reliant up here and VA reliant down here. And then these dots down here, these little arrows, show as time goes on how your use of VA and Medicare E&M visits changes. So just starting with Veterans who started out being reliant on Medicare, here's 2001 and basically you don't really increase your VA visits at all. You basically only increase your Medicare visits. So if you started out in the first year you were Medicare reliant you just stayed Medicare reliant the entire time and just kept on using more and more Medicare visits and didn't change your VA visits at all. In contrast, if you started out being reliant on Medicare gradually you decreased your use of the VA and increased your use of Medicare but you never cross this line. Otherwise you would be in this panel over here. And similarly if you started out being reliant on the VA and switched to Medicare you're this green group. You made that choice pretty quickly. So here’s 2001, here’s 2002, so already in 2002 there were more Medicare visits than VA visits. So these are average visits not the number of people so it could be skewed by one person having a billion visits in Medicare. But still it tells pretty much the same story. That within one year if you’re going to switch, you switch. And same going this way. Within one year if you’re going to switch, you switch. So kind of interesting trends.

So now here comes the really dense stuff. So this research question number two. Are there events that influence whether a Veteran chooses the VA or Medicare for his or her subsequent care? So this was kind of difficult, difficult for me anyways. This is really complex. So the first thing that we had to deal with was whether the unit of analysis, it became pretty clear that we couldn’t do any sort of aggregation. If we tried to aggregate over time by, you know, collapsing the data by year or by quarter or something like that, you would risk making a causal ordering error, right? Because if you collapsed all the events and visits in a year, how would you know that the event preceded the visit or not? So it became pretty clear that the unit analysis was going to have to be the day on which a Veteran had a visit. And so, what we did was we said the unit analysis was the day that a visit, the Veteran had an E&M visit in either VA or Medicare, and then the primary outcome we coded as one if that visit was in VA and zero if it was in Medicare. So there's now two variables that said I had a VA visit on this day, yes or no, and another variable that says I had a Medicare visit on this day, yes or no. It's only one variable that says an E&M visit was on this day and it was either a one if it’s in VA or a zero if it’s in Medicare. And then we have the explanatory, the just, the explanatory variable of interest leads to the events. And so the events are you either got hospitalized on a particular day in VA or Medicare and then we had some incident life-threatening diagnoses so usually a diagnosis of cancer, heart failure, dementia, and kidney failure. We got these diagnoses from the Gagne Comorbidity Score, so Gagne is basically a combination of an Elixhauser and Charlson and you have weights on all of the indicators for diseases in those two comorbidity measures. And these are the diagnoses that have weights greater than one, so cancer, heart failure, dementia, and kidney failure. Their weights are reflective of a one-year mortality. So that’s the second set of events. And then the third set of events is whether you move further or closer to the VA. So you know, you moved your residence further or closer to the VA. Our goal here is to estimate adjusted reliance one year prior to and three years following an event for Veterans who are VA reliant or Medicare reliant at year three. And we’re a do this, and in, the adjustment is going to take into account demographics and health risks at baseline, comorbidity in the year prior to the event, and time.

