

Acute Respiratory ILLNESS Surge: Information and Strategies

MICHAEL FROGEL, MD, FAAP

NYC Pediatric Disaster Coalition

November 3, 2022



The NYC Pediatric Disaster Coalition (PDC)

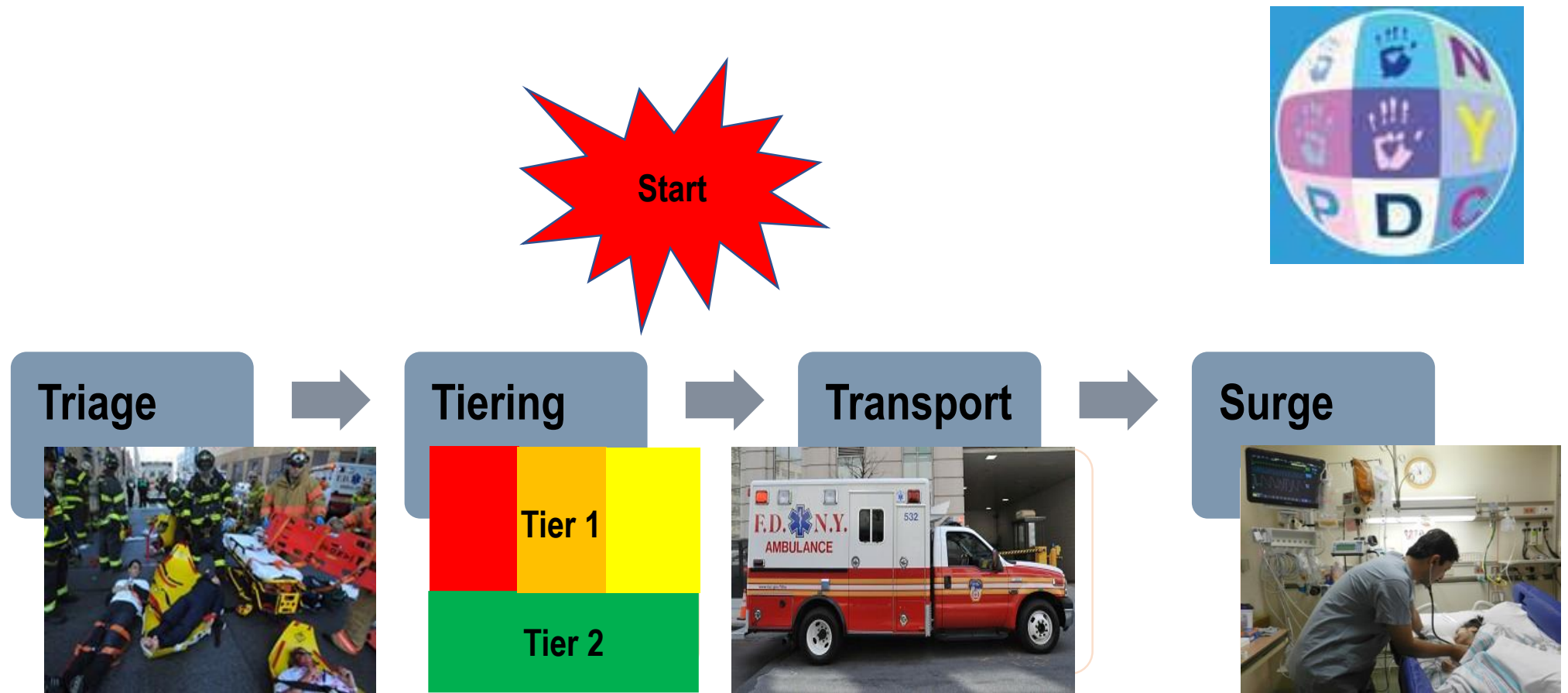


NYC PDC Coalition based Regional Planning and Response

- **Established in 2008 to prepare NYC for a catastrophic MCI involving children and their families**
- **Multidisciplinary Coalition Participation:** Pediatric disaster medicine experts, NYC hospitals, Outpatient/Urgent care facilities, FDNY/EMS, NYC Emergency Management, DOHMH, Pediatric Long Term Care Facilities, MRC, ASPR/TRACIE - working with an iterative process and literature review
- **Member of:** NYHCC Governing Board, Leadership Council, Borough Coalitions
- **Developed Citywide planning and response from:** incident scene triage, to primary transport, tiered pediatric receiving locations, secondary transport, surge and evacuation that are part of the Draft Citywide Pediatric Disaster Plan. This includes Pediatric Essential Elements of Information and pediatric transport asset utilization. This includes Hospital and Outpatient/ Community Disaster Planning
- **Developed a 24/7 Pediatric Intensive Care Response Team** for SME and Response, including patient prioritization, triage for transport
- **Developed the ASPR Pediatric Annex to NYC Disaster Plan**

NYC PDC Coalition based Regional Planning and Response

- **Creating site specific Guidelines and Template Plans for Surge and Evacuation of:** Pediatric PICUs, NICUs, Obstetric and Newborn Services, and Pediatric Long-Term Care, and Outpatient Urgent Care facilities
- **Creating self-use tools and conducting Functional, Tabletop and Full-Scale Exercises to operationalize plans**
- **Increasing pediatric critical care resources through Pediatric Fundamentals of Critical Care Support Courses**
- **Presenting at local, national and international conferences:** to promote pediatric disaster preparedness
- **Responding to real disasters:** H1N1, Superstorm Sandy, Ebola, Hattian earthquake, COVID-19 and creating lessons learned and revision of pediatric disaster planning/response



The Pediatric Disaster Coalition and their collaborative planning team created a comprehensive Pediatric Disaster Plan from the onset of the event and first response through pediatric intensive care surge.

Summary Pediatric Surge Planning Considerations

- Pre-event Planning is necessary for Surge, Evacuation, Shelter in Place and Supply Chain for Hospitals/ED/NICU/PICU/Ob/Newborn/General, Long Term Care Facilities and Community-Based Providers (OPD, Urgent Care etc.), Schools, Daycare
- Surge Capability includes Communications Space, Staff, Equipment and Supplies not just beds
- Plan from initial site incident through primary, secondary transport, surge and or evacuation
- For Transport: Tier Facilities and Utilize a Pediatric Care Response Team to prioritize patients
- Electronic shared situational awareness, Web based bed matching capabilities
- Utilize Pediatric EEIs from transferring (evacuating) to receiving surge facility
- Match patient transport needs to available resources (e.g. Train)

Summary Continued

- Consider Supply Chain including, Pharmaceuticals /Therapeutics, Equipment (Evacuation/vents)
- Provide SME experts for SME, Trauma/Burns, Poison control, patient prioritization (PIRT) etc.
- ESF8 real time participation (include above SME representation)
- ESF6, ESF7, interaction, Non-medical impacts, Food, Shelter, Clothing
- Mental Health Response Hospital/Community Providers/School: Screen/Refer (e.g.PsyStart), Treatment
- Education
- Training e.g. Pediatric NICU Evacuation
- Health Care Disparities
- Exercises/ Real World Events/Lessons Learned-Restart Planning Cycle

Supply Chain Considerations

- **Pharmaceuticals /Therapeutics**

- Immediate vs. delayed availability based on HVA
 - Countermeasures (e.g.) IVIG for MISC

- **Equipment**

- Evacuation: Vertical/Horizontal, NICU, PICU, OB/Newborn
- Respiratory: Oxygen, BiPAP, CPAP, Ventilators
- Blood Supply

- **Non-Medical**

- Food
- Clothing
- Shelter

Pediatric Disaster Mental Health Considerations

- Mental Health Response Hospital/Community Providers/School
- Immediate vs. Long Term Response
- Psychological First Aid
- Screen (Scene, shelters and transfer facilities, Primary Care Providers, Schools)
- Refer (e.g. PsyStart)
- Treatment: Short vs Long Term

Education and Training

- **Education**
 - PALS, APLS, Disaster
- **Training e.g.**
 - Expand PICU capabilities force multiplication
PFCCS Course, Crosstrain staff
Pediatric NICU Evacuation

Health Care Disparities Considerations

- Pediatrics: 25% of Population and most vulnerable with special needs during disasters
- Poverty
- Lack of Access or Functional Capability
- Long Term Care Facilities
- Racial, Ethnic
- Language Barriers
- Lack of Healthcare Information
- Relationships

Exercise Considerations

- Exercises(Integrate pediatrics into all exercises)
 - Tabletop
 - Functional (targeted)
 - Full Scale
 - Real World Events
- Include Health Care Disparities in Scenarios
- After Action Reports
- Lessons Learned
- Restart Planning Cycle

Planning is a Continuous Process

Consider Resiliency Building in Process



Exercise Description

Description: This exercise was a functional exercise (virtual) planned for a maximum of six hours for exercise play and Hot Wash activity. The exercise included 28 hospitals that care for pediatric patients in New York City and the following agencies; New York Fire Department (FDNY), New York City Emergency Management (NYCEM), the New York City Department of Health and Mental Hygiene (DOHMH), New York City Medical Reserve Corps (MRC) and the Pediatric Intensivist Response Team (PIRT). The exercise was designed to prepare New York City for a catastrophic pediatric event. The scope included hospital surge, communications, activation of the NYC Pediatric Disaster Plan and secondary transport.

Exercise Scenario

Scenario: It is a Thursday morning, approximately 8AM, with spring like weather conditions. An explosion of unknown origin occurs on a school bus at a nearby school. Patients begin to arrive to your hospital that have been self-evacuated. You learn from FDNY that several ambulances are headed your way with patients of various acuity levels. Similar incidents have taken place throughout New York City.



28 Hospital Exercise Video

[https://youtu.be/1g1bGj- Rb4](https://youtu.be/1g1bGj-Rb4)

Key findings from 28 Hospital Surge Exercise

Surge Beds/Capacity/Capability

- Added 1105 Surge Beds (baseline pediatric inpatient unit beds 1039) – double capacity
- Added 254 PICU Surge Beds (baseline 224 beds) – more than double capacity
- 304 ED Critical Care Surge Beds
- 312 ED Non-Critical Care Surge Beds
- 203 OR Surge beds
- 268 Adult Medical ICU Surge Beds
- 120 Additional Adult Surgical ICU Surge Beds
- 342 Pediatric Ventilator capable surge beds
- NICU total surge beds available after rapid patient discharge 247

Key Findings from 28 Hospital Pediatric Surge Exercise

Communications:

- Over 70% of the participating hospitals utilized phone calls, emails, text messaging, and face-to-face discussions to communicate situational awareness
- Almost all hospitals were able to communicate with staff and to contact them about coming in during the surge event

Supplies:

- Over half (54%) of participating hospitals reported having gaps in their pediatric supplies during the exercise due to the influx of critical patients
- 6 hospitals reported not having a burn cart to deploy during a disaster

Key Findings from MSEL Question Responses (Cont.)

Staffing:

- Some hospitals had difficulty providing pediatric subspecialty services such as, Neurosurgery, Ear Nose and Throat (ENT), Orthopedics, Plastics, Vascular Surgery and Trauma Surgery
- 100% of Hospitals created Mental Health Response Teams for patients and Staff

Transfer:

- All hospitals were able to identify patients requiring secondary transport and to provide information on the transport form
- Only 39% of participating hospitals identified appropriate staff to accompany patients during FDNY secondary transport
- The Fire Department was able to send the Pediatric Intensive Care Review Team a list of patient's for secondary transport and subsequently receive the PIRT's triage and prioritization patient list

Key Findings from MSEL Question Responses (Cont.)

Patient Tracking:

- 93% of hospitals were able to track patients during the event
- 70% of the participating hospitals utilized paper to track and register patients, approximately 50% also used electronic methods

Surge: Mental Health/Risk Communications

- 100% of hospitals established Family Information Service Centers for Reunification
- 100% of Hospitals created Mental Health Response Teams for patients and Staff
- 100% of Hospitals established an area for press briefings and a designated Public Information Officer

Lessons Learned

- Working directly with hospitals to create and implement pediatric specific surge/evacuation plans as part of overall preparedness improved surge and secondary transport capabilities.
- Conducting multiple group and individual exercise planning meetings yielded many valuable changes in hospital plans even before the exercise took place.
- Assessing the availability of sufficient pediatric subspecialty and intensive care staff for a surge of critically ill pediatric patients is necessary for good outcomes.
- Adult staff and surge capabilities should be incorporated into the pediatric surge response, especially at Tier-2 hospitals.
- Disaster mental health issues should be addressed for children, families and hospital staff with the provision of adequate staff and appropriate space.
- A Family Reunification and Information Service Center (FISC) should be part of Surge planning.

