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Session: Is Medical Foster Care a cost-effective substitute for Nursing Home Care?

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Moderator: And thanks everyone for joining today’s HERC seminar exploring whether medical foster care is a cost effective substitute for nursing home care. We’re very excited to have today’s presenters Dr. Cari Levy and Dr. Roee Gutman presenting on this topic. Dr. Levy is a geriatrician, a palliative medicine specialist, and a health services researcher in Colorado focusing on research designed to improve the care for older, seriously ill adults and their caregivers. And Dr. Gutman is an assistant professor of biostatistics at Brown with research interests in data analysis, missing data, matching file linkage, causal inference, and bio informatics. His work in causal inference seeks to obtain valid comparisons for non-randomized intervention. So, without further delay I’m going to turn it over to Drs. Levy and Gutman to talk about their work.

Dr. Cari Levy: Thank you. Can you hear me okay? This is Cari Levy.

Moderator: Yep.

Dr. Cari Levy: Okay, great. Thanks. So, I wanted to go head and get started. This is a program, if you’re not familiar with it, the Medical Foster Home Program. And we were asked a number of years ago to look at this program, a number of aspects of it including safety, and who the program was serving and really was it substituting for nursing home care in the VA. And if you’re not familiar with it, we’ll describe some aspects of the program. But, essentially, it’s an adult foster care program. And specifically today we’re going to focus on the cost comparison that was a part of this study. So as far as the overview is concerned I want to first just present, really the point of all of this which has to do with a number of converging public health challenges that I know you’re all aware of, but I think it’s helpful to set the background before we launch into why this program is particularly useful. And then I’ll talk about the actual program so that you get a sense of what this entails and how it’s put together within the VA system and then it’s relevance outside of the VA in Medicare. And then finally we’ll turn to safety and cost-effectiveness.

So, first of all let me just go ahead and speak to the converging public health challenges. So for those of you who enjoy demography here are the live births by year and this graph starts in 1909 and you see the births per calendar year on the left and then over the course of basically 100 years. And you see the baby boom generation and there where the population increases quite a lot. And I know we all hear about the baby boom generation and this is just a visual representation of that large increase in the population and then what’s important also to look at visually here is the fall in births per calendar year for Generation X. and so you can instantly recognize that we have a problem here because we have lots of folks now who are aging and fewer folks behind them to provide care. And then we’ll go into the third part of this that makes this equation rather vexing in a moment.

But this is really the crux of the issue that we’re dealing with. And then here’s the biggest, the other big part of this which is that, of course, health care expenses are becoming unsustainable. So this is looking at the composition of Medicare payments and we see that the big red section there is hospital care. And hospital care as a component of all these health care expenses is actually becoming less as we spend more on other things. And what are we spending more on? Physicians are actually pretty similar across all of these years. So for the last few, since 1966 our share, the physicians share of expenditures really hasn’t changed that much. As I mentioned [inaudible 04:14-04:18] and so what’s consuming more of our expenses our Medicare spending are prescription drugs, you see that’s gone up quite a lot in the last decade or so and then we’ve got care like nursing home and home health that’s starting to creep into the equation and of course is why we’re talking about some of the programs like Medical Foster Homes which we are addressing today.

So, I eluded to this just a moment ago the Medical Foster Home really relies on caregivers and caregivers in a home. And why is this? Well, it’s partly because we have fewer family caregivers. So we know that those over 65 will double. So from 40 to 81 million between 2010 and 2040 and those who are available are fewer in number. And not only are they fewer in number because of that Generation X phenomenon that I just showed you visually but they’re also working full time. So they’re not available to care for their loved ones at home. And so this program, the Medical Foster Home Program relies on non-family caregivers to provide that care.

 As far as the change in the US population, you just saw some of that but a different representation here. You have the change in population represented with the US total on the bottom in green and then in blue you have those over 65 and you can see the percent change per year between 2000 and 2030 and then you see the escalation for US population over 85.

And then really importantly for the VA is this which is Veterans over 85. And the rapid increase we’re seeing in Veterans over 85. And as one of our directors pointed out a number of years ago, the VA is really the canary in the coal mine. We have to figure this out in the VA because the US population is going to be experiencing what we’re experiencing now just behind us. So if we can provide some solutions that will certainly be relevant to the rest of the US just behind us.

So this is really what we’re talking about. Converging or perhaps colliding public health challenges. We all know the rising health care cost is unsustainable. The Veteran population in particular is challenging our ability to care for aging adults and then we have an escalating prevalence of chronic, disabling disease. This relatively decrease in family care givers, more who are in need of nursing home level of care and then many of our Veterans don’t wish to move into a nursing home, so how do we handle that?

