Jill Harrison (00:02):

Hi, this is Jill Harrison, Executive Director of the National Institute on Aging IMPACT Collaboratory at Brown University. Welcome to the IMPACT Collaboratory Grand Rounds podcast. We're here to give you some extra time with our speakers and ask them the interesting questions that you want to hear most. If you haven't already, we hope you'll watch the full Grand Rounds webinar recording to learn more. All of the companion Grand Rounds content can be found at impactcollaboratory.org. Thanks for joining.

Rosa Baier (00:31):

My name is Rosa Baier, and I direct the Brown University Center for Long-Term Care Quality and Innovation, which we call Q&I, and which is the administrative home for the IMPACT Collaboratory. Like IMPACT, Q&I focuses on pragmatic research. And today I'm pleased to be speaking with Dr. Jim Rudolph and Dr. Betsy White, both of whom are affiliated with the Brown Center for Gerontology and Healthcare Research. I've been fortunate to work closely with both of you on various studies and I listened with great interest last week during your talks. Unfortunately, our Q&A then was cut short due to a glitch with Zoom so we're now reconvening to ask some audience questions. Dr. Rudolph and Dr. White, could you please start by reintroducing

Dr. Jim Rudolph (01:12):

I'm Jim Rudolph. I'm a Geriatrician and Palliative Care physician. I'm based at the Providence VA Medical Center as well as Brown University.

Dr. Betsy White (01:21):

And my name's Elizabeth White or Betsy White and I am a geriatric nurse practitioner. My background is in long-term care and I am currently a postdoctoral fellow in the Center for Gerontology and Healthcare Research at Brown in the School of Public Health.

Rosa Baier (01:39):

Thank you. You both described projects that leveraged data to understand how COVID manifest in older adults. Briefly what is the one key finding from your research that you'd like the audience to walk away with?

Dr. Jim Rudolph (01:51):

From my research I think it's something we've known for a long time, which is each individual older adult is an individual. And so each one will manifest this disease in a unique way. While there are common elements of COVID-19 in the older population, particularly as we get to the frailer nursing home population, there's a unique constellation of symptoms that develop.

Dr. Betsy White (02:18):

Yeah, and I would just piggyback on that. I mean, I know always in my training, I was always taught that older adults don't read the textbook. They tend to present in nonspecific and atypical ways. And we're finding that as well as we're looking at how individuals with COVID particularly nursing home individuals are presenting. There are certain symptoms that are more common, low-grade fever, hypoxia, cough, but we also see a lot of atypical symptoms such as nausea, vomiting, and diarrhea. So it's a very challenging population to categorize and classify symptoms in.

Rosa Baier (03:02):

Both of you are clinician researchers who are in active practice. And Dr. Rudolph, you mentioned you're a geriatrician you're in the VA health system. Dr. White, you're a nurse practitioner with experience in community nursing homes among other settings. I'm going to start with you, Dr. White, can you tell us how vitals and other changes in condition are typically tracked in nursing homes?

Dr. Betsy White (03:22):

So in nursing homes, usually in your typical long-stay population, people who are in the nursing home because they need assistance with daily activities, usually vital signs are monitored about once a month or as needed. So if the person is feeling ill, if there's a change in condition, then obviously they will monitor them more frequently. But on a regular basis, that's generally about once a month. Individuals that are in the nursing home for post-acute care, who are a little sicker, have a little more things going on, their vital signs are usually monitored on at least a daily basis.

Dr. Jim Rudolph (04:00):

So it's a fascinating study in finding that relatively few nursing home residents meet the CDC's fever threshold of 38.0 degrees Celsius. With that said, I think we need to begin to recognize the uniqueness of the population and use the resident's own baseline as the base point from which we then calculate a change in that baseline. So if a resident runs at 36.5, the threshold for that resident maybe 37.0 or 37.5. I think it's going to vary a little based on the residents, but in general, I think we need to think about using the resident's baseline. And we're finally at a point where electronic medical record infrastructure has evolved to the point where we can calculate what that baseline is using some of those monthly measurements that Betsy talked about.

Rosa Baier (05:02):

Dr. White, you discussed not only common clinical presentations in this population, but also the relative importance of the universal testing in facilities with COVID cases and those that are COVID-naive. What are the implications for testing policy and protocols?

Dr. Betsy White (05:17):

So we have a really interesting research collaboration with Genesis HealthCare. So COVID is a very complex, rapidly evolving problem. There are a lot of clinical and operational questions to try to parse out and in order to be able to do that, we need to have real-time clinical data. So we have between Brown University and Genesis HealthCare, we have a very productive research collaboration where they're sharing all their clinical data with us. So we have the advantage of being able to see in close to real time, the number of cases, the number of deaths, as well as all individual characteristics of residents from their electronic medical record data.