Lessons Learned (Cont.)

- Preparing sufficient onsite pediatric surge equipment and supplies is essential especially:
 - Ventilators
 - Blood/Blood Products
 - Burn Supplies
- There is a need for “babysitters” to care for pediatric patients throughout the hospital process thereby freeing clinical staff to participate in patient care.
- Site specific areas should be pre-designated and staffed for various surge tasks.
- Begin triaging patients for secondary transport early during a surge event.
- Utilize Ambulatory Care Resources for space staff staff and integrate into hospital plans.
- It is important to have sufficient personnel to assist the controller/incident commander in data collection, communications and reporting during exercises and real time events.
- Situational awareness and communication with staff and agencies is essential.

Response:

Emergency Management Considerations

- ESF8 real time participation (include above SME representation as needed)
- ESF6, ESF7, interaction, Non-medical impacts, Food, Shelter, Clothing

Resiliency Building

- Essential pre-event to improve outcomes from disaster physical, psychosocial, disaster mental health impacts
- Should address special needs of the pediatric population in the overall context of disasters for children, their families and the overall population
- Should address health care disparities
- Should become part of disaster mental planning, response and recovery

Respiratory infections in NYC

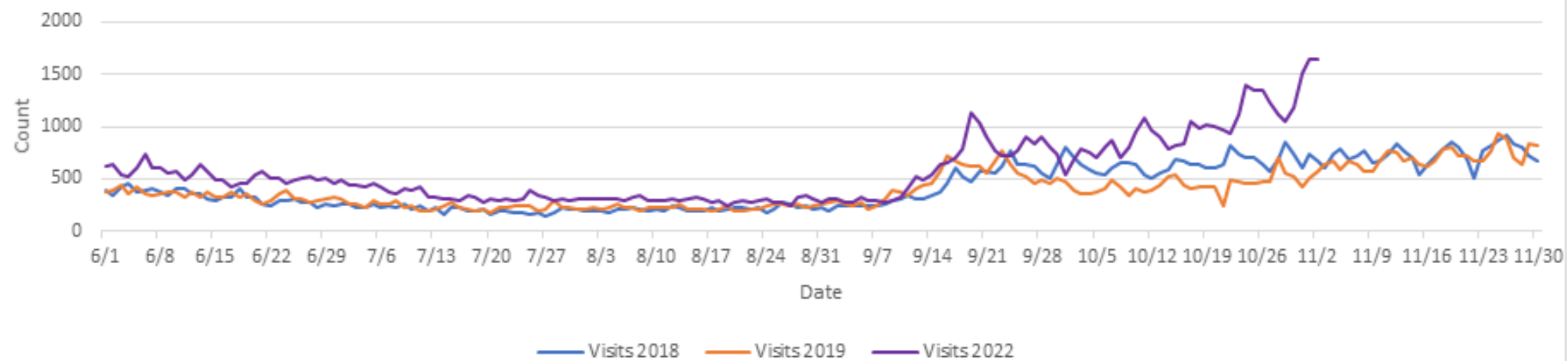
Ellen H. Lee, MD, MPH

New York City Department of Health and Mental Hygiene

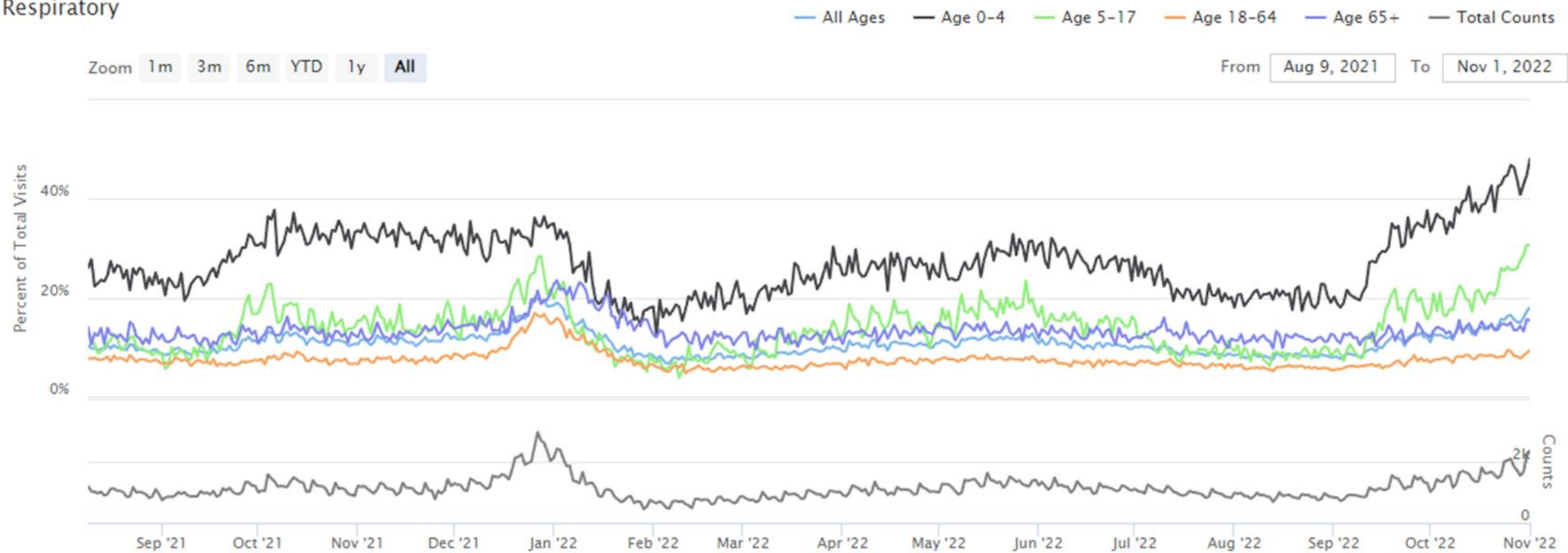
November 3, 2022

The information presented is based on our knowledge as of today and is subject to change.

