

# ADVANCES IN GERIATRICS

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## Investigating the Burden of RSV in Older Adults

It's not every day that a pediatrician and a geriatrician come together to study an illness that impacts both the young and elderly. But just such a collaboration is underway at NewYork-Presbyterian/Columbia University Irving Medical Center, where **Evelyn C. Granieri, MD, MPH, MSED**, Chief of Geriatric Medicine and Aging, and **Lisa Saiman, MD, MPH**, Professor of Pediatrics and Hospital Epidemiologist at NewYork-Presbyterian Morgan Stanley Children's Hospital, are studying the clinical impact of respiratory syncytial virus (RSV), a common respiratory virus that can be especially serious in both populations.

In 2017, Dr. Saiman received a grant from Merck to investigate laboratory-confirmed RSV in hospitalized adults to evaluate both the clinical implications and change in functional status associated with the virus. "What is so novel about this project is having a physician investigator in pediatrics working on something that's so important to a geriatric cohort. Dr. Saiman has the knowledge and experience to lead this research effort," says Dr. Granieri.



*Dr. Evelyn C. Granieri*

"I've been involved in clinical research for over 25 years," says Dr. Saiman, "and have been interested in respiratory viruses throughout a great deal of my career."

*(continued on page 2)*

## Aging with HIV: Seeking a Suitable Model of Care

When **Eugenia L. Siegler, MD**, pursued her residency in internal medicine at Bellevue Hospital in the 1980s, she cared for a number of patients with HIV. "After that I went on to specialize in geriatrics and over the years, I may have encountered a patient or two with HIV, but

I was not focused on HIV care," says Dr. Siegler, Medical Director of Geriatrics Inpatient Services, Division of Geriatrics and Palliative Medicine at NewYork-Presbyterian/Weill Cornell Medical Center.

That was until **Susan Ball, MD**, Assistant Director of the Glenn Bernbaum Unit, Center for Special Studies at Weill Cornell, presented at a geriatric grand rounds on the increasing number of older adults who are living with HIV/AIDS. According to the Centers for Disease Control and Prevention, in 2015 an estimated 47 percent of Americans living with diagnosed HIV were age 50 and older. As of June 2017, 23 percent of people living with HIV in New York City were 60 or older, and that

*(continued on page 3)*

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— Dr. Eugenia L. Siegler



## Investigating the Burden of RSV in Older Adults *(continued from page 1)*

RSV occurs each year in the late fall and early winter. Most otherwise healthy individuals develop mild, cold-like symptoms. However, RSV is the most common cause of bronchiolitis and a common cause of pneumonia in children less than one year of age in the U.S. There is no vaccine and no anti-viral medications for RSV. While once considered primarily a pediatric concern, the virus is now understood to be a cause of significant morbidity and mortality in older adults and can cause exacerbations of underlying cardiac and pulmonary disease. “We’ve known that RSV occurs very commonly in children; in fact, nearly everyone has had an RSV infection by age 3 years. However, until recently, the impact of RSV wasn’t fully appreciated in adults,” says Dr. Saiman.

According to the Centers for Disease Control and Prevention, RSV circulates along with many other winter respiratory viruses, most notably seasonal influenza, and is estimated to cause 177,000 hospitalizations and 14,000 annual deaths in adults age 65 years and older in the U.S.

While the clinical symptoms of RSV are nonspecific and can overlap with other viral respiratory infections, as well as some bacterial infections, there are several laboratory tests available to confirm RSV infection. NewYork-Presbyterian Hospital uses the commercially available multiplex PCR (polymerase chain reaction) panel test, which seeks to detect specific sequences that are unique to 18 viruses, one of which is RSV, and three bacteria that cause respiratory tract infections. It is simple to perform as it only involves swabbing the inside of the nose.

“Until the advent of the multiplex PCR, we didn’t have the tools at our disposal to readily identify RSV in populations outside of young children,” says Dr. Saiman. “Thanks to this simple test, we can actively look for RSV when patients arrive in our emergency rooms. Unlike influenza, for which we know that year to year a certain proportion of people will get infected, infection with RSV is less well-understood because people have not been looking for it until quite recently.”

**“I want physicians to understand that RSV exists, it’s serious, and it can have significant repercussions. If the study raises their consciousness to screen patients who are having exacerbations of respiratory illness and to test for viruses through PCR, then I think we will have done some good.”**

— Dr. Evelyn C. Granieri

As an infectious disease specialist, Dr. Saiman says she is very focused on the precision of diagnosis. “It’s incredibly helpful for the emergency room providers to know which hospitalized patients have flu or RSV – as flu has a specific medication – and who need to be placed on specific kinds of precautions,” she says. “For RSV-infected individuals, hospital staff need to wear gowns and gloves to protect themselves, but also to protect their clothing because RSV is highly contagious and very hardy. It can live on environmental surfaces for two to six hours, and it can live on unwashed hands for up to an hour. In contrast, for



Angela E. Barrett and Dr. Lisa Saiman

influenza-infected individuals, hospital staff need to wear surgical masks to protect themselves from getting sick.”