Dr. Betsy White (06:03):

And Genesis is also the largest provider post-acute care in the country. They have roughly 350 skilled nursing facilities across 25 states. And they have a large subset of nursing homes that have undergone universal testing, otherwise known as a point prevalence survey, where everyone in the facility is tested. So as we've started to look at some of their preliminary data on those buildings that have been universally tested, what we're finding is that about 45% of all the cases that they're identifying are

asymptomatic or presymptomatic meaning that they, at the time of testing, they don't have symptoms, but then they later go on to develop symptoms.

Dr. Betsy White (06:43):

And this is very important when you think about dissemination within a nursing home, because we know that the way that this virus spreads with the nursing homes is predominantly through asymptomatic and presymptomatic spread. So what we're finding as we look at these buildings that have been universally tested is that once the virus is already in the building, so meaning when you test a building that already has at least one case, you will almost always will find additional cases. And that has very important implications for testing policy, because it really shows that once the virus is already in the building, once a facility already has a confirmed outbreak, it's absolutely critical to get universal testing into that building rapidly so that the leadership within that nursing home can identify and cohort cases appropriately.

Dr. Betsy White (07:37):

Simultaneously, we also were able to look at facilities that had not had any resident cases. So in other words, they were COVID-naive buildings. So they didn't have any known cases, but still about 15% of those buildings identified new cases as a result of universal testing. So it shows that there's ways that we can... Testing capacity is still limited in many parts of the country. And I think the applications are, there are certain buildings that absolutely need to be prioritized, but testing policy can be adapted to local conditions.

Rosa Baier (08:17):

Your findings for both projects highlight gaps between the emerging science and the CDC recommendations. Have either of you had communication with government officials surrounding screening recommendations for older adults or targeted use of testing in nursing homes?

Dr. Jim Rudolph (08:33):

The VA operates 134 community living centers, which is our version of a nursing home. And we operate on a unified medical record. And we're incredibly dedicated to the health and wellbeing of the residents who reside in our community living centers. As we've gone through the COVID crisis, we've demonstrated really aggressive measures to improve infection control in our facilities in response to this crisis. Let me give you an example. In early February, if you said you were going to socially distance a resident in a nursing home, you would have been cited for it on your annual survey or your state inspection, because that's against the culture of what we've done in nursing homes. And in a matter of weeks, we reversed all of that. It isn't popular with our staff, it isn't popular with our residents, but we recognize that COVID is such an incredible threat to them that we needed to take these steps to do that. As a government agency, the VA has been in regular communications with CDC and CMS about the challenges of COVID in all populations that we serve.

Rosa Baier (09:57):

Dr. White, your finding's built on prior presentation of data from the Genesis collaboration that included some information about the relationship between community prevalence of COVID and the risk of COVID entering facilities. Taken as a whole, how has the results of this ongoing collaboration affected our thinking about the risk factors for COVID entering facilities and the policies and procedures that should result?

Dr. Betsy White (10:28):

So I think one of the most important risk factors that we're finding when we look at both the likelihood of having any outbreak, and then also when we look at the severity of the outbreak, meaning the counts of cases and the counts of deaths within an individual facility, what we're finding is that the largest risk factor for COVID getting into a nursing home is that nursing home being in an area of high community prevalence. So if the nursing home is located in a county where COVID is in the county and there's high prevalence in the county, just because of staff, admissions coming in and out of the nursing home, that there's a significant risk of COVID coming into the nursing home.

Dr. Betsy White (11:16):

And additionally, we find that larger buildings are also at higher risk just because they tend to, again, they have more foot traffic and you have staff coming in and out and unknowingly, not to any fault of their own, introducing the virus into the building. We are not finding significant relationships with the ways that we typically measure quality in nursing homes historically. So we're not finding consistent relationships between either the five-star rating or if a nursing home had passed infection control deficiency citations. That does not seem to be correlated with either the probability of an outbreak or the severity of the outbreak.

Dr. Betsy White (12:00):

And that has important implications for policy because others have spoken about this quite eloquently, but if you think that the problem is a quality issue where you have poor quality facilities, or the ones that, that get COVID, then you invest your resources in enforcement and surveys and fines and deficiencies. But what we're really finding is that this is a system-wide problem and nursing homes that are in high-prevalent areas are at high risk for getting it. And because of that, these nursing homes, they need resources.

Dr. Betsy White (12:35):

And so the nursing homes that are at higher risk for getting it, they need federal and state help to support their staffing, to get adequate PPE, get adequate testing capacity. This is really, it's a system-wide problem, and there needs to be federal and state support to bring resources to these buildings rather than diverting resources solely into surveys and enforcement.