We’ve got a number of options. We can reduce or restrict services, and ration who gets care. That’s a tough challenge but it’s one of our options. We can share costs and we can shift costs. We can reduce costs of services and basically lower salaries or we can try to meet care in more efficient lower cost ways. And of course that’s what many of us try to work on in our projects, and avoid unnecessary costs. How would we do that? Well, we could prevent avoidable hospital days, delay or avoid nursing home long stays, which of course become very expensive and then minimize costly duplication of services and errors. And that’s where this program comes into play.

Here’s a Veteran who’s living in his Medical Foster Home. And I show this picture to sort of set the stage which is that the Medical Foster Home Program is a home program so you’re at home and you’re doing home-like things like sitting with a dog, and sitting next to a grill, and listening to some music on a boom box and there had been a child in this photo previously wearing their happy, I think that’s a happy birthday hat there, or some sort of a celebratory hat there, and some crayons and various things being played with. So many of these homes have children in them and this is basically just a home like any other home and the individual who lives there has decided to take a Veteran or up to three Veterans into that home. Or three individuals that they’re caring for in that home and is providing care and that’s kind of the basics. But I’ll go into a little more detail of what these homes provide.

So the idea behind this program was that it would be an alternative to nursing home care in a personal home. So it’s for Veterans who are unable to live independently they must meet the nursing home level of care need but they prefer care in a family setting and they lack a strong family care giver. This merges adult foster home care with VA home-based primary care and I’ll talk a little bit more about what that includes in just a moment. The individual takes the dependent Veteran into their home, provides daily supervision and personal assistance and they do that 24 hours a day, seven days a week. Of course they can have help but the obligation is to make sure that the individual is cared for 24/7.

So what is different about the VA Medical Foster Home from things like assisted living is that all these Veterans must meet nursing home level of care. They’re all very medically complex. They’re all enrolled in VA home care, and it’s not just home care it’s home-based primary care which is an interdisciplinary team of individuals in the home generally three or more times a month. So it’s pretty intensive home care. And it’s in the Medical Foster Home caregiver’s home, a private home in the community. And there can be no more than three residents receiving care. So for those of you familiar with the program in Oregon for example they have a very well established adult foster care system but you can have more than three individuals in the home and there tends to be a lower level of care need in some of those homes. And so it’s different from the traditional program and certainly different from assisted living in that regard.

As far as safety and oversight and payment are concerned, the VA Medical Foster Home coordinator serves in a very important role in terms of providing oversight. They appear at least once a month unannounced, and the idea there is that you can understand more about what’s happening in the home if you appear unannounced. And they also conduct fire and safety inspections within the home. They have to observe fire drills that occur and the caregiver has to evacuate individuals from the home and the coordinator makes certain they can do that safely. And then VA HBPC provides caregiver education that’s tailored to that particular Veteran and they ensure that comprehensive medical care is provided in the home. They, as I mentioned before, are usually in the home at least three times a month and that’s perhaps a visit from the nurse practitioner and the occupational therapist and a nurse or some combination thereof. And then the Veteran, this is a unique aspect of the program, pays the caregiver out of pocket $2500 per month.

So what is Home Based Primary Care? Home Based Primary Care is comprehensive, longitudinal primary care. It’s delivered in the home and this is a team of nurses, physicians, nurse practitioners, social workers, rehab therapists, dietitians, pharmacists, psychologists who are all working to take care of the Veteran and allow them to stay at home as long as it is safe to stay in that home. It’s for patients with complex, chronic disabling disease and it’s probably best described as appropriate when the Veteran is too sick to go to clinic. When clinic visits are simply too taxing and the Veterans are better served at home. That’s when Home Based Primary Care becomes a helpful program.

Okay, so with that background we can now turn to is this program safe and cost effective? And we have a number of studies that have looked at the safety specifically. It will come into a play a little bit today because we’ll talk about hospitalizations but primarily today we’ll talk about cost-effectiveness. And so we can certainly answer questions about the program as questions come into the question line but I want to give you a little background about outcomes in Home Based Primary Care and what’s known so far.

So there’s been a number of studies both in the VA and outside of the VA that look at hospitalizations and costs both to Medicare and to VA of those cared for in Home Based Primary Care and essentially the signal is that costs are lower and that that’s primarily due to lower hospitalization costs and fewer skilled nursing facility costs. In particular I wanted to draw your attention to the Independence at Home initiative. This is a demonstration in Medicare with a program that’s similar to Home Based Primary Care. And there’s noted to be a 17% savings in nine of seventeen of these programs who have met the mandatory savings threshold. The projected savings within Medicare has been large. This has been described as one of the most successful demonstrations Medicare has had. To the extent that they’ve extended the demonstration and I think the expectation is that this is likely to, ultimately be a benefit within Medicare in some fashion. So Independence at Home has been very successful. It was modeled after in many of its characteristics modeled after the program in the VA and so I think we have this example within the VA we’re going to present today but ultimately this could become very helpful as individuals look at Independence at Home and that this is really rolled out on a much larger scale than is currently seen within the VA.

