



There is probably no month in the year that is so jam-packed with events and emotions as the month of June. This year is especially poignant, as the world tries to get back on track after almost 18 months of COVID-19. June is the month of beginnings and endings, “hellos” and “good-byes”, and for many, the start of a new chapter in life.

For all of us who have the pleasure and privilege of working with medical students, residents and fellows, there is a sadness to saying “good-bye” to individuals whom you have come to know so well. But, there is also the heart-felt happiness of seeing these individuals move on to the next chapters in their lives: residencies, fellowships, new positions, marriages, relocations, new homes...so much change! From all of us in GME Research and the IRB, we send our best wishes to the trainees who are leaving Ascension St. John. We want you to know that we will always be here for you...so if you have a stats question and need a quick consult, you know someone you can email!

June is also a time for greetings! We sincerely welcome all of the new medical students, residents and fellows who are coming to Ascension St. John to continue on their educational path. We are excited to have the opportunity to get to know you, to work with you and to build new relationships.

Best wishes for great success and happiness to our graduates. We will miss you!

A warm welcome to all of our new trainees. We can't wait to get to know you!

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Fast Stats

Measures of Association are values that show us the direction and strength of the association between a risk factor and a disease. There are several common measures of association that arise from different study designs.

Odds Ratio (OR): The Odds Ratio can be computed from any study design. It is the ratio of the odds of a case patient being exposed to a factor divided by the odds of a control patient being exposed. The OR is a good estimator of the relative risk when the disease is rare. The null value is 1.

Relative Risk (RR): The relative risk is the ratio of the probability of disease in the exposed versus the probability in those unexposed to a risk factor. It can only be computed from prospective studies. This measure shows us the strength of the association between a risk factor and a disease. The null value is 1.

Risk Difference (RD) or Absolute Risk Reduction

(ARR): This measure is simply the difference in the probability of disease in the exposed and the probability in the unexposed. On a population level, this measure helps us to know how much disease can be prevented if the risk is removed. The null value is 0.

Number Needed to Treat (NNT): This value is 100/the ARR when the ARR is expressed as a percentage. This value tells us the number of patients we would need to treat to prevent one case of disease.

Hazards Ratio (HR): The Hazards Ratio is computed from survival data. The probability of events occurring at any point in time is called a Hazard for that group and the weighted RR during the entire study duration is known as the Hazards Ratio. The null value is 1.

Which measure do I use?

- The RR, RD and HR can only be computed from prospective studies.
- The HR comes from studies that have time as a component in the analysis.
- The OR can be computed from any study type, however, it will often overestimate the RR when the disease is rare.

Congratulations to our Residents!

Ascension St. John Hospital's Resident Research Day 2021

Tied for 1st place:

Mary Kasu, MD: *Sleep Disturbances Among Former Term Neonates Exposed to In Utero Tetrahydrocannabinol (THC) at Preschool Age.* Pediatrics.

Claudia Villatoro-Santos, MD: *Tocilizumab: A Retrospective Multi-Center Cohort Study of Critically Ill Patients with COVID-19.* Internal Medicine.

Tied for 2nd Place:

Jacob Vander Weide, MD: *Implementation of a Pediatric Asthma Pathway in the ED.* Emergency Medicine.

Reynald John, MD: *Attitudes Toward Participation in COVID-19 Vaccination Clinical Trials and COVID-19 Vaccination in Detroit, MI during the Pandemic.* Internal Medicine.

Tied for 3rd Place:

John Rotondo, MD: *Acceptance of HIV Testing in the Pediatric Emergency Department.* Emergency Medicine.

Dipti Kamath, MD: *A Retrospective Study to Evaluate the Predictive Value of an Early-Onset Sepsis Risk Calculator in Neonates Exposed to Maternal Chorioamnionitis.* Pediatrics.

Honorable Mention:

Lindsey Nichols, MD: *A Comparison of COVID 19 vs Influenza During the Pandemic: Can We Distinguish COVID-19 from Flu?* Internal Medicine.

Sara Samaan, MD: *Detection of Atrial Fibrillation by Implantable Loop Recorders Following Cryptogenic Stroke: A Retrospective Study of Predictive Factors and Outcomes.* Internal Medicine.

American College of Physicians Michigan Chapter Meeting, May 2021

Claudia Villatoro-Santos, MD, won 1st Place in the Oral Research competition for: *Tocilizumab: A Retrospective Multi-Center Cohort Study of Critically Ill Patients with COVID-19*

Lindsey Nichols, MD, won 2nd Place in the Oral Research Competition for: *A Case Control Study of COVID 19 vs Influenza During the Pandemic: Can We Distinguish COVID-19 from Flu?*

Wei Zhao, MD, won 1st Place in the Poster Research competition for: *Predicting QT Interval Prolongation in Patients Diagnosed with the 2019 Novel Coronavirus Infection*

Hussein Gharib, MD, won 3rd place for his Oral Clinical Vignette: *Cardiac Dysrhythmia From Hypermagnesemia Due to Treatment of Constipation*

43rd Annual SEMCME Research Forum

Reynald John, MD, from Internal Medicine won 3rd Place for his voice over presentation: *Attitudes Toward Participation in COVID-19 Vaccination Clinical Trials and COVID-19 Vaccination in Detroit, MI during the Pandemic*

Jacob VanderWeide, MD, from Emergency Medicine, won 6th Place for his voice over presentation: *Implementation of a Pediatric Asthma Pathway in the ED*

Mary Kasu, MD, from Pediatrics, won 2nd Place for her oral presentation: *Sleep Disturbances Among Former Term Neonates Exposed to In Utero Tetrahydro-cannbinol (THC) at Preschool Age*