Rosa Baier (13:02):

And focusing on some of the big picture applications in terms of policy, application of testing and other policies at the high level, some of our audience questions were also focused on what the nursing home providers can do within their facilities. So for example, the additional or emerging evidence on other atypical presentations in older adults, do we have information on the prevalence of decreased appetite, altered taste and smell, altered mental status? Some of these findings might have practical implications for those who are in direct contact with residents and can be monitoring them for emerging signs of infection. Do you have any thoughts based on your ongoing research?

Dr. Betsy White (13:50):

So we did, we are looking at different symptom presentations, and we are finding a fairly high prevalence of these atypical symptoms. So the data that I presented during the Grand Rounds, about 16% of nursing home residents are presenting initially with GI symptoms. So nausea, vomiting, diarrhea.

About another 16% I think it was are presenting with just nonspecific malaise. So the constellation of symptoms that we're finding to have the highest predictive value are cough, fever, and hypoxia, but a lot of these nursing home residents are presenting atypically. So it can be challenging to, who you have to have a higher index of suspicion for. We're finding that people that are presenting with like your run-of-the-mill cold symptoms, runny nose, sore throat, nasal congestion, those are much less likely to be associated with COVID. So those individuals, you can probably have a lower index of suspicion for, but still, there's just a lot of atypical presentation in this population.

Rosa Baier (14:59):

Dr. Rudolph, I know you're part of other research efforts focused on coronavirus in the community living centers. Do any of the other efforts that you're involved with touch on the atypical presentations and the use of technology, for example, as you've done with temperature monitoring?

Dr. Jim Rudolph (15:17):

So I think there's some really unique things going on. With temperature monitoring, in an electronic system, you're able to manipulate that data to display it in new ways, again, where for the first time measuring temperature daily in nursing home residents, and that provides some opportunities. A system that can display it in a way that presents it to people so that it becomes an infection control backbone and not just in the temperature domain, but in as Dr. White mentioned looking at oximetry and looking at pulse rates and other symptoms can really hone in on that population.

Dr. Jim Rudolph (16:02):

The other part is thinking about this from a system's level and infection control is your most important weapon in the fight against COVID and so early recognition of those atypical symptoms, as well as the typical symptoms and cohorting or infection control practices around those residents will help mitigate the spread of the disease throughout the facility and even amongst a neighborhood or ward. So I think there's real opportunity to use data in a pragmatic way. Part of it is manipulation of that data, part of it is presentation of that data, and then ultimately use of that data to alter the clinical care that we deliver.

Rosa Baier (16:50):

One of the challenging questions that we received from the audience is how providers can use these findings, these results to begin to think about balancing individual's risk against the need for socialization. And specifically someone asked about reopening communal dining. Do you have any thoughts based on your findings and how clinicians can incorporate them into practice to both prevent infection, but also enable residents to enjoy daily activities?

Dr. Jim Rudolph (17:22):

COVID has presented us with some really unique challenges, clinicians, and we're just in the beginning phases of this, as we anticipate not only a second wave, but potentially a third wave continuing throughout the winter season commingled with the flu season as well. So there's going to be a real opportunity to use our training as clinicians to really understand not only the presentation of this, but how to manage this disease going forward. And so I think we have to remember that this is a long-term challenge that we're facing and not let our desire for short-term gains influence those decisions.

Dr. Jim Rudolph (18:08):

So I think that I would opt for more rigorous infection control with a goal of preventing the spread of COVID throughout a facility. And some of Dr White's point prevalence data identified once COVID is in a facility, it's more likely that other residents in that facility will develop COVID. So while we hope to keep it out, once we do have it within a facility containing it within that facility becomes really important for the health and safety of other residents. So I think there's a huge opportunity here to use our clinical skills to identify some of those unique symptoms to use the testing data we have available and the infection control practices that we practice so much to really help keep a hold on this during the entire duration of this pandemic.

Dr. Betsy White (19:10):

Just to build off of Dr. Rudolph's point there, testing capacity is absolutely going to have to improve in these nursing homes in order to open them up and be able to bring visitors in safely. And we're going to need the data to be able to do that strategically. So obviously, COVID is something that's going to be with us for the long term. It's going to be with us for many months. And it's something that we're going to have to adapt to. And like Dr Rudolph said, we're going to need to have rigorous infection control procedures. And we're also going to have to have the ability to test residents and staff on a regular basis, and to prioritize testing in facilities that have cases and in facilities that have outbreaks. It may be that you can isolate. Even within a building, isolation and cohorting may vary, but testing capacity is absolutely going to have to be improved in order to start opening up nursing homes.