Okay so like I said this is, this is kind of complicated so bear with me. But here’s a graph and here’s time on the, time and days on the X-axis and here’s VA reliance on the Y-axis. Then here’s a bunch of visits. So a V is a visit, an E&M visit to the VA. An M is an E&M visit to Medicare. So over the first year of the, first year of eligibility let’s say, you had four VA visits and one Medicare visit which means over that period of time your VA reliance was 80%. And now let’s say you got hospitalized, so here’s an event. You got hospitalized in Medicare right there. And then you had a bunch of E&M visits subsequent to that hospitalization and since you got hospitalized in Medicare, maybe the Medicare providers were orchestrating your care for a while. And you were really sick so you probably got a lot of care and these are all outpatient visits, so it doesn’t count the time that you’re in the hospital. And then gradually you started using a little bit more VA care as you get further away from the hospitalization and so your VA reliance dropped to like, let’s say 40% over in this time period. And then gradually as you got further away from your event you had fewer visits, fewer E&M visits overall, and more going back to the VA and so you get this sort of pattern in VA reliance. So we can estimate the association due to this event, the hospitalization in Medicare and subsequent reliance by calling this period, put one year post-event period. This period would be the one, your pre-event period, and here’s two years post and three years post. So these would just be dummy variables, so they’re set to one if this visit happened in the one-year post and zero otherwise and same with post two and post three. And then the equation that we would estimate would look like this. So it’s a logit of the probability of an event, an E&M happening in the VA as a function of the three dummy variables post one, post two, and post three. And then the coefficient on post one would reflect the drop in the probability from the pre-period to the post period. So that’s pretty straightforward or a nice way to analyze the data without having to aggregate it, so that, you know, we would know for certain that this visit came after you were hospitalized and not before. But it’s of course a lot more complicated than that because we want to make all of our estimate’s conditional on all of the events. So let’s say that you had a cancer diagnosis right here. And of course I drew this cancer diagnosis so that it happened exactly a year after the hospital event, but it doesn’t have to happen that way, it could happen at any time obviously. But now this, what we called the post one period is actually the pre-period for the cancer diagnosis and this post, what was the post two period is now the post one period for cancer. So these visits down here are sort of playing double duty. There, you know, there being used to estimate the post-period for hospitalizations and the pre-period for cancer, so it gets kind of complicated. So we can write it like this where, you know, same outcome over here. And we changed this post one, post two, and post three into these vectors. And so you have two sets of vectors, one for hospitalization in Medicare, one for hospitalization in the VA. And then four sets of the same vectors here for diagnoses for cancer, heart failure, dementia, and kidney failure. And then a set for whether you moved or not. And why not just, let’s make it even more complicated than this because you’re probably going to have a different experience depending on whether you were Medicare reliant or VA reliant at baseline. So if you started out reliant on Medicare, you know you’re not going to start out here at this 80% like before. You’re probably going to start out here to the 20% or 10%. And then when you’re hospitalized in Medicare you probably use more Medicare and less VA but, you know, not like before. It’s not going to be the same level of drop. That drop right there is going to be a lot different if you were reliant on Medicare to start with. So we’re going to have to do something even more complicated and that is introduce this dummy variable which says that you were reliant on Medicare at baseline. Here are the same vectors as before. And then we’ll have to interact this reliance dummy variable with these vectors to say that this difference is probably going to be different depending on whether you were reliant on VA at baseline or reliant on Medicare at baseline.

And so the full model actually is a real hot mess. But it looks like this. So let me just walk you through it. Here’s the probability that an event happened, an E&M visit happened in Medicare. It’s a function of these baseline survey variables that we saw before. Reliance at year three, which was from that graph that we saw, so this is the reliance three years into your Medicare eligibility. Here’s the Gagne comorbidity measure, measured in the twelve months prior to time T, so this is a rolling comorbidity score. And these are only the elements of the Gagne Comorbidity score that are not an event. Here is the distance moved from the nearest VA since last year. These are indicators for whether the time period falls one year prior to or one to three years following a Medicare or a VA hospitalization or an incident diagnosis of heart failure and cancer. These are incident diagnoses so you can only have one first diagnosis but you could have multiple hospitalizations. So if you were hospitalized twice you would show up two times in this database. And then here is the interaction between baseline reliance and all of these other variables. We also threw in the distance to the nearest VAMC because that probably affects whether, you know, moving a particular distance means a lot to you or little to you. If you’re 1,000 miles from anything it probably doesn’t make any difference if you move 10 miles closer. And then here’s time to just pick up the trend. And of course, these are all going to be clustered. So we’ll just throw this into a big, we’ll just cluster all the standard errors and treat them as independent, between Veterans but not within Veterans.