So regarding methods of this particular analysis I want to now go ahead and turn it over to Roee who will go through the methods. Roee?

Dr. Roee Gutman: Yep, can everyone hear me?

Moderator: Yes.

Dr. Roee Gutman: Okay, good, so now I even have my own screen, good. Okay so, Cari that was great. I really enjoyed that. And so when Cari came to me, I was like “Oh, this is what I know how to do” right, because if I could randomize people to Medical Foster Home, or I could randomize them to a nursing home that I know exactly all the questions that she showed in the previous slide. And this is pretty much what I would work on. That’s the framework that I will work on. Obviously things are not randomized but we’ll try to solve that in a second. And the way that I think about those things is that I have outcome for that patient, or patient 1, 2, and if they went to a nursing home and then another outcome which is fixed and possibly known or unknown if they didn’t go to, if they went to the Medical Foster Home. And then I also have a bunch of characteristics on them, which is the X, and then W is the decision what they actually decided, or they, or their caregivers decided to do that that point is to go to a nursing home or not or to go to Medical Foster Home, which is the W. so what the W does is hide for me some of those results which you can see in the question mark that I have, that if you went to a nursing home then I couldn’t see what would be your outcome if you went to a Medical Foster Home. And then if you went to a Medical Foster Home I can’t see what your outcome would have been if you went to a nursing home. But this is the framework that I’m going to be working on and my idea is to try and fill those two question marks in some analytical way. Now if it was randomized then the X distribution would be exactly the same under for patients 1, 2, and 0, as it will be for N 0 to N but because it’s not randomized then the X distributions are different and that’s what we will try to balance or we hope that we balance.

Now X, here I’m assuming that these all observe but obviously there are some X’s that are not observed and for this case we assume that they are not influencing our decision to go to a nursing home or Medical Foster Home. So if the only thing I need to do is fill in those values though that will be easy right? Like I would just have something that looks like that, I fill out those values and then I’m pretty much done because I can look for every person who went to nursing home what would have been their outcome if they went instead to a Medical Foster Home. And I could just look for the difference for those two and I could just sum it up or not sum it up depending how I want to do that. And I could tell everyone what is the best cross or outcome, however I’m looking at the outcome for each one of those. The problem is that because I don’t know those values then my filling them in I also like also account for the variability so the way to do that, that I account for their variabilities to actually impute it or fill it in multiple times. In this case I will fill it in N times. And then I’m going to, within each data set I can analyze it separately and then just combine it together. There is often, I will give a glimpse of how we do that.

So how do I fill that in? I don’t have a lot of time but I can certainly answer questions if they come up. So the first thing is we would like to have people who are relatively similar on all of the characteristics. So the first thing that we have done is to keep those that are not. There are a lot of people who go to the nursing homes that have no chance of going to a Medical Foster Home. Or at least we have zero probability of seeing these type of people going to Medical Foster Homes, so those people are going to be dropped. We also have a bunch of people in Medical Foster Home, slightly lesser number that have no chance of going to a nursing home. We see that again based on some of the covariates so the first thing we have done is we removed those observations or those units that we couldn’t match on. Obviously that changes the population a bit but actually the proportions of them is not that big. The proportion of people in the Medical Foster Home that we had to remove is not big. Obviously in the nursing home it is because people in different areas have no chance of getting to a Medical Foster Home at all but they only have nursing home as a possibility. And the way to

Dr. Cari Levy: And Roee

Dr. Roee Gutman: Yes

Dr. Cari Levy: Oh Roee, I was just going to add and for folks who don’t know about the program, the reason for that is because there are I think about 114 of the Medical Foster Home Programs right now and of course there are more medical centers and places where Veterans can originate and so there just wasn’t an option of going to a Medical Foster Home Program. And there were fewer when we were doing this study so that’s the reason they had no chance of going to a Medical Foster Home. The program simply did not exist at their medical center whereas they did have nursing homes, there were nursing homes where they could go in that community and so that’s why. Okay, thanks.

Dr. Roee Gutman: Sure. And I will just add on that, that also there are people who are, I’m guessing very severe, like very sick that could not use Medical Foster Home and the only option is nursing home. So those are another. Am I right? I think so.