### Impact on Functional Status

NewYork-Presbyterian/Columbia is collaborating on the RSV study with Drs. Edward Walsh, Anne Falsey, and Angela Branche in the Division of Infectious Diseases at the University of Rochester in Rochester, New York. “The clinicians at our sister study site in Rochester were among the first to appreciate that RSV had a very large burden in the older adult,” says Dr. Saiman. “Determining that burden will help inform the efforts to develop a vaccine. We really want to understand the number of people who have RSV infections and, importantly, in older adults, defined in this study as 60 years of age and older, what is the impact on their functional status. When people who are 60 years of age and older are hospitalized for any reason, they can lose some of their functional abilities related to activities of daily living – simple things like dressing, feeding, and grooming, as well as more complicated tasks such as managing transportation, banking, and shopping. We were interested in learning if functional status is impaired secondary to an RSV-related hospitalization, and if so, how long does functional status impairment last?” The study team is following participants for six months.

“This was the first study ever to look at the loss of function status due to RSV,” continues Dr. Saiman. “Loss of functional status has been looked at before for influenza in older adults, but not for a prolonged period of time.”

Angela E. Barrett serves as the project coordinator for the Columbia site, involved in recruiting patients, administering the surveys to assess functional status, and monitoring their function status over time. The surveys asked how a patient was functioning two weeks prior to hospitalization and functioning at discharge. “Angela then followed up with patients at two months, four months, and six months after discharge to see how they were doing,” adds Dr. Saiman.

*(continued on page 4)*

## Aging with HIV: Seeking a Suitable Model of Care (continued from page 1)



Dr. Eugenia L. Siegler

percentage is increasing. Although this aging demographic represents a remarkable achievement in HIV care, older people living with HIV are at higher risk than their uninfected counterparts for multimorbidity, cognitive impairment, poly-pharmacy, depression, loneliness, frailty, and other medical and social problems.

“Dr. Ball’s talk shocked me. These individuals have seen accentuated aging with more comorbidities at a younger than expected age, as well as a heavier burden of psychiatric illness. Their social networks are fragile and often unable to provide adequate support. It got me thinking that we needed to do something,” says Dr. Siegler, who with funding from the Fan Fox and Leslie R. Samuels Foundation, began collaborating with the Center for Special Studies (CSS), one of the first programs in New York to be recognized as a Designated AIDS Center by the Department of Health.

Initially, Dr. Siegler and Weill Cornell colleague **Harjot K. Singh, MD**, along with collaborators from ACRIA, a community-based HIV research and education organization, arranged focus groups of patients and providers at CSS to determine the needs of older adults with HIV/AIDS and how the involvement of geriatrics might be helpful.

“One thing that became clear was that patients wanted to stay with their primary care physicians, many of whom have been with them for 20 years,” says Dr. Siegler. “And their physicians did not want to give up their patients, either. For many patients, HIV is no longer their main problem. They live with HIV, but it is all of their other medical issues – heart, kidney, and lung disease – that are the reasons for their medical care.” Colleagues **Megan Shen, PhD**, and Assistant Research Coordinator **Chelsie Burchett** are continuing to analyze the focus group data to help determine what kind of programming would best meet the needs of people aging with HIV.

Dr. Siegler and Weill Cornell geriatrician **Tessa M. del Carmen, MD**, who is especially interested in the palliative needs of people with HIV, now serve as on-site geriatric consultants at the CSS, as well as provide education to staff and providers on aging. “HIV is a treatable, chronic illness, but it’s not invisible. Even when the virus is undetectable, it affects the body in subtle but important ways,” says Dr. Siegler. “There is a broad range of presentations among the older population with HIV. Some

people who nearly died have survived, but their bodies have suffered the consequences of this infection and its treatment. There are others whose HIV has not had as marked an impact physiologically, but nevertheless, they still live with it and they still have to think about it. And now they are also dealing with the problems related to aging.”

“Medical care is just one small part of what is important to these individuals as they age,” adds Dr. Siegler. “There is still stigma attached to having HIV. Even as medications become very effective and people are living long and healthy lives, many are still afraid to disclose their illness. Social isolation is also one of the problems we see, so we have added a social component to our program.”