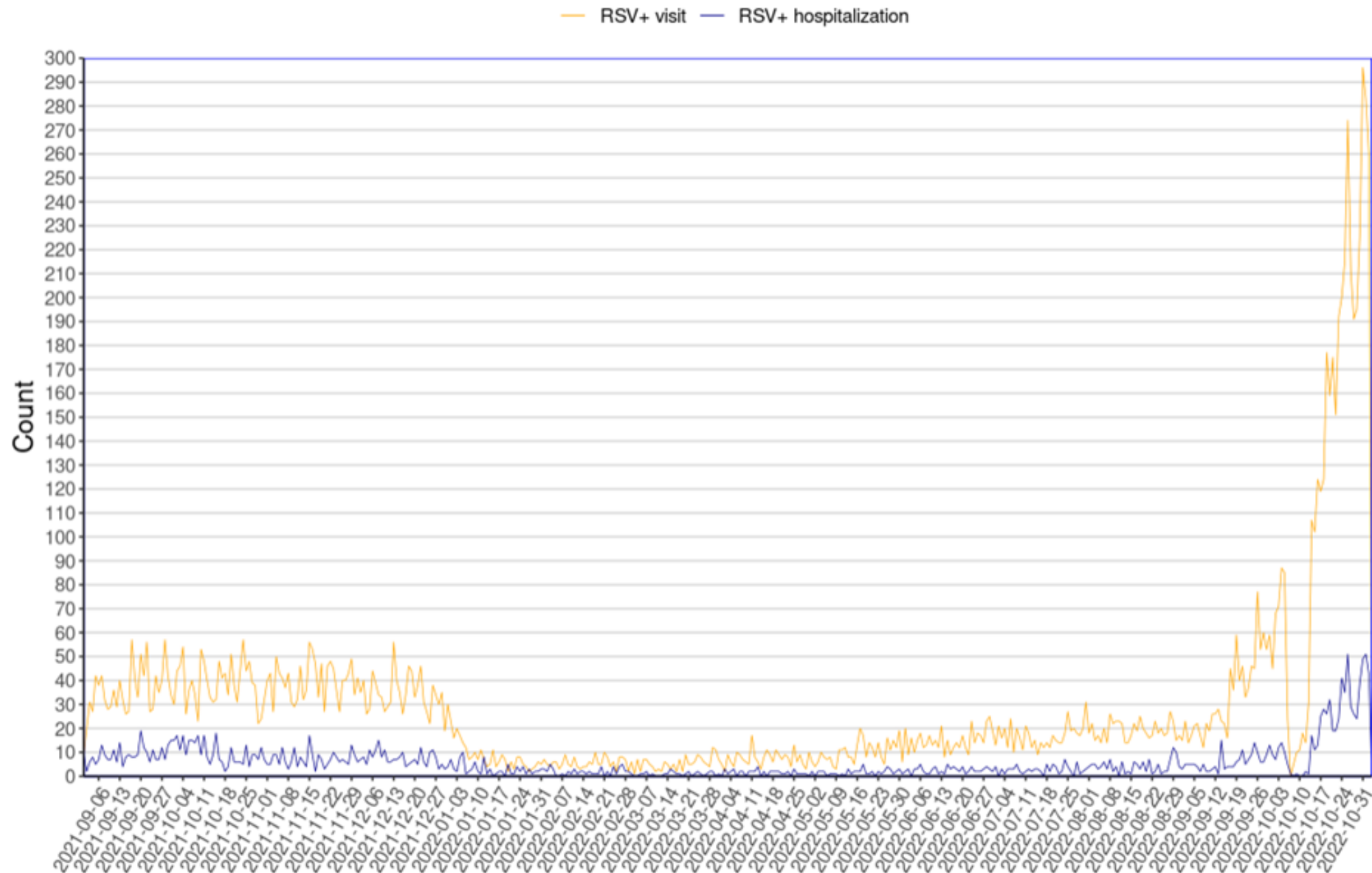
ED Visits, Resp/Asthma ≤ 17 years old



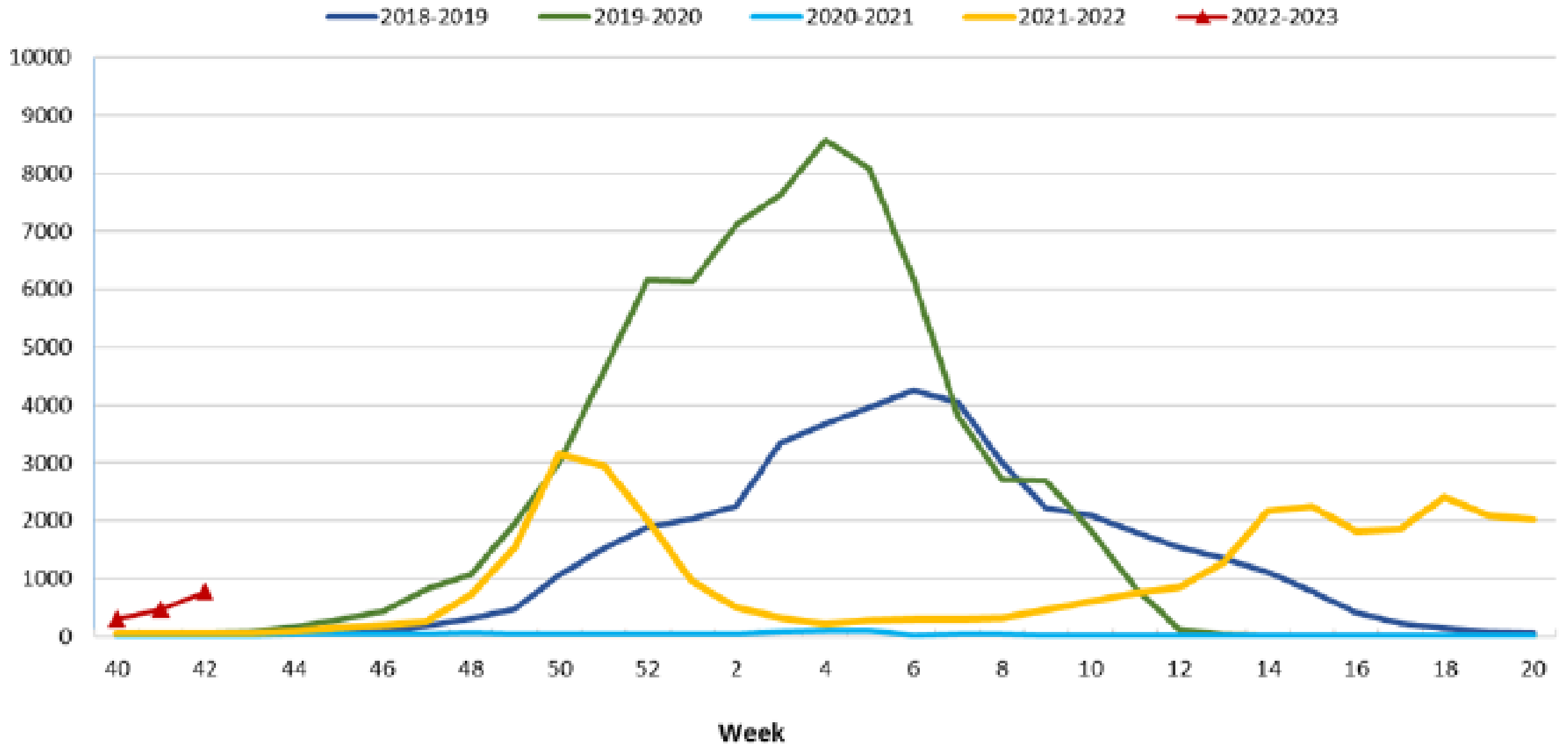
Respiratory



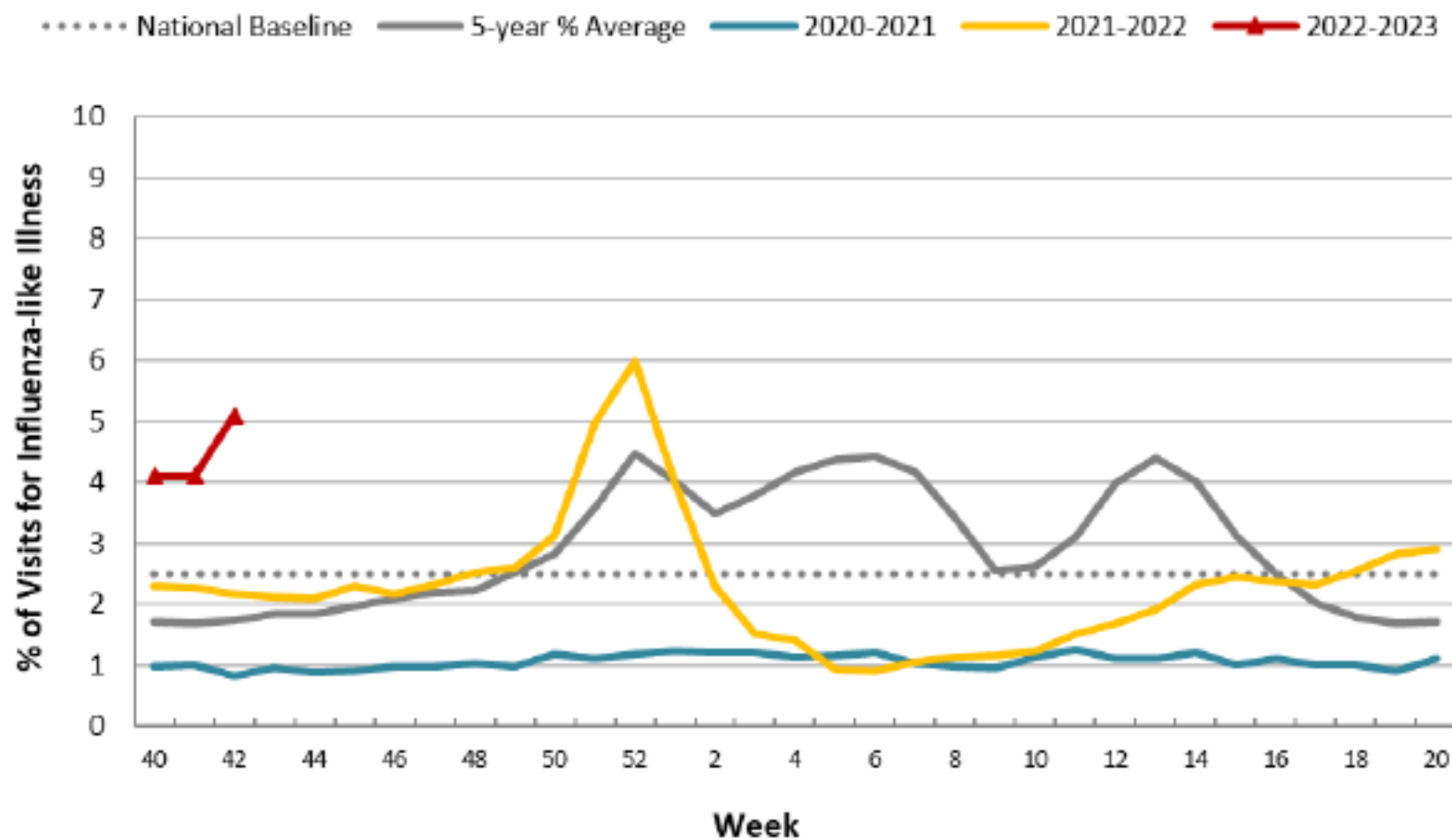
Lab confirmed RSV ED visits and hospitalizations, <=17 years old



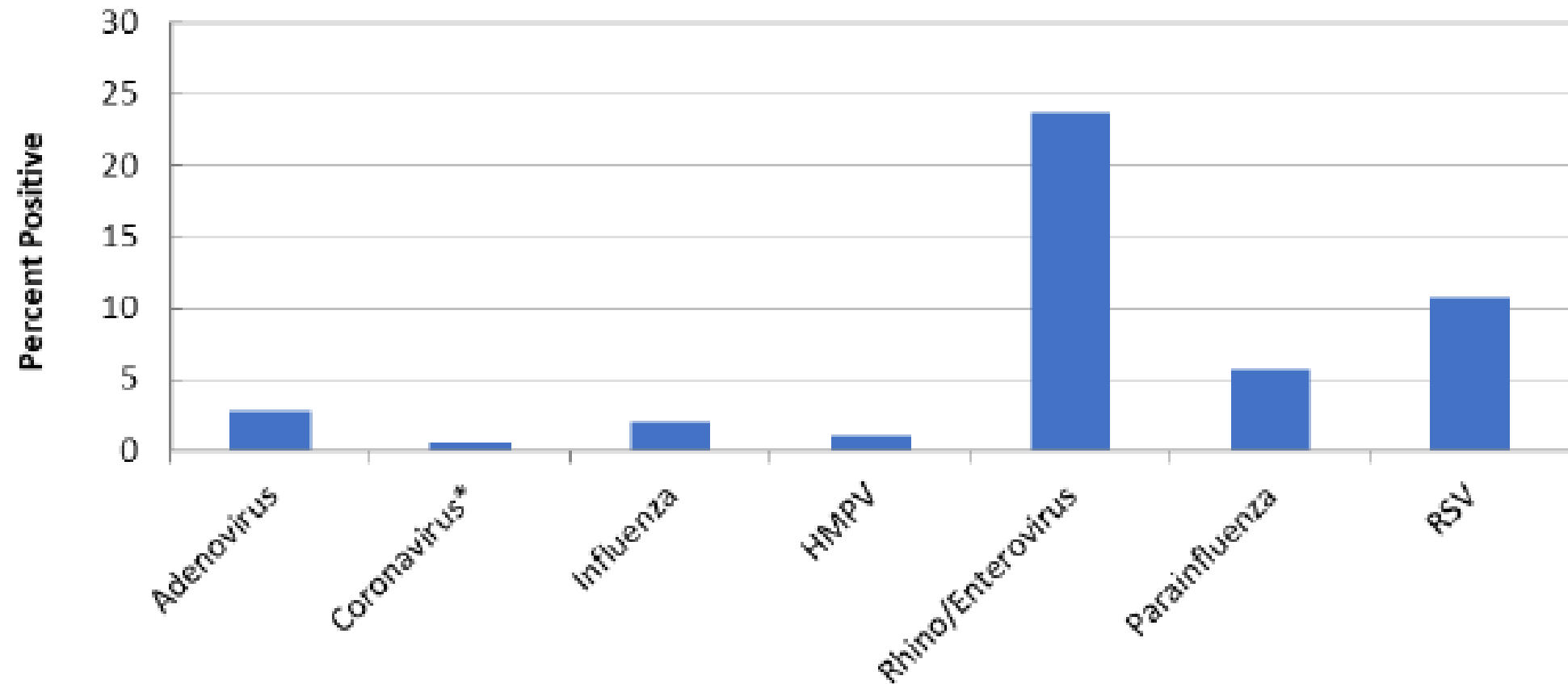
Influenza Positive Laboratory Results Reported to NYC DOHMH by season



NYC Outpatient Influenza-like Illness Surveillance Network 2022-2023 and Selected Previous Seasons



Other Respiratory Virus Results, Selected NYC Labs
October 16 - 22, 2022



* Human coronavirus types 229E, NL63, OC43, and HKU1

Get Your Updated COVID-19 Booster and Flu Shot Today!

Flu shots and the new COVID-19 vaccine booster are recommended right now. Flu shots are available for people age 6 months and older, and the new COVID-19 booster, designed to protect against the new omicron subvariants, is available for people age 5 and older. If you received your most recent COVID-19 vaccine dose at least two months ago, now is the time to get boosted.

Can I get the new COVID-19 booster at the same time as my flu shot?

Yes. You can get them at the same time or separately. The important thing is to get both vaccines soon. COVID-19 and the flu virus will be spreading at the same time this fall and winter. Both shots help decrease your risk of needing medical care.

Can I get the new COVID-19 booster if I recently had COVID-19?

Yes, but consider waiting three months after you had COVID-19. You may want to get your booster sooner if you or a loved one are at higher risk of exposure to or severe illness from COVID-19. Talk to your health care provider if you have questions.

If you do not have a provider, call **311** to get connected to care. Care is provided in New York City regardless of immigration status, insurance or ability to pay.

Which COVID-19 booster should I get?

You can get the updated Pfizer booster (if you are age 5 or older) or the updated Moderna booster (if you are age 6 or older), regardless of the brand you received previously.



