Maria Hecht: Welcome to the HSR&D Investigator Insights podcast series. This is Maria Hecht. I am a research content editor with the Center for Information Dissemination and Education Resources, which is an HSR&D-funded resource center.

I am talking with Dr. David Chan, an HSR&D core investigator with the Center for Innovation to Implementation Fostering High-Value Healthcare, which is located in Palo Alto, California. Dr. Chan is an associate professor of Health Policy at Stanford and he has a deep background in economics. Found his way to UCLA Medical School and the call of economics pulled him back to earn his PhD at MIT.

Dr. Chan and colleagues recently published some really interesting results from a fascinating study about veterans’ mortality after ED visits by being taken to ambulance either to a VA or non-VA hospital. Dave, welcome to the podcast.

David Chan: Thank you. Thank you for having me.

Maria Hecht: This is a really interesting study to use ambulance transport as sort of a common question. How did you come to this? What was your initial thinking behind looking at ambulance transports?

David Chan: I think first, we would have to give credit to a paper in economics that previously used Medicare claims to identify ambulance rides and to link these ambulance rides to visits to the emergency department. Borrowed a lot from this great paper by Joe Doyle at MIT and John Gruber and others on this paper.

I do a lot of research in the emergency department setting. I'm not an emergency department physician but the emergency department setting is, I think, a really rich setting where patients are coming oftentimes with unknown conditions. There is a lot of data, there are a lot of visits that you have in the emergency department in a given day, and oftentimes, these patients are very sick. So, when we are looking for impacts on health, unfortunately, for these patients, oftentimes you will have adverse events such as mortality and that is something that we’re studying in this setting, which allows us to really, in stark terms, demonstrate differences in quality between VA and non-VA medical centers by looking at something like mortality.

Maria Hecht: When this was a working paper for the National Bureau of Economic Research, your title was VA Advantage. That was an interesting choice for a title because based on this particular paper, which did show significant advantages to being taken to a VA ED, would you say that based on your overall body of research, that VA care is truly advantageous?

David Chan: Yes, I think that the literature would support that. I think there is pretty broad literature out there that looks at process measures. There are hundreds of different process measures pointing to quality of care and I think that the overall weight of this evidence is in favor of VA being a higher quality of care.

What we do in this paper is that we are more directly studying the same population of veterans; veterans who are eligible for Medicare and who also, of course, can use the VA, who can use either a VA or a non-VA hospital. A lot of the previous literature has compared veterans who used the VA with non-veterans that use a non-VA healthcare system.

So, I think that is the contribution that we’re making in this paper by focusing on a group of veterans, as you mentioned; ambulance transport, which is at a very crucial time for their health. And we are directly looking at a health outcome such as mortality.

Maria Hecht: Dual eligibility, which is allowing veterans to use both VA care or Medicare care in the community, it’s a really helpful comparison. What are some of the kinds of challenges that you find other than, say, looking at a younger population who’s not dually eligible, who’s not in the Medicare framework?

David Chan: I would love to broaden the population on our study to a younger population.

That said, I think the Medicare population is pretty well-understood in health systems research and in health economics because we have data for Medicare enrollees. It’s perhaps one of the most studied populations of patients when it comes to health systems research.

And not surprisingly, when you look at older patients, they have more healthcare conditions. They might have worse outcomes when they go to the emergency department by virtue of them being older.

I think the most important thing to note for this study population, though, is that they are brought in by ambulance. So, if you look at the population of patients – even population of patients that go to the emergency department – the minority of them are brought in by ambulance. Less than 5% of these patients are actually brought in by ambulance. And the patients that are brought in by ambulance have a tenfold, I would say, mortality rate. So, these are very sick veterans.

If we were to look at veterans, or just people who aren’t veterans who take ambulance rides, it would be equally sick. Within 30 days, about 10% of ambulance riders will die. And we also show that within a year, about 30% of these veterans suffer mortality.

Maria Hecht: And I do believe that you actually had mentioned something about the fact that the long-term versus short-term survival rates – yes, I'm kind of curious about the relationship between cost and utilization because this is always an interesting one. In the study, you had said that the VA ED visit had reduced 28-day combined spending by about $2,500. Yet, interestingly, the VA did not uniformly reduce utilization. VA increased outpatient visits in the following 28 days.

So, do you think that’s generalizable overall? Outpatient visits might be more intensive but they cost less?

David Chan: I think there were some general lessons here that are consistent with some big differences between the VA and non-VA care. I think it’s important to take note of these differences.

So, the VA as a whole has a well-defined patient population, which is veterans. The non-VA healthcare sector, in contrast, treats patients that may come to the healthcare system once and not come again; less well-defined. Therefore, it also makes sense that the way that the VA contracts for care for this well-defined population is very population-based. It’s not fee-for-service like most of the rest of the US healthcare system.