Dr. Cari Levy: Well, so we have very ill, I will say we have very ill Veterans in this program, and we actually have Veterans who are quadriplegic Veterans who are, you know, many of the Veterans are wheelchair dependent in this program so there’s really not a simple way to say this Veteran could only be in a nursing home and not a Medical Foster Home so we didn’t exclude those, any group of individuals because for one reason or another they wouldn’t be eligible for a Medical Foster Home. Anybody who’s eligible for a nursing home would be eligible for a Medical Foster Home, based on simply their medical criteria.

Dr. Roee Gutman: Okay. That’s great so, the other thing is you probably know, the way to like fill those in, so the way to fill those question mark in, I use, the first thing that we did is we calculated propensity score which I’m going to discuss in a few minutes about, we created knots in the propensity score and then we kind of like created a function that try to impute your values in the, if you were in, sent to a Medical Foster Home what would have been your values in the nursing home based on one function and then the other way around. Again this is based on cubic spline function, I can go into details but I’m not sure if this is really interesting, and as I said we multiply impute those data sets as pretty much the previous pictures that I have, I can probably show you. It’s pretty much that we impute it M times and then we calculate mean, standard deviation or whatever else we want actually here it was median and then we combine using Rubin’s Rule. So this is just like the prescription of the algorithm that we use. I will try to delve into every part of how we see that.

So the first subject we’ve done is calculate the propensity score. And as Cari said there are some nursing homes that had no one that went to Medical Foster Homes. Some centers that had no one that went to a Medical Foster Home so those center had to be removed and we try to like keep it only within centers or home facilities that had at least one person from Medical Foster Home and at least one person that went to a nursing home. So that restricted our sample. From there we used logistic regressions on the rest of the variables that we will see in a second that are supposed to influence our decision whether to enroll or not. And actually I did that with talking to Cari and other scientists where we spent a bunch of conference calls, to like decide which one we should keep and how we should keep them and what are things that might influence you to use Medical Foster Home or nursing home. What we did then is that we started iterating, we edit variables that we thought that may be influencing and then we checked the balance of those variables and we’ll shows you some of those balance plots soon, how they align and then we continue to do that, we added some interaction. And actually what’s important all this time that we did that we actually didn’t look at outcome data. And the reason for that is we were trying to be very objective. We didn’t want our outcome data to influence our decision what to include and what not to include. Very much trying to like mimic a randomized trial as much as we can. So that’s actually very important.

Now there are different ways, as I said here there is a bunch of balance metrics so we actually use the block to make sure that our groups are similar across the strata that we created and we created it, and there is one thing that is done is based on balanced across data. Which is pretty much the difference, it means across within its strata and then sum it up over all the differences and wanting to assess global balance within each of those strata within each block which you can do with an F statistic. I will just show you a bit of results of how we did that and you could see here two graphs. The one on the left is those Z scores. What’s nice about those is that, yes it doesn’t look exactly normal, but we do see that the largest difference that we have, largest normalized difference that we have is -0.5 the highest one was slightly higher but they are generally aligned with what we see and they’re not extremely big.

Then the other one that you see, the balance between blocks, this is the F statistic that’s what we expect them to see that they’re all aligned on this graph and they’re not too far off. Like they’re actually, they are very, they look like a uniform distribution. So if you think about it we checked a bunch of those variable and they seem relatively well balanced. And this is another way to like show that you can look at the love plot where we looked at all the differences that we have, you can see that the circles are what we had, the biases that we had before going into the study and then the red triangles are almost at the line. So we had huge biases, that are going, those are normalized biases so like minus 10 standardized differences, this is huge, and you can see that we brought it all the way in. So we do see that there are people with certain priority status for example that will not go to, that will probably not go to Medical Foster Homes so we try to find those matches that will go. And then other differences as well.

Okay, so now we are, so that was the propensity type so that now that we are done with the propensity we can like try and do the imputation that I showed before and this is the tool function that we had. You’re calculating those functions based on, or we calculated them based on the observed data and then we imputed the missing values that are missing for the Medical Foster Home we use the Y(0) function to impute what their value would have been if they went into a nursing home and for those that went to nursing home we imputed what their value will be for Medical Foster Home. Actually we don’t need those two function, and the reason is that we don’t need those this is a general question is because we are only working on the ITP, we are only looking for among the people who went to Medical Foster Home what would have been, would they have done better going to a nursing home. So we actually only need that function. This function is if we want for the whole population, we will need to put a whole population but we only need that function that the Y(0)X.