Dr. Siegler continues to collaborate with ACRIA in their current study of the psychosocial impact of aging with HIV, ROAH 2.0 (Research on Aging with HIV), and with **Marshall Glesby, MD, PhD**, from the Division of Infectious Diseases, the Principal Investigator of a study examining the impact of psychosocial and clinical variables on frailty and markers of inflammation.

### Developing a Model of Integrated Care

Dr. Siegler and her colleagues recently presented varying views surrounding the delivery of care for this older, diverse population in an article published in the October 2018 issue of the *Journal of the International AIDS Society*.

“Providers are examining different ways to incorporate geriatric assessment into their clinical programs,” says Dr. Siegler. “What we in the field are trying to figure out is how the geriatric world and the HIV world intersect. Models of care for the elderly have been tested, but it’s not clear that a person who is 60 with HIV is going to need the same set of services or care that’s constructed for a woman in her 80s. Do you just combine the aging services network and the HIV services network and have people use what they need from each, or do you ask for programs to develop HIV-specific services or programs that modify the mix? What is clear is that HIV care must be global and inclusive, embracing geriatric and palliative care so that older people can take advantage of the many years that successful antiretroviral therapy has enabled them to live.”

Dr. Siegler notes that many providers who specialized in HIV care are finding that they are doing more primary care today. “It may be that in the next 10 or 20 years, primary care physicians and geriatricians will manage the primary care, and the HIV specialists will manage the medications. There are many aspects of care that are quite complex, such as coinfections with hepatitis C and complicated sexually transmitted infections that are beyond the reach of those of us in primary care, so we need infectious disease specialists to call on,” adds Dr. Siegler. “It will have to be settled out, but I think there will be opportunities for a variety of practice models in the future.”

#### Reference Article

Siegler EL, Burchett CO, Glesby MJ. Older people with HIV are an essential part of the continuum of HIV care. *Journal of the International AIDS Society*. 2018 Oct;21(10):e25188.

#### For More Information

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**Investigating the Burden of RSV in Older Adults** *(continued from page 2)*

The first year of the RSV study was completed in April 2018, with preliminary results presented in a poster session during ID Week this past October. The study included adults 18 years or older who were hospitalized between October 2017 and April 2018 for at least 24 hours and confirmed to have RSV. The subjects resided in two catchment areas: Rochester, New York, and New York City. Eighty-six participants 60 years or older underwent a functional status evaluation. Of the nearly 3,500 adults hospitalized with an acute respiratory infection, 310 were positive for RSV, 216 of these were 60 or older, and 86 were enrolled in the functional status assessment.

The preliminary findings of the study concluded that “older adults hospitalized with RSV infection demonstrate acute functional decline, which may result in prolonged loss of function in some patients.” The mean Activities of Daily Living (ADL) score was significantly decreased at discharge, resulting in 19 percent of subjects requiring a higher level care after hospitalization. And at six months, mean ADL scores remained significantly decreased from baseline suggesting prolonged and sustained loss of function in 37 percent of participants.

“Older adults, and especially those who are hospitalized with RSV, tend to be a unique and growing population of people who have significant comorbidities,” says Dr. Granieri. “I think that many physicians don’t understand that the functional status of older people who are hospitalized actually declines both as a product of hospitalization because they’re not active while in the hospital, but also as a consequence of RSV and other viral infections. Specifically, we do notice anecdotally with RSV that people tend to not do so well with regard to either maintaining function afterwards or recouping their functional status as they’re

recovering from RSV. You don’t snap back. The study showed us more precisely how much that ‘snap back possibility’ happens or doesn’t happen.”

“I think we’re also starting to appreciate that there is a relatively high rate of rehospitalization within a month after discharge,” says Dr. Saiman.

In addition to a focus on functional status, another substudy is looking at people who have a worsening of their cardiac or pulmonary function. “These are individuals with COPD, congestive heart failure, and asthma. We want to see if those exacerbations are kicked off by RSV,” says Dr. Saiman.

“I want physicians to understand that RSV exists, it’s serious, and it can have significant repercussions,” adds Dr. Granieri. “If this study raises their consciousness to screen patients who are having exacerbations of respiratory illness and prompts them to test for viruses through PCR, then I think we will have done some good. Additionally, we hope our findings will help us to understand the consequences of RSV and encourage efforts to find a vaccine that would be effective.”

**Reference**

Branche A, Granieri E, Walsh E, Finelli L, Falsey A, Greendyke WG, Barrett AE, Vargas CY, Saiman L. *Change in Functional Status Associated with Respiratory Syncytial Virus Infection in Hospitalized Older Adults.* Poster Abstract Session. ID Week, October 4, 2018.

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