In contrast, the non-VA healthcare sector, because it doesn’t have a well-defined patient population and because somehow, the federal government that is Medicare needs to find a way to pay for the care that’s being provided, it’s very much based on fee-for-service.

So, I think that leads to some very interesting economic incentives. As you mentioned, we find that the cost of care – the amount of money that the federal government spends, as well as the amount of money that patients spend in the form of copays and coinsurance – is higher if you were to go to the non-VA healthcare system than for people that go to the VA healthcare system. This holds true for this study where we have veterans that are as good as randomly assigned to the VA versus a non-VA hospital.

When you kind of unpack that, when you look at what are the types of care that are being reported to be provided, or provided, in the VA versus a non-VA healthcare system, you see some patterns in terms of what types of services are more likely provided.

So, in the VA, you have, actually, services that reimburse less well, are more likely to be provided at the VA. We see things like telephone calls, which are often reimbursed only $10 or so. If you see a code such as making a telephone call by somebody who’s not a doctor to a patient, that is more than 95% likely to come from the VA.

On the other hand, you see other types of codes that imply more intensive services or that imply that the patient was a very complicated patient and required a lot more time on the part of providers. So, there was a particular code, for example, that says, “I spent more than 30 minutes talking to my patient on the day of discharge.” A code like that, it is more than 95% likely to come from a non-VA hospital.

Also, we see more likely inpatient admissions; in general, inpatient services as opposed to outpatient services and things that pay more or are reimbursed more are more likely to be seen outside of the VA than in the VA.

If we add that altogether, that is part of the explanation for why the VA care – for why non-VA costs more than VA care.

Maria Hecht: And yet, generally speaking, we see better outcomes in VA.

David Chan: Yes, yes. So, you see that the VA saves lives and saves money. And I think in part, this is because it’s got a well-defined patient population. The contracting is to provide healthcare for this population. You know, it’s able to track the health of this population because this population is well-defined. in contrast to the non-VA healthcare sector where the patient population is not well-defined, contracting is based on the services that you provide. There’s not a natural population to track the health of these patients.

Maria Hecht: Right. That’s really interesting and brings me to my next question, which is sort of about continuity and coordination of care; particularly, with respect to integrating EHRs. Having an electronic health record clearly matters in terms of patient health; something you can track, something you can track over time.

Yes, you’re a VA physician and a VA researcher, but what’s your understanding of the non-VA healthcare landscape with regard to continuity and coordination of care through EHRs, given that there was a recent – you know, fairly recent – mandate about adopting those? Do you think that the private sector’s improving in terms of that? And how available do you think that data in the private sector’s going to become?

David Chan: I know that the private sector has lagged in terms of adoption of electronic health records. I know that as recently as 2008/2009, very few private hospitals had a fully functioning electronic health record.

There had been legislation to encourage this and we have seen adoption of EHR in the private health sector.

And then, I also know that since 2009, there’s further legislation to encourage that these electronic health records actually talk to each other. So, I get the sense that there has been improvement.

The issue of continuity of care is a little bit more difficult to get at. There has been legislation such as the Affordable Care Act, which has encouraged the formation of some organizations like accountable care organizations to encourage that.

But I think structurally, the fact that you have a population that’s not very well-defined for an average non-VA healthcare provider, that makes it difficult to coordinate care with other providers that might be taking care of that same patient. Or you have like a well-defined population using a healthcare system or different providers within the same healthcare system all know that they’re treating the same patients. I think that would naturally lead to easier coordination of care.

You know, I think there are some analogies like this in the private sector like Kaiser. But I think in the majority of other situations in non-VA private provision, there is quite a bit of fragmentation.

Maria Hecht: I know it’s a little bit off-topic with regard to your paper but I was really curious to get your perspective on it given that it was something that I think makes an impact in VA and definitely impacts quality.

Again, comparisons between VA and private healthcare sector. What’s your take on the fact that care in the community is still fairly new. And so, if you were looking at the number of veterans transported to non-VA EDs, do you think that even though more veterans will continue to either end up in a non-VA hospital or choose to use non-VA care, do you think there will continue to be a VA advantage and VA’s quality will continue to remain higher than the private sector?

David Chan: It’s a good question. I think this kind of follows on your previous question. Some of this might depend on mechanisms such as health IT. We know that the private sector has improved due to legislation in terms of the adoption of health IT.

Some of it, though, I think is more structural and it will depend on whether we can have well-defined patient populations at the private sector that, you know, a hospital in the private sector will be responsible for and can coordinate care with other outpatient providers. I think that is something that we should all be striving for as we improve the US healthcare system, in general. I think that is a major challenge and it’s something that we should work on to improve continuity of care, coordination, integration of care. You know, having aligned incentives for delivering health rather than just delivering services that are piecemeal.