We did it both ways but we’re only going to show the results based on the people that we matched because the populations are very, somewhat different. There is a lot more people that chose the nursing home than people who go to a Medical Foster Home. Now the cost distributions we’re dealing with are actually extremely skewed and this is an example of one of them, you can, almost all of them are the same. There is pretty much people are not getting, most of the people are having, there is a point mass at zero and then like there is something that could go really really big with really long tails. So what we did here is we actually to model this fc(X) we actually used a two part model. One, first of all tells you if you’re going to have any costs at all and that again used spline along the propensity score and co-variates. And then to explain the rest of it we actually use something that is called predictive mean matching which we did the same model as log linear model and that its costs, then we just imputed the value in using the predictive mean matching. What it does is instead of like using the error that is estimated from the model it finds the person that has the predicted value that is closest to you and use those in. And that kind of like accounts for like I said very weird errors. It’s nice model because it doesn’t have to, it’s pretty robust to different error assumptions and different model specifications. And if you want to look, and this for HBPC cost, so like we can look at a distribution that is the original distribution, the black line, and then a bunch of those red distributions, there are just what we do on the control. So this is just, so they should like capture that same black line and you can see that there we have a bunch of branch of them that goes up and down so we are relatively capturing that middle zero and we go all the way to the high expenditures which is again showing at least on the control that the model is working.

Now once we combined everything together, once we imputed all those data sets we’re going to create a point estimate, we waited to combine the results across the data set, and what we did is we had a point estimate which is for example the median difference between a person receiving care in a medical foster home to that person receiving care in nursing homes and then that sampling variate. And over all point estimates across all those imputed data sets is calculated using this Q which is just the sum of all those Q hats that we had estimated and then the variance is the combination of the within variance to the between variance and you combine them across those values.

Let’s see, what else do I have? Yes, in this analysis so what we did, our Q in this case were the median differences and as you can see this is a point wide difference because I have imputed for everyone that went to a Medical Foster Home what would be his results if he went to a nursing home instead. So it’s the median of those differences, which is difference in the median of this one minus the median of this one, the median of the differences, when it’s among those that went to Medical Foster Home. And then the sampling variance within each data set I calculated using the Bootstrap distribution and we also actually examined the difference of proportion so if you had the difference of any costs. So like this is a delta function and I can look at the expectation of that delta function. So I think now I’m at the results. So I will let Cari tell the results because they are much more interesting than the methods getting there.

Dr. Cari Levy: Oh, I think the methods are quite interesting. I wouldn’t say that. Alright so I need to catch up to you and so this obviously is not for you to read every line of but the point is that these are all of the characteristics that we, or many of the characteristics that we looked at. Age, gender, ethnicity, marital status, median income, we also looked at, we stratified by I think nine different income levels, their ER visit number in the prior year, hospitalizations in prior year, and here we were trying to get a sense of what type of acuity they were facing in the year prior to their entry either into the nursing home or the Medical Foster Home. And then length of stay and priority status, 1a. The Elixhauser Comorbidity Status is the one that we, or score is the one that we chose, we looked at several comorbidity scores. We also looked at the JEN Frailty Index and CAN scores, which I think many of you are probably familiar with, and that was for the probability of morality in one year. And you can see the differences there between the Medical Foster Home cohort, which is the first column, and then the nursing home cohort, which is the second column, and of course lots and lots of differences between these groups in terms of their ethnicity, their marital status, their median income, their length of stay, their comorbidity indexes, their frailty, everything, not everything but most everything had pretty substantial differences in the two groups. So the goal of course with the propensity matching was to fix a lot of that and you can see in the second batch of results there that many of the differences were adjusted with the propensity matching procedures you just heard about. Roee did you want to add anything there?

Dr. Roee Gutman: Yeah, so actually you can see that there are still some differences after the matching, that why we added the additional subgroup and modeling to like account for those relatively few differences and that why the previous slides that I have shown you that there is overall we are pretty much balance across all those differences.

Dr. Cari Levy: Great, thanks. Then the next slide talks about the costs before and after matching, and here you see the after matching of course is what we’re the most interested in. And the things I want to draw your attention to on this particular slide, if you go to the after propensity matching section there and you look down, hospitalizations actually look quite similar and I presented the HBPC data earlier which showed that for much of the work that’s been done to date, hospitalizations were lower for HBPC and that accounted for some of the lower costs that were observed. In this case you can see that the costs were lower but not statistically so and then for HBPC of course we expect those costs to be higher that was being offered to the individuals in Medical Foster Home and not into the community nursing home programs so of course that is anticipated to be a higher cost. And then the other big place where you’re expecting to see differences are in the actual costs for the nursing home, which are down second line from the bottom, so that’s where we see really that the differences come about is in the costs of HBPC for those in Medical Foster Home and then the cost of the actual nursing home care for those in the nursing home. So very logical expectation there. And just these raw differences here you see about 70,000 when all of these different categories of costs are included in the Medical Foster Home cohort for the duration that they were followed forward in time and about 97,000 for the nursing home cohort for the duration of time they were followed forward and that was a significant difference. Roee I’m going to let you talk about the mortality data if you would.