And here are the results. So each of these panels are for each of the events, or six of the events anyways. Here’s Medicare hospital stays, VA hospital stays, and then here is the incident diagnoses. On the X-axis is the indicator for one year prior to the event and then a one-year post, two years post, three years post. Down the Y-axis is VA reliance. So if you just look at the Medicare hospital stays, he black lines are for Veterans who were reliant on the VA in the first three years of Medicare eligibility. And what this shows is that when you’re hospitalized in Medicare you’re reliance on the VA drops by about eight percentage points from the pre-period. So you start seeing more Medicare providers and fewer VA providers in the year following that Medicare hospitalization. And that’s specifically significant. These asterisks are T-values. But gradually as you go onto two and three years after hospitalization you start going back to the VA. So that by the time you get to three years after this is actually not statistically significantly different from baseline. So that was kind of interesting. You experience care in Medicare and you drop your VA reliance for a short period of time but then gradually it comes back. So here is, I should say before I go into that one, if you look at what happens to Medicare hospital stays for people who were reliant on Medicare at baseline, it pretty much stays flat or goes up a little bit but nothing is statistically significant. Here is some, the results for VA hospitalization. So this is also interesting. So if you get hospitalized in the VA you tend to decrease your use of the VA over time. Not by a lot and you’re still really reliant on the VA it’s, you know, 80%. But it is interesting that it drops over time and it’s statistically significant. And if you were Medicare reliant at baseline, you also drop your VA reliance. So there might be something about VA hospitalizations that are unpleasant and make people want to vote with their feet to start using a little bit more Medicare. It’s interesting that these people who are hospitalized in a VA already had a lot of VA care, so they weren’t especially reliant on Medicare at baseline. Here’s what happens with diagnoses of cancer, nothing. You get a diagnosis of cancer and you don’t increase or decrease your use of the VA. You don’t increase or decrease if you’re VA reliant or if you’re Medicare reliant. You don’t run away from the VA when you get a life-threatening diagnosis of cancer. The same is pretty much true of heart failure, although this is significant in the first year of heart failure it comes right back a few years later. And it’s true of renal failure, again, you don’t run away from the VA when you get a diagnosis of renal failure. Dementia is different. Dementia when you get a diagnosis of dementia you reduce your VA visits in the first year and it just keeps on going down. So this is something to pay attention to. It’s not clear why that is and maybe we might be able to do some post doc theorizing but it’s interesting that that, that goes down pretty suddenly.

So here’s the other event, the third event. What happens when somebody moves? So we know that Veterans who live closer and living closer to the VA is associated with using more VA care but we, no one’s ever looked at moving to my knowledge. So what happens when you move? So it’s interesting when you, about 5% of the Veterans experienced a move. And half moved further from the VA and half moved closer to the VA which you would kind of expect. And the distribution was really normally distributed so it, if you moved, moving closer or moving further was about the same. If you were reliant on Medicare, on the VA at baseline, basically moving had no effect on your reliance. So here is a, you didn't move at all, you moved zero miles, here is you moved eight miles further, eight to 30 miles further, 30 plus miles further, and none of that affected your VA reliance. At least not statistically significantly. If you were reliant on Medicare at baseline though moving away from the VA did reduce your reliance and that's seven percentage points so that's a pretty big reliance. So if you already were not too keen about using the VA moving away from the VA reduced your reliance on the VA even further.

Okay. So in summary, most Veterans in this study voted with their feet in favor of preserving the VA as a source of comprehensive healthcare. So over the 16 years, from 2001 to 2016, more Veterans decided to rely on the VA than to Medicare even though they had a choice of going either direction. The Veterans who chose the VA over their first three years of Medicare eligibility did not significantly modify this decision after having experience of community care, the threat of a new diagnosis, or the inconvenience of moving away from the nearest VA. Nevertheless about half of the Veterans who would become Medicare reliant did so as soon as they became Medicare eligible.

So the implications. Our findings are consistent with a model of VA healthcare in which the VA has a core customer base that is satisfied with their experience at the VA. And I think a lot of people who have found this. There are some people that just really like the VA. And for most of these Veterans, the VA can offer community care to alleviate the bottlenecks without fear that having experienced community care the Veterans will not want to return. So even Veterans who are hospitalized in Medicare most of them turn around and come back. And although VA reliant Veterans gradually reduce their reliance on the VA over time, it appears this is largely due to transient effects of hospitalizations in Medicare. So after controlling for all of those events, the coefficient on time in that model became very small, although still statistically significant because there is, you know, 250,000 observations in that regression, but it became very small. And the biggest affects were from Medicare hospitalization so interesting finding. But still we do need to do some more research because some Veterans vote with their feet to become Medicare reliant immediately after becoming Medicare eligible. So why is it that some Veterans are really chomping at the bit to leave the VA as soon as possible? And does that vary by medical center? So some places, for some medical centers, are Medicare providers just more popular or desirable than VA providers. So I think that’s my last slide.