Impact of the RSV Surge on pediatric capacity at Northwell health

- Matthew Harris MD, FAAP, FAEMS
- Medical Director, Crisis Management,
- Northwell Health

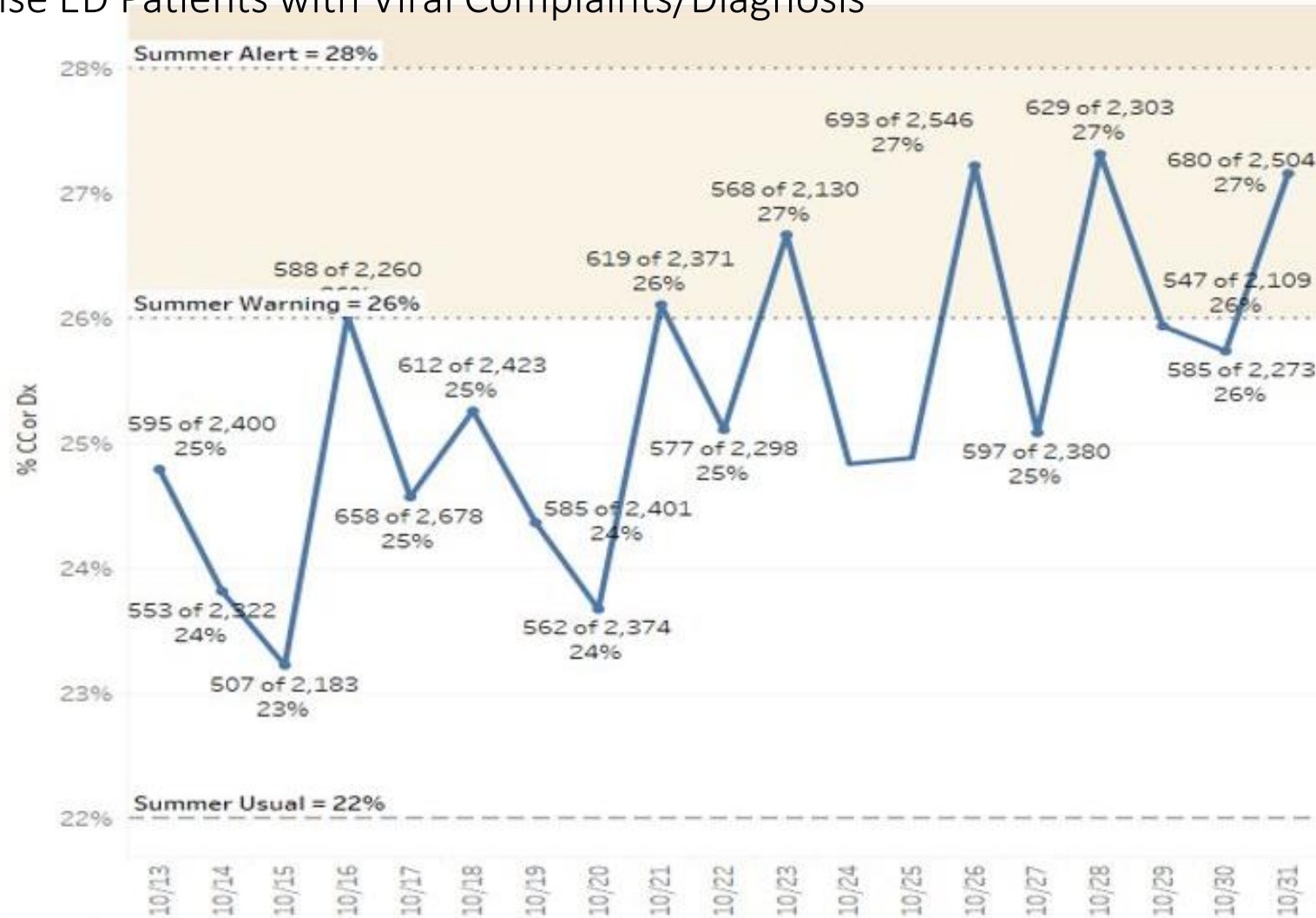
November 4, 2022



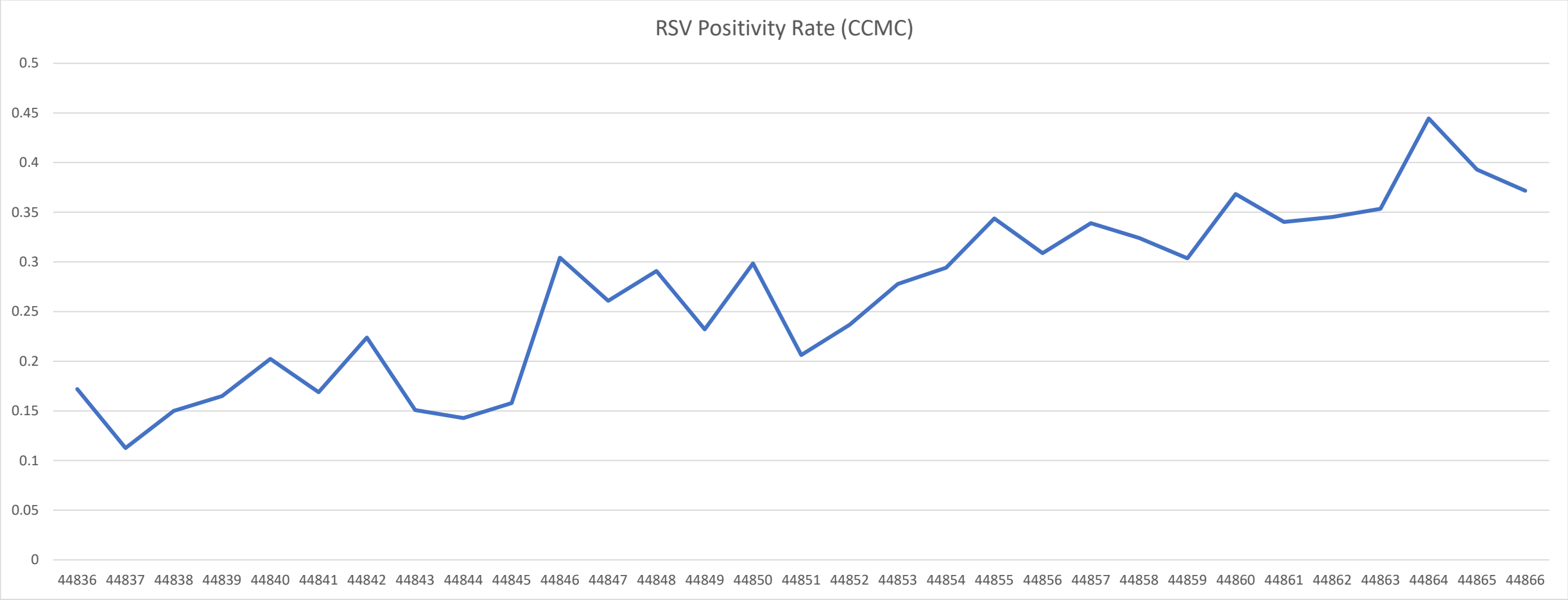
Daily Viral Syndrome Surveillance

Percent of sunrise ED Patients with Viral Complaints/Diagnosis

Site(s): All



RSV Positivity rate – CCMC



Emergency Department Impact:

Volume and Acuity Compared to 2019

**Emergency
Department Volume:**

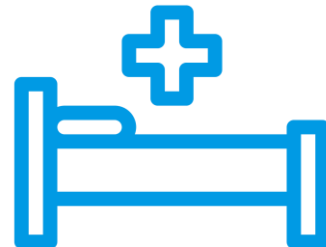
↑ 40%



Admission Rate:

Floor Admissions
PICU Admissions

↑ 48%



Treat and Release:

↑ 26%



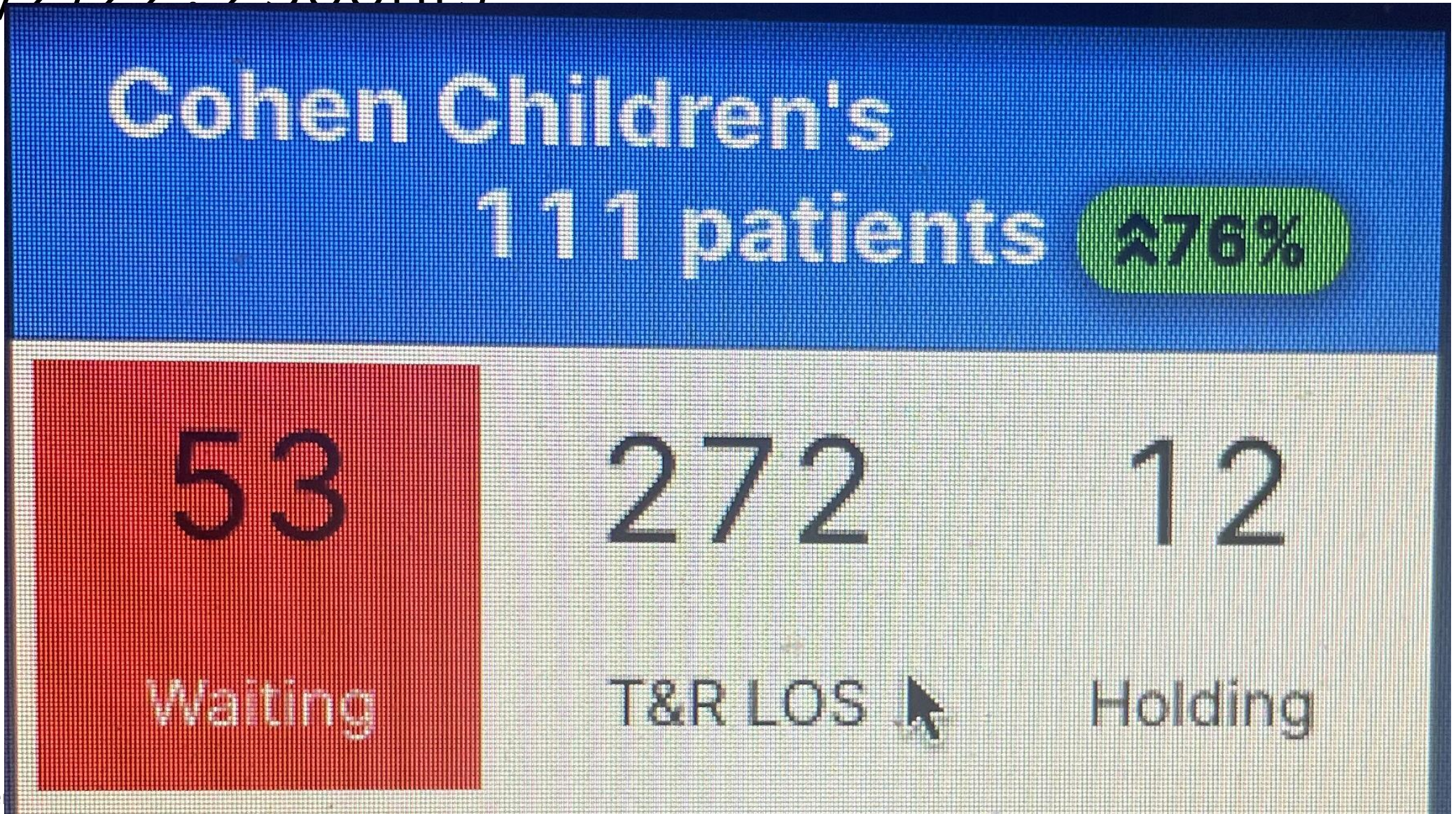
**Transfer to Non-
NWH:**

NA



The Five HIGHEST ED Registration days have occurred in the past two weeks (range 283-317)