Dr. Roee Gutman: Sure. So what you see is that this the mortality is at one year is actually favorable for the Medical Foster Home. So there is less mortality in the Medical Foster Home compared to the nursing home at one year. We see the same stuff at six months but it’s a lot lower. You might be saying, oh why are more people dying after one year, you should have like lower confidence interval. But what happened is that our, the modeling that I shown you before is better at predicting the six month mortality based on whatever you had before going to a nursing home or before going to a Medical Foster Home than predicting what would happen for you in a year. So in a year is kind of like more are they urgent but still considered the mortality is a lot lower after one year, significantly lower. So I think that that’s actually interesting but, and that could also affect the costs that we will see in the next one, so what could happen is that people who live longer obviously have higher costs, so they are not like the healthiest people alive so that could be a problem.

Dr. Cari Levy: yeah, and we did adjust for the days that they were alive and so on this next slide you see the propensity adjusted costs. And I’ve tried to bold the things that we can pay attention to which again are the HBPC visits, just to orient you this is Medical Foster Home costs minus the nursing home cost and so as you can see of course the HBPC visits, as we expected from the prior slide, were higher and then the nursing home costs were lower for Medical Foster Home and total costs after enrollment were lower. And once all this shakes out it ends up being about $100 a day savings in the Medical Foster Home Program per day alive, and that’s calculated per day alive. And I haven’t shown all of the different categories of costs here just because it gets so busy but this included home health, therapy, pharmacy, lab, mental health, dialysis, etc., etc., in this total cost after enrollment in either the Medical Foster Home program or the nursing home program. And I should add here that we followed them forward and they needed to stay enrolled in the nursing home program for 90 days but they could leave the nursing home. So this is likely an underestimate of the nursing home costs for those who were truly long stayers and stayed in the nursing home for a period of time. Because if we included, basically if we tried to include them beyond that we end up losing a lot of sample size and so we decided to cut It off at 90 days. And so, anyway, for what it’s worth, that is the length of stay situation. Roee did you want to say anything more about this particular slide?

Dr. Roee Gutman: No, what was the other thing that we didn’t mention is that we didn’t include that it’s kind of like a bit misleading because we didn’t state that that’s what the system paid and not necessarily what actually went out of pocket for some of those Veterans Right? And nursing homes being completely paid by the system.

Dr. Cari Levy: Right, so the Veteran, as I mentioned on the introductory slide, is paying on average $2500 a month directly to the caregiver and what we were looking at is really the Medicare and VA expenses here and not what the Veteran’s contributing to the cost of care and so that is not accounted for on this slide.

So this is great so we’re coming up just with a good 15 minutes or so for questions. So in summary the Veterans who naturally selected into this program tended to be younger, they were more often unmarried and importantly, actually I didn’t point this out, I’m sorry, in the introductory slide but about 26% of the Veterans who selected into the Medical Foster home Program are high priority, so high service connected Veterans and priority 1a, and those individuals could have their nursing home costs covered by the VA but they’ve chosen then to pay out of pocket for Medical Foster Home care. And in the discussions that have happened about Medical Foster Home that’s been telling that there are a certain percentage of Veterans who care enough about being cared for at a personal care home and that they’re willing to make that chose to pay out of pocket rather than have their care funded basically by the VA. So the priority 1a status was one of those variables that Roee mentioned that was hard to match on because it does influence significantly the choice of where a Veteran goes for their care. And then also just to comment on the comorbidity as you saw it exceeded that of Veterans in other long term care settings but of course we’ve adjusted for that in our procedures. And then costs of this high intensity and home, home-based primary care program and then the support that the caregiver provides does seem to be offset by a reduction in residential care costs.

So here’s just another picture of a home and you’ve got the VA provider there in the home, the two caregivers, so this is a husband and wife caregiver couple and then the Veteran sitting there having a conversation in a typical Medical Foster Home. And then I just did want to present this screenshot of one of the articles that was written about the Independence at Home demonstration and this was one of the articles reporting on an average of $1,010 savings per beneficiary and that CMS had decided to continue this demonstration because of its success.