So thanks, and I want to especially acknowledge co-authors so Fen Liu, Eric Gunnink, Edwin Wong, Adam Batten, and Ashok Reddy who deserve a lot of the criticism for anything that you don’t like about this presentation.

**Liam Rose:** Okay. Great. Thank you so much, Paul, and we have a couple of questions and we have some time for those. So I’ll order them roughly in what I think is the easiest to answer to the hardest to answer. The first is about excluding Medicare Advantage enrollees. And I think that was about data availability and I was just hoping that you might be able to confirm that?

**Dr. Paul Hebert:** Yeah. This is such a pain in the butt, honestly. Because what happens is when a Veteran goes into a Medicare Advantage Plan, up until very recently the Medicare Advantage Plan didn’t have to submit in contra level claims. So they just go dark on us up until very recently. And previous research has shown that Veterans go into Medicare Advantage Plans but that doesn’t mean they leave the VA. You know you can go into a Medicare Advantage Plan and some of these Advantage Plans have like, you know, free eye care or, you know, some other enticement to get you to join. And you can join for free if, under certain circumstances if you’re a Veteran. So you know, a lot of Veterans do that. A lot of Veterans do that. And we no longer can see their Medicare claims but we still see their VA claims. So it’s frustrating to have to make a decision, what do we do with those VA claims? Do we continue to analyze them, or do we throw them out? And in this study, we decided to throw them out. So if somebody was in this study for five years and they were using both Medicare fee-for-service and VA and then the next year he joins a Medicare Advantage Plan we just stopped following him at that point because his Medicare claims went dark on us. But fortunately now I am told that we have Medicare Advantage Plans claims so maybe we won’t have to do that in the future. But it was, unfortunately we had to do it this time.

**Liam Rose:** Yeah. I got it, it makes sense. So there’s another question. This is more about like the prior literature rather than the specific study, but is there any data on pain management? Talking about reliance thoughts for Medicare versus VA and thinking about pain management.

**Dr. Paul Hebert:** Boy, I’ll bet you there is, but I don’t, I don’t know of one off the top of my head. I can’t do that. Pain is not my thing.

**Liam Rose:** Got it. Okay. So another question is about renal failure. So the idea here is that, the question is, since Medicare pays for dialysis wouldn’t you see a big drop in VA reliance once a Veteran is on dialysis? And the asker is saying that they see this happen clinically it allows them to get their dialysis in the community.

**Dr. Paul Hebert:** Uh, yes. So there’s two things going on here. So Virginia Wang has done some really great work on this and it very much parallels our results. When somebody goes on dialysis, if she’s interested it’s specifically in dialysis. When somebody goes on dialysis there’s a few quarters where they’re trying to figure out sort of where they’re going to get their dialysis. I mean you can get dialysis in a VA facility, you can get dialysis at a community facility through the Fee Basis program and we do a lot of that. A ton of that! And then you can get dialysis through your Medicare benefits. And it sort of works out the, it sort of works out the way that it worked out here. You fool, you know some people fool around for a couple of months but then you settle down into being either a Medicare person, a Fee person, or a VA person. There were fewest of VA persons/people just because there aren’t that many dialysis beds in the VA. Most of it we Fee out. But then you become that person and you just stay there. So yeah you might think that it, a lot would go to Medicare, but it seems like other issues about, you know, convenience or just you know liking to stay within the VA take precedence over that.

**Liam Rose:** Got it. Okay. The questions are piling up a bit here so let’s try and get as many as we can in. We have a question from the inspiration from this study, from Todd Wagner who’s asking if you have thought about the endogeneity of the reliance for, on VA? And if you’ve thought about testing [unintelligible 50:08] some shocks that might be a little bit more exogenous to the patient?

**Dr. Paul Hebert:** You mean like having a letter come in the mail that says that you might have been exposed to a?

**Liam Rose:** Yeah. His other example is looking at places where the VA has built facilities such as, recently anyway, such as El Paso or Las Vegas.