11/2/22: 2300hrs

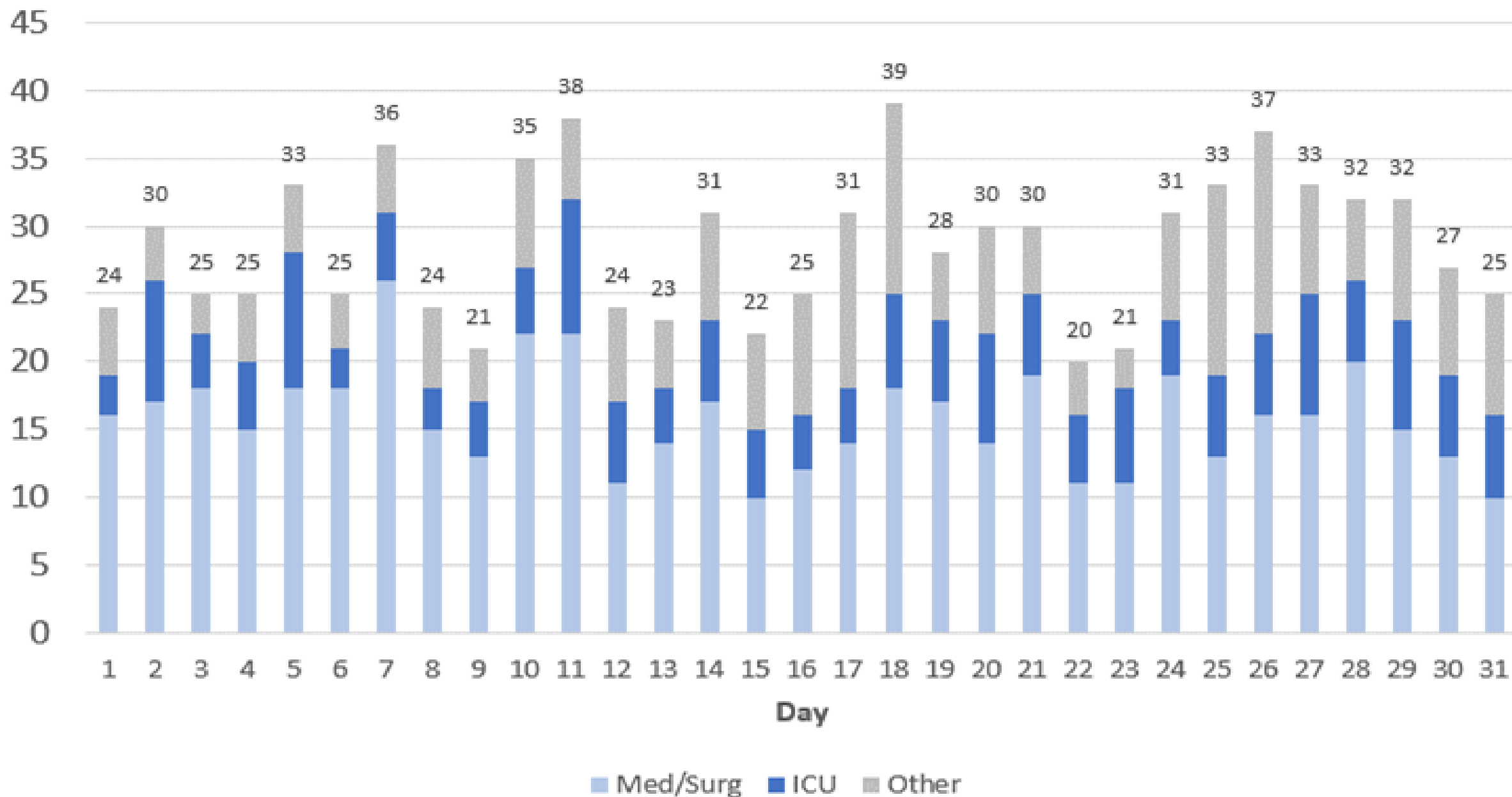


Emergency Department Impact Continued

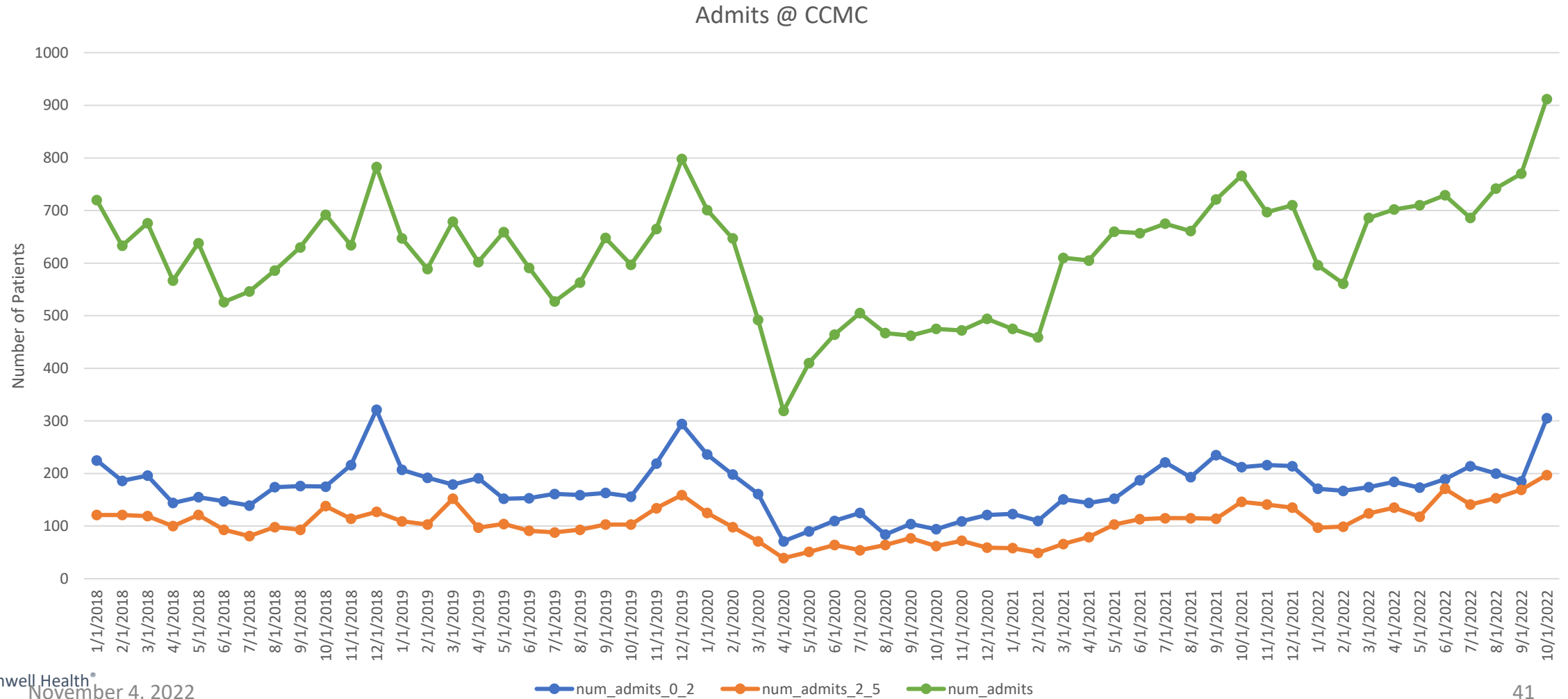
	Dispo Binary / Arrivals TS			
	ADMIT		T & R	
	2019	2022	2019	2022
Avg. Door to Prvdr Mnts	43	50	60	77
Avg. Prvdr To Dispo Mnts	244	263	161	160
Avg. Dispo To Door Mnts	214	372	27	26
Avg. Loss Mnts	499	682	214	261

Admit Holds >12 Hours		
Month	2019	2022
January	35	46
February	42	35
March	32	85
April	7	164
May	16	131
June	5	127
July	3	88
August	13	73
September	12	46
October	7	71
November	27	
December	102	

October ED Admits



Admissions: Driven by 0-2 years



Emergency Department Response

Opened Emergency Department Annex:

- Hours of Operation: ~24 hours/day
- Target Population: ESI 4 & 5
- Number of Patient: ~ 80-100/ day



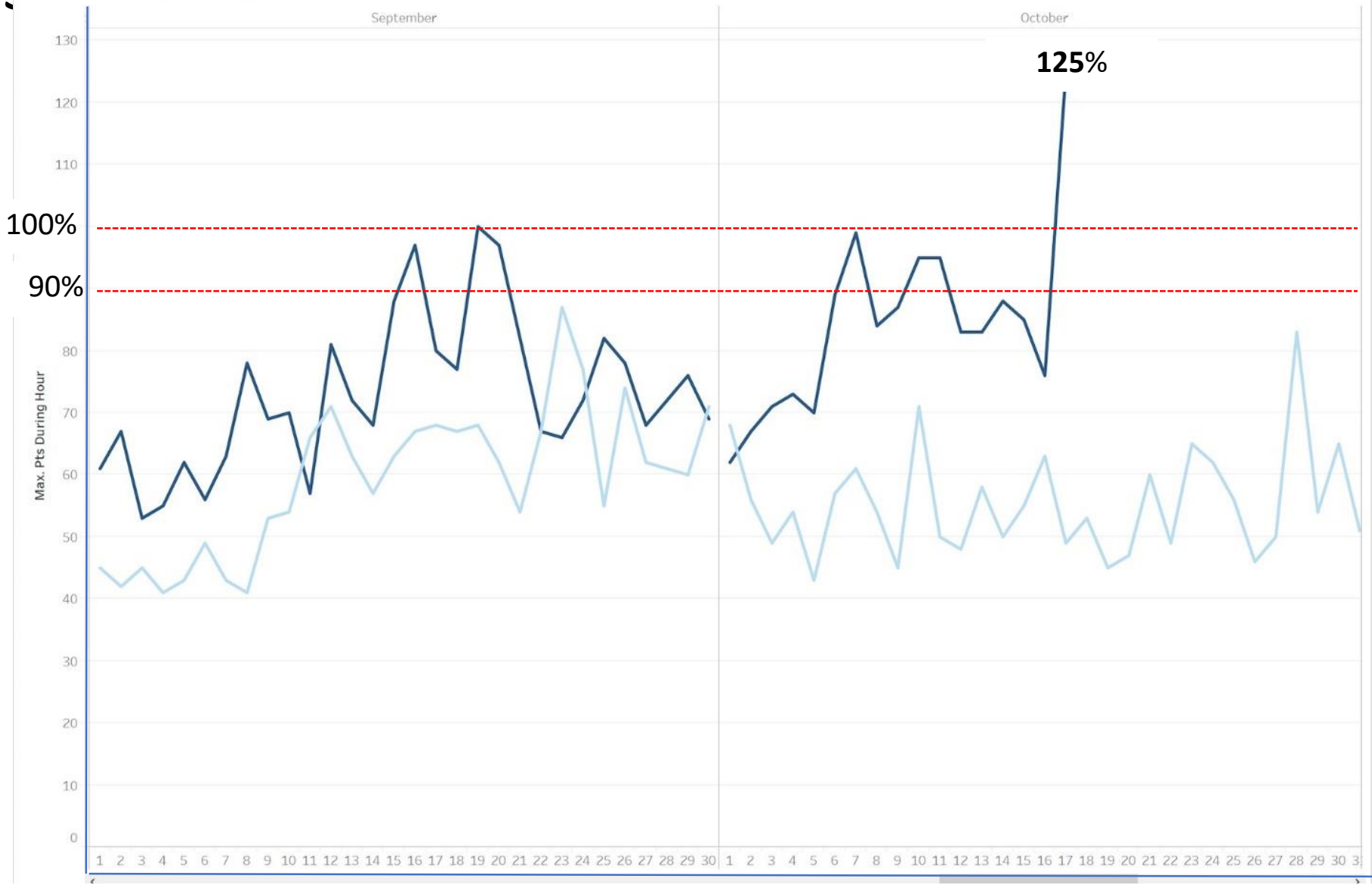
Staffing Adjustments:

- Increase Pediatric Emergency Medicine Physician Coverage
- Increase Advanced Clinical Practitioner Coverage
- Increase Nursing and Support Staff Resources



Hos

Max Census By Day, Sept & Oct YoY

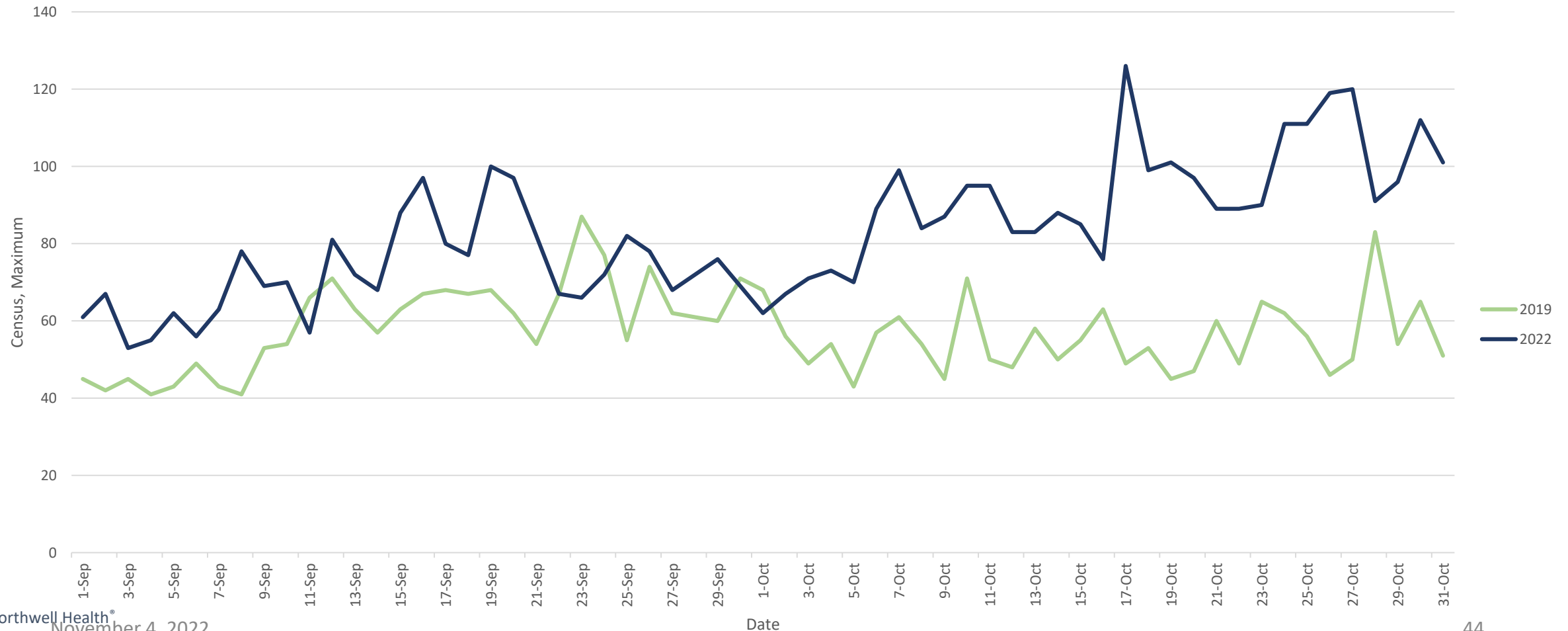


Key:

- 2022
- 2019

Admissions to Max Census – up 44% Compared to Prior years

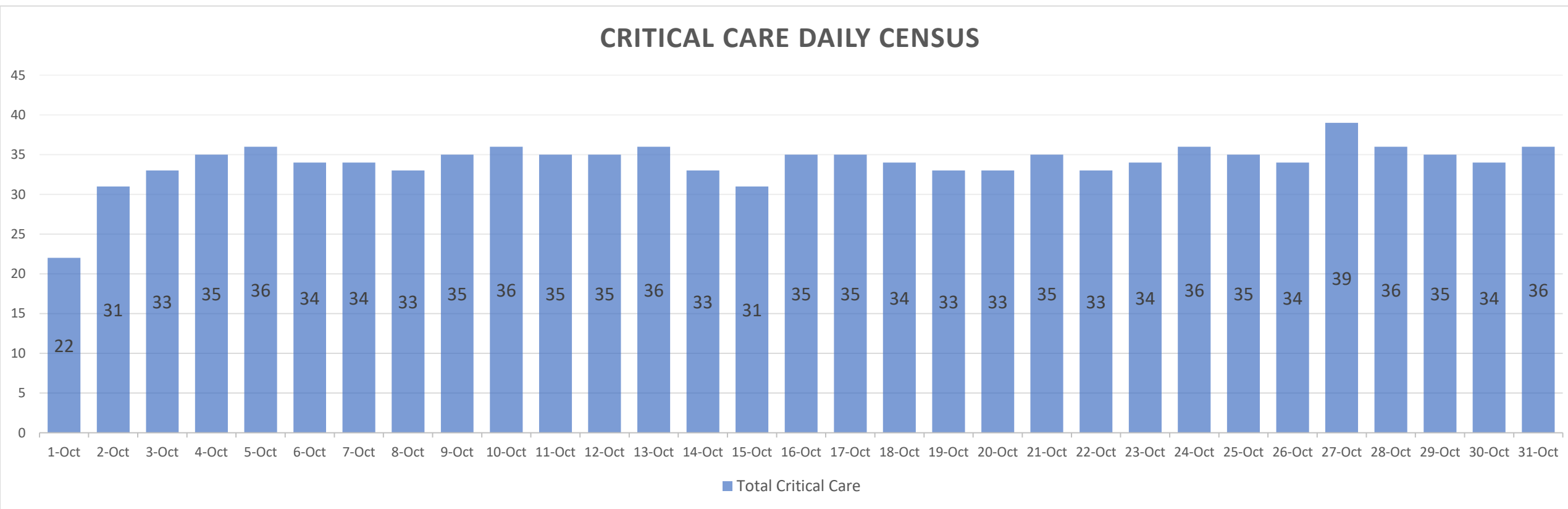
Maximum Census, YoY, by Day



Hospital Medicine Response

- **Augmented MD, RN and Ancillary Service Coverage**
- **Use of alternative care spaces within the children's hospital**
- **Load-balancing (Level-loading) general pediatrics patients to other pediatric facilities within the health system.**
- **Expanded use of heated high nasal cannula on general pediatrics floor**

Critical Care Impact



Critical Care Response

- Initiate PICU Surge Plan
- Augmented MD, RN and Ancillary Service Coverage
 - 2nd Overnight Attending to Cover overflow patients (PRN)
- Alternative Critical Care Spaces (PACU, ED, Step-down)
- Maintaining available bed(s) for critical patients

Health System Response

- Initiation of Children's Hospital and System Emergency Operations Teams
- Distribution of clinical care guidelines to non-pediatric emergency departments
- Operational and Logistical Support from Corporate Emergency Management
- Pediatric Training and Competencies for MD, RN and Respiratory in non-Children's Hospital locations

Thank you





Weill Cornell Medicine

 **New York-Presbyterian**

Respiratory Viral Illness Surge

NYPH– Weill Cornell Experience (to date)

Bruce M. Greenwald, MD

Executive Vice Chair, Dept of Pediatrics

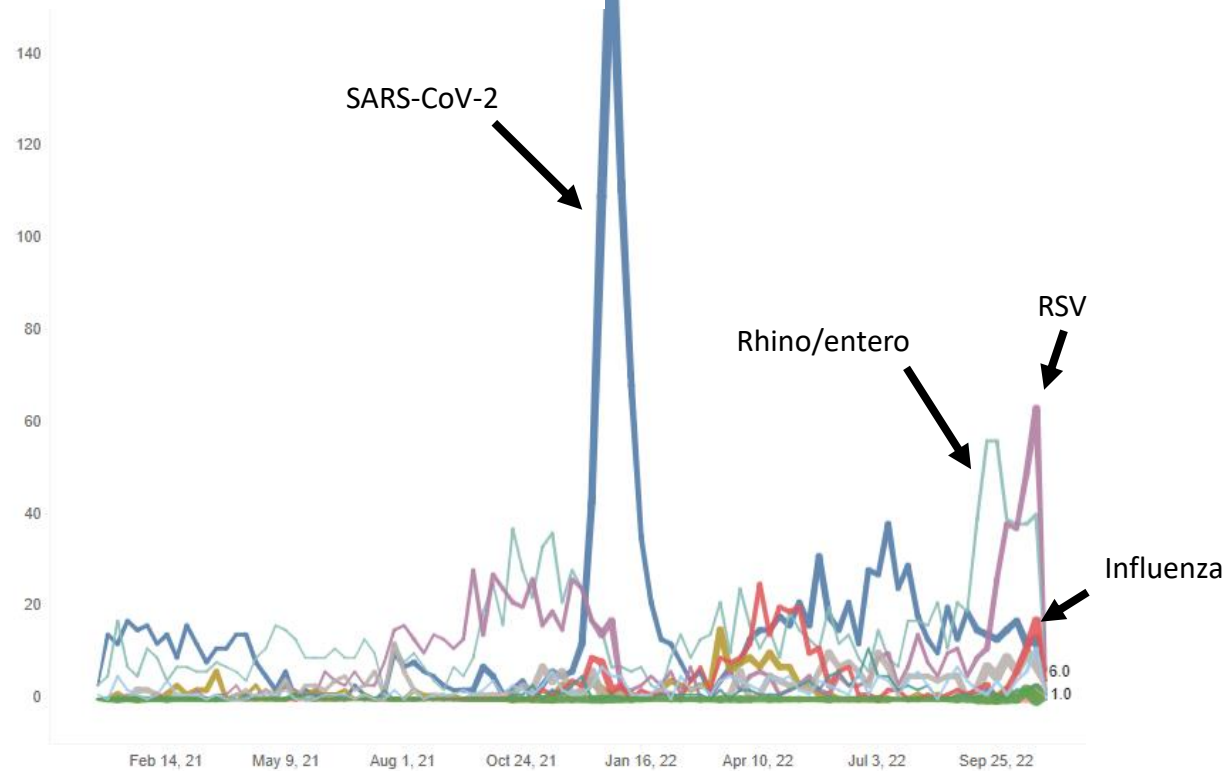
Chief, Division of Pediatric Critical Care Medicine

Professor of Clinical Pediatrics

Respiratory Viral Trends NYP-WC and LMH

Positive Tests

February 2021 to October 30 2022



Positivity rate

(10/23/22-10/29/22):

Rhino/entero 29.3%

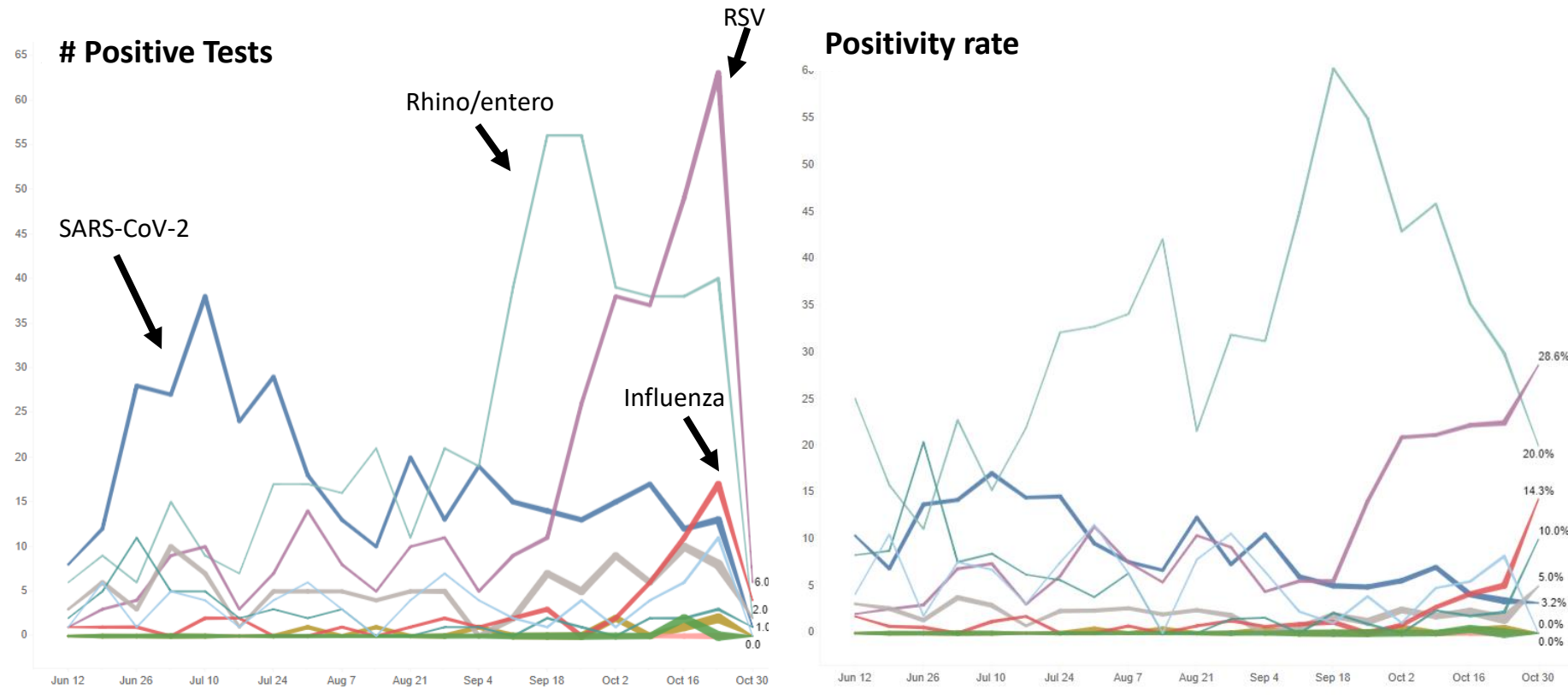
RSV 21%

SARS-CoV-2 3.2%

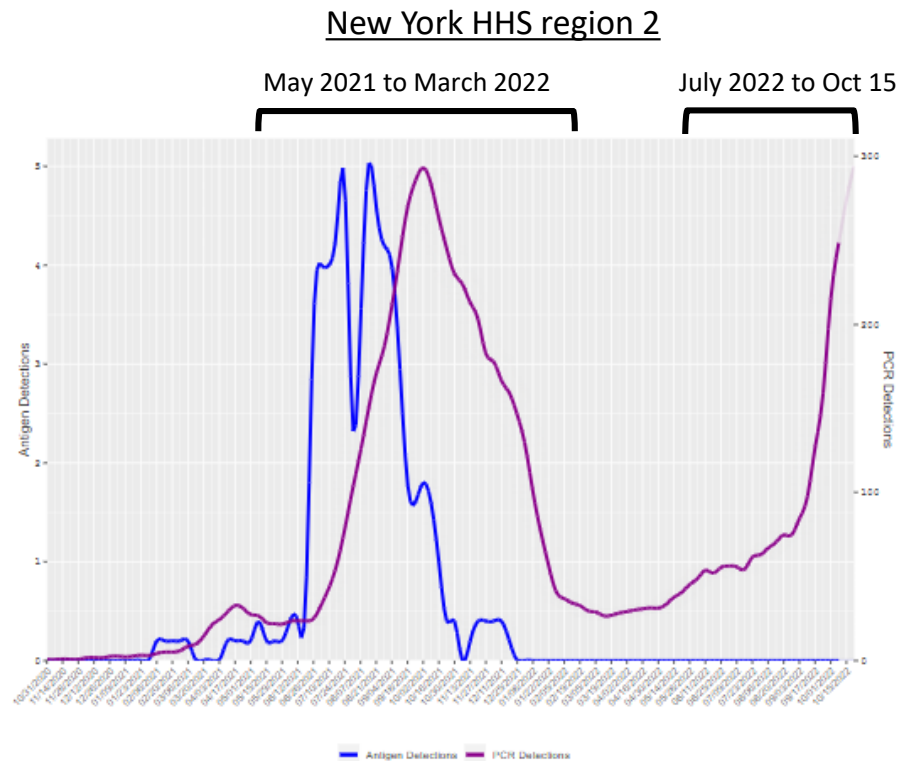
Influenza 5%

Source: NYP Respiratory Pathogen Dashboard - includes results of multiplex respiratory PCR panel