So, just in summary we talked a bit about the converging public health challenges and how this is one program that’s trying to meet the demands of the current challenges of unsustainable health care cost rises and the caregiver challenges that we’re currently facing. We talked a bit about the structure of this program, and then the particular methods that were used and results that were found in this study. One of the recent steps that’s been taken, just to follow up on the payment that the Veteran’s making is actually to try to advance legislation to pay for room and board because this is one of the main barriers to entering this program, many Veterans aren’t able to afford the $2500 a month and so those who can receive payment because they’re highly service connected for long term care in a nursing home will choose to go to a nursing home instead even if they wish to be in a Medical Foster Home and so there’s been legislation for those highly service connected Vets to say rather than paying the $6000-$8000 we pay as a VA to have this Veteran in the nursing home could we instead pay the caregiver $2500 and allow them to be in a Medical Foster Home. So this is currently being advanced for consideration. And then of course I just wanted to thank Roee for all of his help and Tom Edes and all those in Central Office for their help on this project. And I think we’re now ready for questions.

Moderator: Great, Thanks so much. That was a great presentation. We do have some questions coming in. first question is asking whether or not you captured any data on patient experience or satisfaction in each cohort.

Dr. Cari Levy: Yeah, so that’s a thing that’s missing from this work. There are surveys that are sent out from the program office and those uniformly show that the Veterans are very happy with this program. I think the hope would be that we could have a more rigorous sort of CAP survey that’s sent out and I’ve just learned that I believe there was funding for a CAP survey to go out to all home-based primary care participants and I think that was just recently funded so we’ll have more rigorous data in the coming hopefully year. But right now it’s a pretty informal survey that goes out from the program office and people seem pretty darn happy. I can tell you we have been in, oh gosh I think we’ve done over a hundred qualitative interviews as a part of the qualitative portion of this study, and the Veterans are very happy. Now of course we’re going into homes where people are probably naturally happy because that’s why we’re being taken to those homes but it’s a pretty terrific program and we absolutely do need rigorous data on the satisfaction and then of course ultimately need to compare that to CAPs data in nursing homes. That’s ultimately what needs to happen.

Moderator: Have you done any or collected any data on the caregivers themselves? Any sort of basic descriptives of who they are, and those sorts of things?

Dr. Cari Levy: yeah, so another great question. We’re just now getting IRB approval for a qualitative study of social networks involving these caregivers. Our suspicion is that they have networks that allow them to sustain this 24/7 caregiving work which is clearly quite something. And so we’re just starting that. What we know about the caregivers in the three communities where we did, or four communities where we did qualitative interviewing was that they were largely immigrants and they were communities of immigrants who would self-refer and that’s how they heard about the program and were able to cross cover for one another. So it would be a cousin, or friend, or a sister who was also a caregiver so they understood the requirements of the program and if they needed to go to the grocery store or go on vacation or do something like that they could have their loved one come over and look after the Veterans in their home because they knew about the program. So there was a lot of ability to help one another out because they were in community with one another.

Moderator: We have another question that came in: is there a minimum percent service connected to be in the program and does this apply to married couples?

Dr. Cari Levy: I’m sorry can you repeat the question?

Moderator: I think it might be a two-parter, so is there a minimum percent service connected status to be in the program and I guess does the program apply to married couples?

Dr. Cari Levy: Oh, okay great, so there is no minimum service requirement, any Veteran can be in the program and there is a not a specific sort of programmatic ability for someone to bring their spouse into the program however, the caregivers aren’t, there’s no exclusion for them to provide couples care. So if there were a Veteran who wanted to go to the caregiver program and that individual caregiver wanted to also accommodate the spouse they could choose to do that that would not be a problem. We didn’t see that in our interviews, but that’s certainly possible. And I’m reminded by one of my colleagues that we actually do have a paper on caregivers. So thank you for that and if we could get the individual who asked about that in that paper we talk about the individuals that we’ve interviewed through the qualitative portion of the study and they’re remarkable people for certain and we can get that paper to you.

Moderator: Great. Did you consider doing sort of a societal perspective in the costs given or is it sort of shifting costs of it to the Veterans and I know you’re working on that but did you consider a broader perspective? So including Veteran costs.

Dr. Cari Levy: Yeah, so we did think about that and the amount that they’re actually paying we didn’t have a terrific way of capturing that so it can vary and we weren’t certain that the $2500, you know if we just imputed that number if that would actually be capturing the number accurately. So we thought about it, we didn’t do it, we thought this would be a way to give the VA an estimate of what’s happening within the VA system and I think the fear is if you start capturing the Veteran component the risk is that there won’t be an appetite for trying to support this program which is a real risk in the current environment and so that was how the decisions were made. Roee did you want to comment on that?