Rosa Baier (20:18):

So far, we focused on the implications of your findings for policy and practice, but you both spoke as part of a panel on pragmatic research and your circumstance during the pandemic and the IMPACT Collaboratory as a whole focuses on creating a pipeline for an increased knowledge around embedded pragmatic clinical trials. Let's talk a little about your studies from the perspective of pragmatic research. Dr. White, in IMPACT there's a big focus on learning health systems that has such systems engage with researchers. In your talk you described collaboration between Brown and Genesis HealthCare, a multi-state nursing home corporation. How and why did Brown and Genesis form this partnership and are there key aspects to making it mutually beneficial?

Dr. Betsy White (21:01):

Yes. So this is the collaboration to, as I mentioned before, COVID is a very large, complex and rapidly evolving problem in nursing homes. And there are many clinical operational and epidemiological questions that we need to answer and we need to be able to do that very quickly to help inform our policies and our practices to keep staff and residents safe. So in order to do that, you need the data. And typically when we study nursing homes, we tend to use data sources like Medicare claims or other administrative data. And there's a significant lag time with those data sources. So the real advantage of being able to partner with Genesis is that we're able to look at their clinical data in almost real time. So the data that we're looking at today is from the last week and that there's significant value in that.

Dr. Betsy White (22:00):

The other thing is that we don't have good public data right now on the impact of COVID in nursing homes. Since the pandemic began, individual states have been collecting data, but not all the states have been reporting that data publicly. The states that are reporting, do it in different ways, they report different levels or amounts of data, or they report it in different formats. So it's very hard to compare across states. Just recently the National Health and Safety Network released the first national data, but

there's only about 80% of facilities are available in that data and there's still a lot of errors in that data. It's going to take several weeks before that becomes more usable.

Dr. Betsy White (22:43):

So we have this real advantage in the interim working with Genesis, which again is across 25 states. They have about 350 nursing homes that we have the level of data and detail where we can start to understand, for example, risk factors for mortality within this patient population. That data, otherwise it's just not there. So we have a weekly meeting with the Genesis team and we're just constantly sharing back and forth what we're finding. They're helping us to interpret their data. And it's been a very productive, important collaboration.

Rosa Baier (23:20):

And my understanding is that the Genesis HealthCare team actually approached the Center for Gerontology and Healthcare Research about establishing this collaboration in part, because of the expertise that you and your team have using those big data that you described.

Dr. Betsy White (23:34):

Yes. And they're fully vested in this. And I mean, because they want to be able to answer these questions as well.

Rosa Baier (23:42):

Dr. Rudolph, your perspective is a little different since you're a geriatrician who practices in the VA system and your research centers on VA nursing homes, community living centers. How did being part of the health system inform how you identified and approached this study?

Dr. Jim Rudolph (23:56):

Being part of a healthcare system in a global pandemic has major advantages. First, our community living centers are tied to our hospital system on the same electronic medical record. And we use it across all 150 medical centers within the VA. So having that type of technological infrastructure really allows information to flow smoothly. Next, we have access to experts in infectious disease and in pandemic control and all sorts of specialties, where if we were an individual nursing facility in the community, we may not have that access to expertise.

Dr. Jim Rudolph (24:38):

The other major part is that we have a supply chain that helps stock our facilities with supplies of all types. That includes PPE. So we have a stable supply of PPE. While our burn rate for the PPE has gone up during COVID, we've always had access to PPE. The other part is that the laboratory testing issues. Well, an individual nursing center may not have a laboratory onsite, most of our VA medical centers have a testing laboratory for COVID onsite. And that allows us to prioritize our testing and make sure that the testing gets done on the residents and the staff who need to be tested.

Rosa Baier (25:23):

This is my last question. What is one thing that you want today's audience to walk away with? Whether it's knowledge and action people can take or something else.

Dr. Jim Rudolph (25:33):

My one thing would be don't wait for certain criteria before you implement rigorous infection control. We need to recognize that the older population is unique, that we as clinicians understand that small changes in behavior or atypical symptoms as Dr. White was talking about really may represent the manifestation of this disease. And so, because the disease is so, so deadly in our frail older population, we need to take action earlier rather than later. And so use your clinical instincts. Don't wait for threshold of criteria before taking that action.

Dr. Betsy White (26:19):

And I think my key point would just be to not underestimate the importance of asymptomatic spread in this population. And just to reiterate that nursing homes need resources right now, they need state and federal help to support PPE, to support staffing and to support testing capacity. Just given that we know that so many of the cases are asymptomatic or presymptomatic, and we just know that this can spread very quickly through a nursing home in that way.

Rosa Baier (26:53):

Thank you both so much for taking the time to reconvene today, to discuss your research. It was a pleasure speaking with you.

Jill Harrison (26:58):

Thank you for listening to today's IMPACT Collaboratory Grand Rounds podcast. Please be on the lookout for our next Grand Rounds and podcast next month.