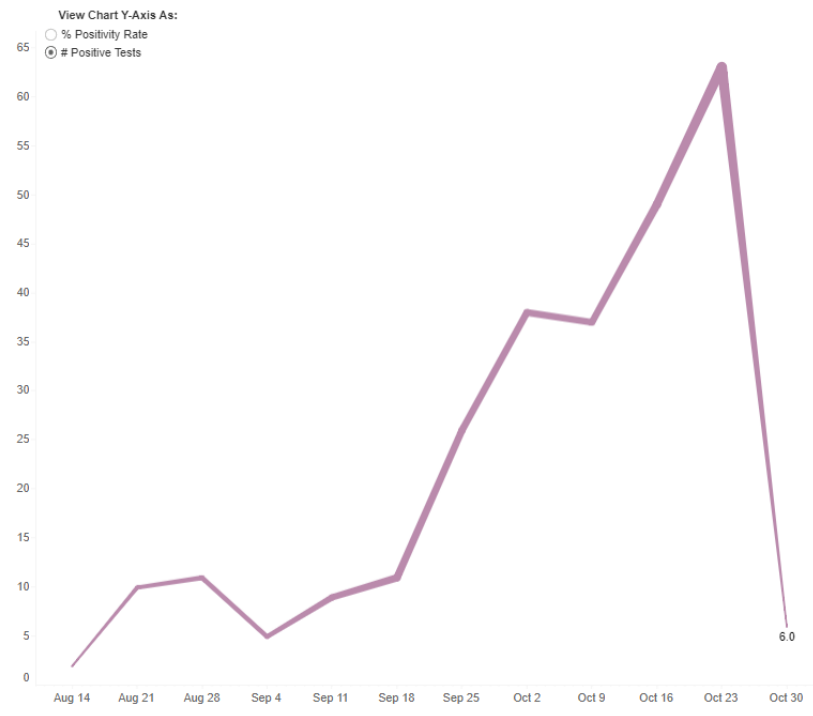
June 2022-October 30, 2022



RSV Positive Tests



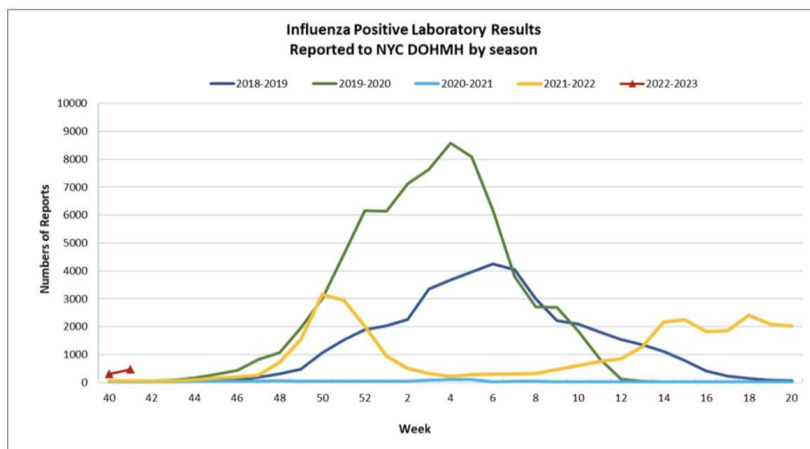
RSV positive tests at WCM and LMH (Pediatrics)



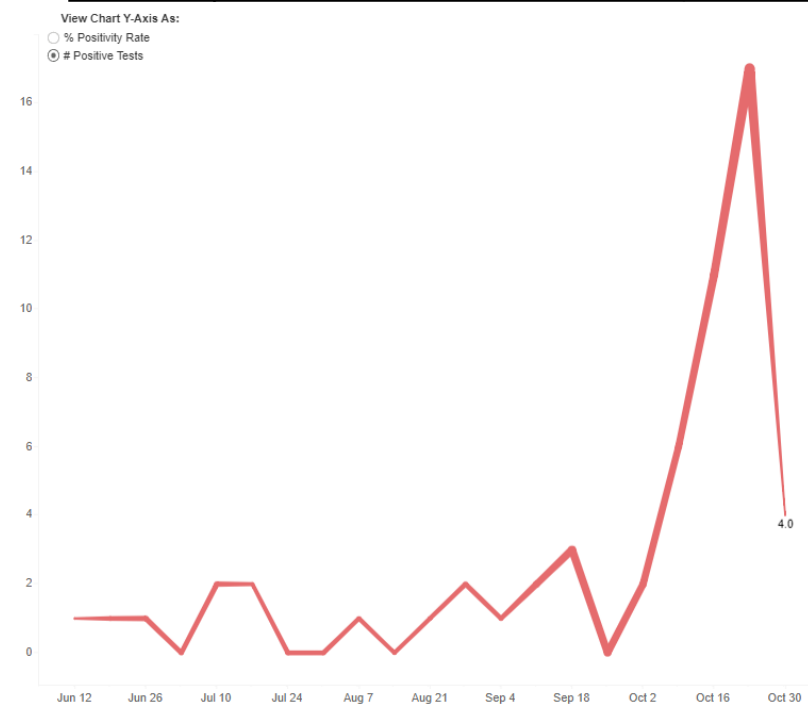
<https://www.cdc.gov/surveillance/nrevss/rsv/hhsregion.html>

Influenza Season- Starting Earlier This Year

During Week 41 (October 9 – 15, 2022), approximately 1% of all specimens submitted for influenza testing were positive for influenza.

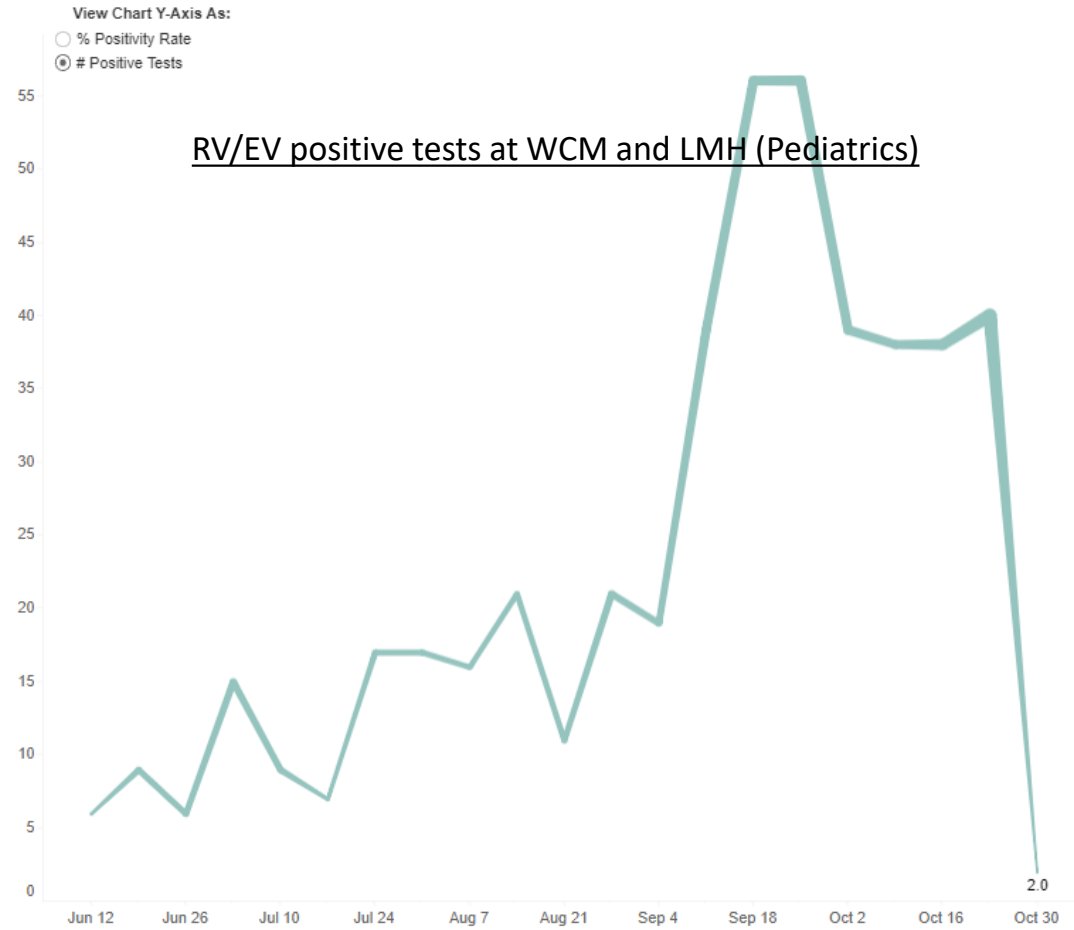


Influenza positive tests at WCM and LMH (Pediatrics)

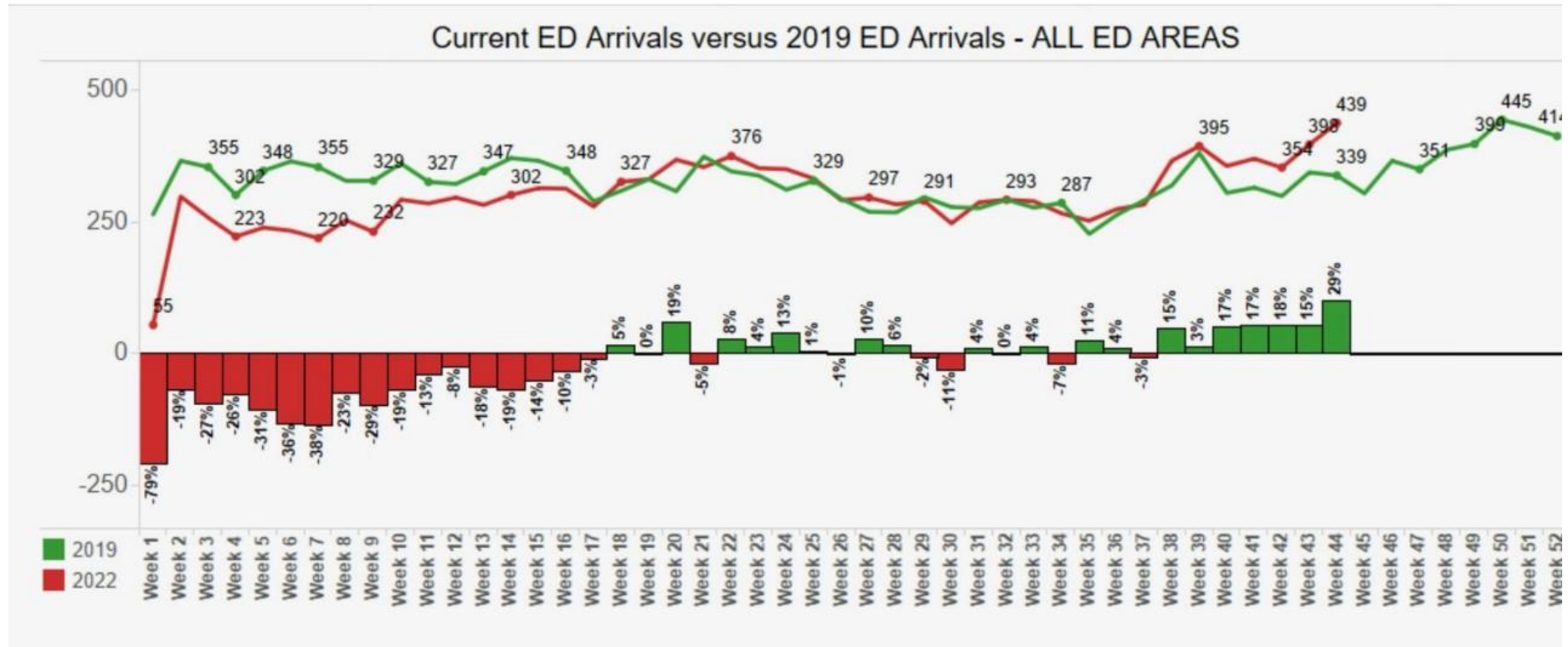


<https://www.health.ny.gov/diseases/communicable/influenza/surveillance/>

Rhinovirus/Enterovirus (RV/EV)