Dr. Roee Gutman: No, I think that that’s right. Like it’s, like, well again any methods can only do from what we have. So everything else would be an extrapolation from stuff that we don’t have exactly. If we collected more specifically we might be able to fill in some data that we don’t have but in this case we didn’t have that. So I think a [unintelligible 52:37] we can see how much there is different and then about how much those people leave and then divide it by the amount of funds, I think that’s about as good as we can get.

Dr. Cari Levy: Right.

Moderator: We don’t have any more questions yet. Oh, we just had a question. So there’s a comment here there’s insufficient support for caregivers, are there plans to implement that as part of the complete program?

Dr. Cari Levy: Yeah, so one of the things that a lot of the caregivers commented on was respite and was actually sort of difficult for them to access. It’s available but logistically it was a little bit difficult to access and frankly a lot of times they didn’t want to access it because they found that their care was what they wanted to provide and if they took the Veteran to, for example, a nursing home for respite they just didn’t trust that they would be as well cared for as they provided themselves, and so they worried a lot that when they got back from, let’s say a vacation the Veteran just wouldn’t be as well. And so they tended to not access the respite that was available to them. And no question, the caregiver support just globally is a bit of a problem. So, our hope with these caregiver interviews that we do is to understand the caregivers who are resilient and able to continue this work what keeps them going and then we’ll also be interviewing caregivers who have left this work to understand what was it that caused them to leave. Was it programmatic issues, was it that they just didn’t enjoy the work or were there thing that we could do to support them and keep them engaged longer.

Moderator: right and there’s a follow up question about sort of what additional costs would more support to caregivers in the program add? If you have anything you want to add to that.

Dr. Cari Levy: Yeah, it’s of course it could range from expensive if there were a lot more respite care offered to very simple things like allowing these caregivers a social network of other caregivers within the program that they can access and troubleshoot things with and that would be really not much cost at all. There’s an excellent tool kit that the folks and the director from extended care office have put together to help programs get off the ground and then the Medical Foster Home coordinators have resources to try to help caregivers basically be business owners because that’s essentially one of the roles that they’re filling as caregivers because they also have to sustain a business model, they need to have enough income to support themselves and keep this business going which is what it is and so there’s loads and loads of resources for them and we may not know exactly what gaps we’re not filling. So I think the hope with some of this work is to understand what gaps are there and what we can do that hopefully won’t be another added expense that makes the program unsustainable but allows for sustainable support.

Moderator: Great. And we have a question about methods, what kind of matching methods did you use?

Dr. Roee Gutman: so the original one, well the matching method was just to get rid of some of those that are really out there that are not close because we have so many nursing home residents compared to the Medical Foster Home we just used like a regular gridded matching type method and we adjusted like we do with the numbers. I think that we ended up in the matching was one, two, three, four or five because we allowed one person to be matched to more than one, one person in Medical Foster Home could be matched to more than other to people in nursing homes and we could still use that because we just ended up to like estimate the function that I described earlier and then it wouldn’t harm or complicate the standard error estimates.

Dr. Cari Levy: Right.

Moderator: And we have a final question: Could you please post Roee’s resources about this methodology a little bit to learn about the methodology?

Dr. Roee Gutman: Oh sure.

Moderator: Like do you have a paper or yeah.

Dr. Roee Gutman: I have two papers that I can send it to anyone that is interested.

Moderator: Great.

Dr. Cari Levy: Yeah, and Roee, I think you had cited them on the actual slide also hadn’t you?

Dr. Roee Gutman: Yeah no, those were like just other people’s work, I never cite my own, I don’t know why. But I could share it with, if someone want to for me to send it specifically I could do that or I could send it to Heidi and she could distribute it, I don’t know how that works.

Moderator: Great, Yeah, so we have a few people requesting the questions about the methods and resources so that’s maybe if, I don’t know if that’s something we could post with the lecture or links to those or something like that Heidi, I’m not sure.

Heidi: Yeah, as long as I have a link or somewhere to direct people I guess I can include that in the archive notice that goes out.

Moderator: Great.

Dr. Roee Gutman: okay, I will send it and all the links for those.

Dr. Cari Levy: And we can post that caregiver paper too if that’s helpful for people.

Moderator: Great. And I think that’s it for questions right now.

Dr. Cari Levy: Perfect timing.

Heidi: Did you have any closing remarks?

Moderator: I just wanted to thank both Cari and Roee for taking the time to give this presentation and maybe give a brief plug for our next Cyberseminar from HERC which is on October 18th, I believe. And yeah, that’s it. Thank you very much.

Heidi: Great, thank you everyone have a good afternoon.

[ END OF AUDIO ]