For the foreseeable future, I think the VA has an advantage – will have an advantage – for treating veterans.

Maria Hecht: Was there a finding out on this study that you were just really surprised by?

David Chan: I think some of the findings on the different services that are more likely to be provided at the VA versus the services that are more likely provided outside of the VA were really striking.

If you think about it a little bit more, it makes sense. But I was not expecting to find that some services are almost never provided outside of the VA but much more likely to be provided in the VA.

Oftentimes, when we talk about healthcare spending, we talk about it in some type of vague sense; How much spending is going on? Let’s just boil it down to dollars and let’s not look at the different types of care that this can aggregate.

And I think when you disaggregate that, look at the heterogeneity and the different types of services that are provided and actually see that some services are much more likely to be provided by the VA like making telephone calls, that is, at once, striking, but also, consistent with what I was talking about earlier how the structural features of having a well-defined patient population and having population-based contracting; that would make sense.

Maria Hecht: I wanted to know if there are any particular aspects to this study, which was really widely covered and I'm sure you were really gratified by that because, certainly, as investigators, you don’t want to do your work in a vacuum and not have anybody know about it. Is there anything else that you’d like colleagues or the listening audience to know and to be aware of that you felt might not have been addressed by other coverage or other interviews?

David Chan: That’s a great question. I think that the coverage has been great. And like you said, it’s gratifying to hear that this is reaching a medical audience, it’s reaching a policy audience.

I think it’s important to highlight that we do see quite a big heterogeneous population in this group of ambulance riders. And if anything, we see a whole bunch of veterans who are disadvantaged who have mental health and substance abuse issues and who are minorities who find benefit especially more from the VA; these vulnerable veterans where continuity of care is especially important in the emergency situation. We see evidence where those veterans benefit more.

The other thing I wanted to highlight is that we looked at many different types of veterans defined by their characteristics – by their demographic characteristics, by their medical condition, their prior utilization. We find intuitive patterns where vulnerable veterans are more likely to benefit and veterans with a prior relationship with the VA are more likely to benefit.

But that said, we don’t find a single group of veterans that is harmed by going to the VA, and I think that’s really striking. The VA advantage holds across different geographic locations, across hospitals with different characteristics, across different types of veterans, and that just gets to the magnitude of this benefit of care or well-defined patient population.

Maria Hecht: That’s great. I really appreciate you sort of looping back on that. Just turning real quickly; I’m just extremely curious how you started off with this background in economics, went to medical school, then, went back to economics and ended up in the VA.

David Chan: Looking back, I’ve kind of been driven by, I guess, two things. One is that ability to be involved in patients’ lives and to make a difference and to treat patients; I’ve always viewed that as a privilege. I came from a medical family. My mom was a nurse, my dad was a doctor.

That said, I also had this other part where I was a bit of a quantitative nerd. I’ve always been drawn to quantitative things. And you know, even though I think that the one-on-one patient interaction is very important and there’s so much satisfaction that I get from that, being able to ask bigger-picture questions, particularly in healthcare, has always attracted me. And those two things, I think, have shaped the training that I got. You know, I was drawn to math and economics in undergrad. Didn’t really think of being of an economist as a career choice.

I went to medical school; then, I did a Master’s in Health Policy where the economics kind of came back and I was very much drawn to that.

And from then on, I got the idea that being an economist, as well as physician, could be a very powerful and impactful place to speak from.

Maria Hecht: How did you end up coming to the VA?

David Chan: A lot of medical students have experience working in the VA. And from my perspective, after going through residency and doing my PhD, was that the type of research that would make sense from having both the physician hat and economist hat would be research where I can really kind of look into the black box of what is going on in healthcare delivery.

When I was a PhD student, I did this using data from a single hospital. I used the electronic medical record of this single hospital and I was able to see, in a very kind of rich way, what doctors are doing, what orders are they writing, what are they seeing in terms of the electronic medical record. This was a single hospital.

So, when I thought about the VA, that you could actually get the same level of data from electronic medical records gathered from more than 100 different hospitals in the VA system, it just seemed like an incredible research opportunity. And from a clinical side, it’s just been very fulfilling to practice with the VA.

I mentioned some of this stuff in the research how the contracting relationship between payers and providers outside of the VA is very much oriented along fee-for-service. This impacts what the job of the doctor is in the non-VA medical center.

So, I work at the VA, you can tell – like I’ve worked both as a hospitalist attention and at a VA hospital, they’ve been both privileges. But the job that you have at the VA is a different where you focus less on documentation or billing purpose and frankly, from my perspective, you have more time to attend to things like quality improvement and to patient care.

So, it’s been gratifying to both be a researcher and a physician of the VA.

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