5th Annual SEMCME Pediatric Research Forum

Mary Kasu, MD, from Pediatrics, tied for First Place for her oral presentation: *Sleep Disturbances Among Former Term Neonates Exposed to In Utero Tetrahydro-cannbinol (THC) at Preschool Age*

Recent Publications

- ◆ Akagi EF, Sharma M, Johnson LB, Szpunar SM, Riederer K, Saravolatz LD, Bhargava A. Clinical features and risk factors for community-onset bloodstream infections among coronavirus disease 2019 (COVID-19) patients. Infect Control Hosp Epidemiol. 2021 Mar 12:1-3.
- ◆ Bhargava A, Fukushima EA, Levine M, Zhao W, Tanveer F, Szpunar SM, Saravolatz L. Predictors for Severe COVID-19 Infection. Clin Infect Dis. 2020 Nov 5;71(8):1962-1968.
- ◆ Bhargava A, Sharma M, Akagi E, Szpunar SM, Saravolatz L. Predictors for in-hospital mortality from coronavirus disease 2019 (COVID-19) infection among adults aged 18-65 years. Infect Control Hosp Epidemiol. 2021 Jun;42(6):772-775.
- ◆ Bhargava A, Sharma M, Riederer K, Fukushima EA, Szpunar SM, Saravolatz L. Risk Factors for In-hospital Mortality from COVID-19 Infection among Black Patients - An Urban Center Experience. Clin Infect Dis. 2020 Sep 28:ciaa1468.
- ◆ Bhargava A, Szpunar SM, Sharma M, Fukushima EA, Hoshi S, Levine M, Gandhi N, Zhao W, Michael S, Tanveer F, Youssef D, Coyle M, Leonard J, Saravolatz L. Clinical Features and Risk Factors for In-Hospital Mortality From COVID-19 Infection at a Tertiary Care Medical Center, at the Onset of the US COVID-19 Pandemic. J Intensive Care Med. 2021 Jun;36(6):711-718.
- ◆ Fukushima EFA, Nasser A, Bhargava A, Moudgil S. Post-infectious focal encephalitis due to COVID-19. Germs. 2021 Mar 15;11(1):111-115.
- ◆ Kaki A, Singh H, Cohen G, Schreiber T. A case report of a large intracardiac thrombus in a COVID-19 patient managed with percutaneous thrombectomy and right ventricular mechanical circulatory support. Eur Heart J Case Rep. 2020 Nov 5;4(6):1-5.
- ◆ Kanitra JJ, Power AD, Hayward RD, Haouilou JC, Edhayan E. Malfunctioning temporary hemodialysis catheters in patients with novel coronavirus disease 2019. J Vasc Surg. 2021 Jun;73(6):1881-1888.e3.
- ◆ Nichols LK, Maki SB, Szpunar SM, Bhargava A, Saravolatz LD. A comparison of coronavirus disease 2019 (COVID-19) versus influenza during the pandemic: Can we distinguish COVID-19 from flu? Infect Control Hosp Epidemiol. 2021 May 21:1-4.
- ◆ Zhao W, Gandhi N, Affas S, Szpunar S, Mesiha N, Saravolatz L. Predicting QT interval prolongation in patients diagnosed with the 2019 novel coronavirus infection. Ann Noninvasive Electrocardiol. 2021 May 7:e12853

Institutional Review Board Update

Please go to [IRBNet](https://www.ascensionstjohn.com/irbnet) to access the following updated forms.

- ◆ Designee Signature Form
- ◆ A3 - Department Head Signature
- ◆ Final CIRB Facilitated Review Form.



SEMCME Update

- ◆ No upcoming seminars are currently scheduled.
- ◆ For the list of winners from the 43rd Annual SEMCME Research Forum visit: <https://semcme.org/>

CME Update

- ◆ No upcoming seminars are currently scheduled.
- ◆ Contact Nancy DeRita for more information: Nancy.derita@ascension.org

History of Epidemiology

- ◆ Epidemiology is the study of the patterns, causes and effects of health and disease conditions in defined populations. It answer the questions: “Who gets sick?” and “Why?”
- ◆ Hippocrates (born in 460 B.C.), the Greek physician known as the “Father of Medicine”, is also considered to be the first epidemiologist.
- ◆ He is the first known person to examine the relationship between the incidence of disease and environmental conditions. He believed that sickness in the human body was caused by an imbalance of the four “humors” (air, fire, water and earth). The cure to sickness was to remove or add the humor(s) in question to balance the body.
- ◆ Hippocrates was also the first to distinguish between “epidemic” and “endemic”, separating diseases as those that are “visited upon” a population (epidemic) versus “reside within” a population (endemic).
- ◆ Early theories on the origin of disease suggested that it was primarily a fault of human luxury. But in the 16th century, Dr. Girolamo Fracastoro was the first to propose a theory of small, invisible, living particles that could cause disease. They were considered to be spread by air, multiply by themselves and be destroyed by fire. Anton Van Leeuwenhoek’s microscope (1675) provided visual evidence of living particles consistent with Fracastoro’s theory of disease.
- ◆ John Snow is considered the “Father of Modern Epidemiology”, famous for his search for causes of the 19th century cholera epidemics. He noticed that there were significantly higher death rates from cholera in the two areas supplied with water by the Southwark company. As a quick way to test this theory and potentially stop disease progression, he removed the handle from the Broad Street pump. He also used chlorine to clean the water. This event is considered to be the founding event of modern epidemiology.
- ◆ Today, the John Snow Pub is located near the original Broad Street pump, and is a popular gathering spot for epidemiologic meetings and tourists.



Mary P. English, Safe and Sound, 1971

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