**Dr. Paul Hebert:** Uh that’s a great, as usual, that’s a great idea, Todd. We did look at an instrument of variable analysis of, in some of our prior work on VA reliance and used the distance, actually this was a relative distance from the nearest Medicare hospital to the nearest VA hospital as an instrument. And found that our parameter estimates were much more unstable or uncertain. But all of the estimates were in the same direction as the ones that we showed. So we couldn’t disconfirm the results that we showed. But you know, Todd, as always, if you’ve got another brilliant idea that you want to hand over to me and Fen we are happy to take it from you!

**Liam Rose:** Okay. Great, thanks. So this is more about your specific study. Were the diagnosis states you used the first time a Veteran was diagnosed with this specific condition in outpatient or inpatient setting? Or the first time a Veteran was hospitalized with that specific condition?

**Dr. Paul Hebert:** Yeah. That’s a great question. So we used the first diagnosis in any setting and we also tried the second diagnosis in any setting. And the results weren’t significantly different, so we just went with the first in any setting.

**Liam Rose:** Okay, great. And then this is digging a little bit at a slide that went, maybe it got a little in the weeds, but any sense of how much of a difference distance made, distance from the VA made for opting out of VA care?

**Dr. Paul Hebert:** Yeah, um I do actually. Boy I wish I would, if I were better with computers, I could pull up that slide. Yeah, you know, it wasn’t, it wasn’t that much. You know, so we use that as the instrumental variable and the instrumental variable had an [Unintelligible 52:39] of, you know, 100 and something so it was, you know, large enough for an instrument. But just in terms of the percentage, the percentage decrease per mile that you moved from the VA, it wasn’t that high. And in fact, at extreme distances it actually reversed a little bit. So when you got really far away, you started using more VA. I don’t know why that is, but as result of that, we had to drop Alaska from the analysis because it just, you know, [Unintelligible 53:13] every one of the assumptions of the instrument. So I was actually surprised at how insensitive distance was to reliance on the VA.

**Liam Rose:** A Todd with a follow-up, maybe you can comment on this, how do you think that error relates to the increased use of Telehealth?

**Dr. Paul Hebert:** Oh, great question. We got rid of Telehealth, Todd, because up until very recently Medicare can’t, couldn’t bill for Telehealth so we didn’t want to include that in our comparison. But Telehealth is shooting up now at the VA and at least some, there’s some claims for Telehealth coming in so we can probably look at that. That’s a really great idea.

**Liam Rose:** Great. And so I think you mentioned this very briefly, but have you examined any of this at the facility level in the sense that are some VA Medical Centers better at keeping their Veterans per se, after they enroll in Medicare?

**Dr. Paul Hebert:** Uh, not yet but we’re submitting an IAR to look at that. What we did look at it is trends in VA reliance by a VA Medical Center and, interestingly, every single VA Medical Center has increased their, seen an increase in VA reliance. There is not a single medical center where that has gone down. And then even at the FTA6A level at the, you know, site level, the data become pretty noisy. But it was even difficult to find, you know, large CBOCs where VA reliance has been going down. So it was across all categories of care, all VAMCs, and, you know, all but a handful of CBOCs which, you know, almost certainly was just statistical noise.

**Liam Rose:** Got it. Great. So this question is about the definition of VA reliance and the question is, since you would have categorized Choice care as VA care i.e., non-Medicare, did you consider a Choice reliant verse non-Choice reliant analysis of your VA relying group with a similar analysis as the VA verse Medicare reliance?

**Dr. Paul Hebert:** Yeah. Another great question. Edwin Wong is actually doing that analysis through his workgroup at PCAT. So doing exactly what the questionnaire suggests, a really good idea. But we haven’t got any data yet to report back, but yeah. We will in the future.

**Liam Rose:** And then, so one more follow-up on the distance idea. Do you think or do you have any thoughts on if the travel pay for Veterans are having an important role in that distance factor?

**Dr. Paul Hebert:** Oh yeah, great idea. I don’t. I’m sorry, I don’t. A really great idea but I don’t have anything to add to it.

**Liam Rose:** Okay. Great. It was a lot of questions. Thank you for getting through all of those and thank you for being a presenter at our HERC Cyberseminar.

**Dr. Paul Hebert:** Thanks. This was a lot of fun.

[ END OF AUDIO ]