NEW YORK STATE OF OPPORTUNITY. Department of Health

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Dear Colleagues:

I hope you're having a wonderful summer. It's amazing how fast the summer months fly by, and, before the weather gets colder, I hope you're finding time to enjoy—or avoid—the heat with family and friends.

While not quite "beach reading," two recent journal articles have highlighted important research on the spread of infections that I want to discuss this month. First, I will look at how New York State's first-in-the-nation protocols for hospitals to improve identification and treatment of sepsis have been reducing mortality rates. Then I will look at what we are learning about infections associated with persons who inject drugs (PWID) from a study in western New York.

Protocolized Sepsis Care and Mortality Rates. More than 750,000 Americans get sepsis each year, and over 200,000 die from it, making it the leading cause of death in hospitals and the eleventh leading cause of death overall in the United States. In New York State, 50,000 people are hospitalized with severe sepsis or septic shock each year, and almost a third of the adults who get sepsis die from it.

In 2013, Governor Cuomo spearheaded the adoption of Rory's Regulations, named after a 12-year-old who tragically died from sepsis contracted through an everyday cut on his arm. Since 2014, each New York State acute care hospital that provides care to patients with sepsis has been required to develop and implement evidence-informed sepsis protocols describing their approach to both early recognition and treatment of sepsis patients. New York State formulated a goal to reduce sepsis mortality by 50%.

An investigation published in the July 16 *Journal of the American Medical Association* evaluates the association between New York State sepsis regulations and the outcomes of adult patients hospitalized with sepsis. The investigators studied 1,012,410 hospitalized adults with sepsis in New York and control states, comparing hospitalizations for sepsis before New York's implementation of the sepsis regulations (January 1, 2011-March 31, 2013) with hospitalizations after (April 1, 2013-September 30, 2015). The study found that mandated protocolized sepsis care in New York State was associated with a significantly greater decline in risk-adjusted mortality in New York compared with a group of control states that did not implement mandated protocolized sepsis care. By the 10th quarter after implementation of the regulations, the adjusted absolute mortality was 3.2% lower than expected in New York State relative to the control states.

In addition, the sepsis 30-day in-hospital raw mortality is going down, from 30.2% at the beginning of the initiative to 22.9% in the third quarter of 2018, the most recently reported quarter. These data reflect the hard work that our hospitals and healthcare providers are doing to improve care, timely identification, and treatment of severe sepsis and septic shock since the inception of our sepsis initiative. As a result, New York State is making steady progress to reach our 50% reduction goal.

PWID Infections. Also in July, an important study was published in the Centers for Disease Control and Prevention's *Morbidity and Mortality Weekly Report* that is essential reading for clinicians caring for persons who inject drugs (PWID).

The study, conducted by staff from the New York State Emerging Infections Program (NYS EIP) and the CDC, and co-authored by Department staff, identifies a rising incidence of bacterial and fungal infections among PWID in western New York. NYS EIP and CDC investigators studied which bacterial and fungal pathogens were most responsible for infections in PWID, the extent to which opioids were used by PWID presenting with these infections, and the frequency with which medication for addiction treatment (MAT) was offered. Highlights from the findings include:

- *Staphylococcus aureus* was the most commonly identified pathogen.
- Skin and soft tissue infections, often at the injection site, were the most commonly identified infection type.
- Invasive infections (i.e.; endocarditis) were also identified, and many infections required prolonged hospital stays.
- While nearly all PWID studied were using opioids, only half of inpatients and only one in 13 of patients who were solely seen in the emergency department (ED) were offered MAT.

There are clear take-aways from these findings:

- First and foremost, we must follow CDC guidelines for opioid prescribing for chronic pain: opioids should not be withheld when appropriate, but when they are prescribed, it should always be done prudently with an awareness of the risks and benefits.
- We need to dramatically improve the low rate of MAT provision. Every patient with opioid use disorder (OUD) should be offered MAT as the standard of care. Initiating MAT could potentially improve retention in care for both the infection and substance abuse.
- Hospitalizations and ED visits for infections provide opportunities to link patients to treatment for OUD and prevent recurrent infections. We need to have candid, supportive conversations with patients about thoroughly cleaning their injection sites with soap and water or with an alcohol wipe prior to using a syringe and not to use contaminated equipment.
- We need to ensure that PWID have access to new, sterile syringes for every injection. The State's syringe exchange programs (SEPs) or a pharmacy participating in the Expanded Syringe Access Program (ESAP) can improve this access. Information about these programs is available here.

I urge you to revisit the best practices document that the Department and the Office of Alcoholism and Substance Abuse Services sent to all State healthcare providers in February. This document guides clinicians through incorporating buprenorphine therapy into patient care.

Many of the breakthroughs in modern medicine have been achieved by understanding and preventing infections. We must continue to be vigilant in order to provide optimal care to our patients. Protocols for early recognition of sepsis and caring for PWID infections recalibrate the norms so that best practices become routine—and lives are saved.

Thank you for supporting the Department's mission through your own best practices in clinical care and your commitment to always doing what is best for your patients. Best wishes and enjoy the rest of the summer.

Sincerely,

Howard A. Zucker, M.D., J.D.