Pediatric ED Arrivals- 2019 vs 2022



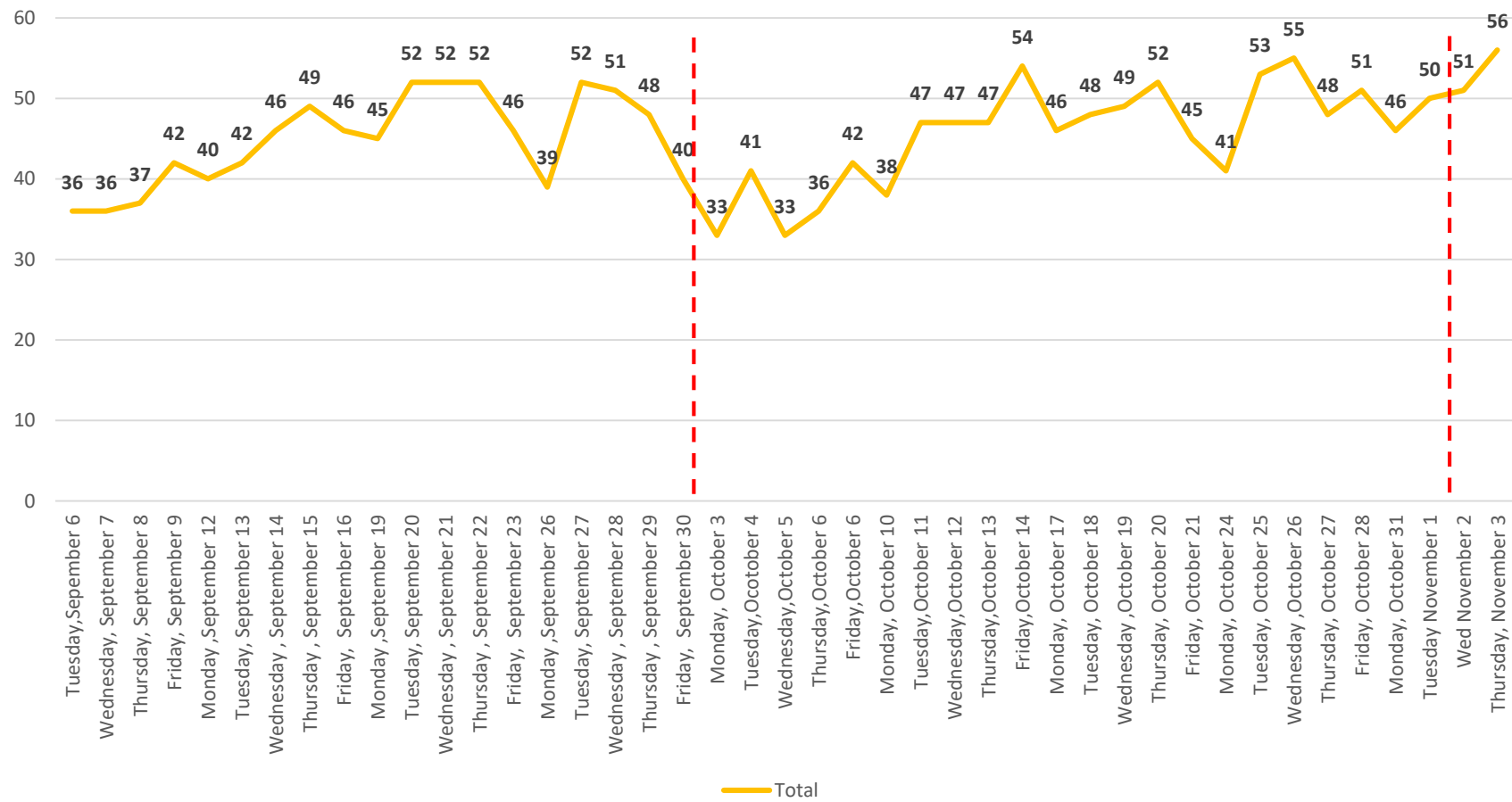
Morgan Stanley Children's Hospital- Columbia University Medical Center Experience

- **On critical diversion part of every day for the past 3-4 weeks**
- **In-services at capacity**
- **On average 8-16 admitted patients on hold in the ED (behavioral health not included)**
- **ED Length of Stay (LOS) up to 3 days.**

Pediatric Bed Capacity

Beds	Pre- Covid	Covid to Pre-Surge	Surge
General Pediatrics	26	18	24-28
Intermediate Care	12	16	19
Intensive Care	23	18	21-23
Total	61	52	64-70

Total Bed Occupancy (General Pediatrics, Intermediate Care, PICU)



Bronchiolitis- A Primer

- **Pathophysiology**
 - **Respiratory viral infection**
 - **Congestion/mucous plugging**
 - **Airway inflammation**
 - **Tachypnea**
 - **Hypoxemia**
 - **Hypercarbia**
 - **Apnea (infants)**
 - **Reactive airway disease/bronchospasm**
 - **Older patients with genetic predisposition**
 - **Former premature infants with chronic lung disease**
 - **Patients with asthma**

Bronchiolitis- A Primer

- **Management**
 - **Supportive care**
 - Suctioning/Normal saline nose drops
 - Supplemental oxygen
 - Fever control
 - Consider hypertonic saline (3%) nebulizers
 - **Respiratory support for respiratory insufficiency/failure**
 - High flow nasal cannula
 - Heliox (reduces airway resistance/work of breathing)
 - Noninvasive positive pressure ventilation (CPAP/BiBAP)
 - Intubation and mechanical ventilation
 - Extracorporeal life support (ECMO)
 - **Specific treatment for reactive airway disease/bronchospasm**
 - Bronchodilators (albuterol, terbutaline, ipratropium)
 - Corticosteroids (short course)
 - Chest physiotherapy

Bronchiolitis- Supply Chain Issues

- **Monitoring**
 - Cardio-respiratory monitors/cables
 - Pulse oximeters/probes
- **Respiratory Support**
 - High flow devices/ nasal cannula
 - Facemasks
 - Suction/ catheters
 - CPAP/BiPAP devices
 - Ventilators/ tubing
 - Heliox (limited supply on the Earth)
- **Medications**
 - Albuterol (5mg/ml in short supply)
 - Terbutaline
 - Ipratropium
 - Corticosteroids (prednisone, methylprednisolone, dexamethasone)

Discussion and Q&A

Please place your comments/suggestions questions in the chat

- Please tell us your experience during the current surge
 - ED, Hospital, PICU
 - What were the greatest concerns/deficits (Space, Staff, Equipment, Supplies/Pharmaceuticals)
 - How and by how much did you increase your surge capability
 - Did you go to altered standards and or crisis standards of care

Suggest future plans/ideas for increasing surge of patients

Considerations for current respiratory illness surge planning and response

- Gathering epidemiological/statistical data on the current and future outbreaks that is real time and shared
- Working together with local and regional ED, Pediatric and PICU leadership to discuss potential load leveling,
- The utilization of possible adult resources under PICU direction,
- Exploring telemedicine options
- Seeking alternate care resources and sites

Considerations for current respiratory illness surge planning and response Continued

- Utilizing pediatric office-based practitioners and outpatient and urgent care resources to screen patients to prevent ED overload with patients not requiring admission.
- Public messaging and parental education as to when to seek care and at what level can also help with initial access triage.
- Early activation of HICs to improve hospital operations and regular and frequent communication with local, regional and state health authorities & health care coalitions who can consider the use of regional MOCs and the implementation of emergency rules may lead to improved outcomes and best utilization of limited resources.
- We encourage Pediatric Emergency Management and clinical leadership to use their influence and expertise to continue the dialogue, develop further strategies and to support improved local, state and national pediatric bed capacity and capability awareness and utilization. Please feel free to contact us if we can be of assistance with coordination and dissemination of information.

Regional Pediatric Surge Planning Proposed Model

- Regional Situational Awareness collected from each state, bed availability, needs/resource availability
- Web based real time situational awareness, communications, bed matching
- Coordination of External Resources, ESF8/ESF6, ESF7, Local, County, State to National (ASPR/FEMA/CDC etc. input)
- Regional Incident Command Structure, Control of Asset across State Lines
- Regional Resource Response Telemedicine, CBRNE/Poison Control, Response Teams, National Guard, DOD, mutual aid transport
- Regional PsyStart/Mental Health match Needs/Resources, local state, regional
- Regional Transport/ Train Utilization match needs to resources
- Education, Training, Exercises within regional model that includes Health Care Disparities and pediatric patients as represented in the population



Suggested Resources

- We will be sending out the slides and a recording of the webinar
- **Curated Resources Courtesy of National Pediatric Disaster Coalition**

Visit <https://www.npdcoalition.org/resources/>

****We will be sending out a document, which includes these resources****

Resources Continued

- There are a number of ASPR Regional Town Halls in progress or being planned. Please email Michael Anderson MD Professor of Pediatrics <Michael.Anderson@hhs.gov> to get you into that loop.
- In addition there is a resource search engine on the [Pediatric Pandemic Network](#) and additional resources on [mental health](#) and [crisis standards of care](#) created by the Western Regional Alliance for Pediatric Emergency Management ([WRAPEM](#)) one of ASPR Pediatric Disaster Centers of Excellence.
- Attached is the curated list of surge materials recently distributed throughout NPDC network and the California Hospital Association Disaster Conference on Pediatric Surge.
- NPDC is regularly pushing out additional RSV, Respiratory Surge JIT resources from trusted sources associated with the current respiratory surge on our Twitter [@npdcoalition](#). Perhaps you or one of your staff who may use twitter can follow us to help keep your team are in the loop.

Resources Continued

- American Academy of Pediatrics, CDC, ASPR, HRSA are all involved working to address the crisis.
- [Healthcare Ready](#) is now providing a weekly situation report. You and your team can sign up for those reports at [sign up here](#)
- CDC surveillance data sites include
- Flu - <https://www.cdc.gov/flu/weekly/fluactivitysurv.htm>
 - Weekly US Map: Influenza Summary Update - <https://www.cdc.gov/flu/weekly/usmap.htm>
 - FluView - <https://www.cdc.gov/flu/weekly/fluviewinteractive.htm>
- The National Respiratory and Enteric Virus Surveillance System (NREVSS) - <https://www.cdc.gov/surveillance/nrevss/index.html>
 - Includes respiratory syncytial virus ([RSV](#)), human parainfluenza viruses ([HPIV](#)), human metapneumovirus ([HMPV](#)), [respiratory adenoviruses](#), human coronavirus (other than COVID), rotavirus, and norovirus

Resources Continued

Finally NPDC leadership has made the following recommendations to improve coordination and situational awareness to implement solution focused alternative strategies such as:

- Gathering epidemiological/statistical data on the current and future outbreaks that is real time and shared
- Working together with local and regional ED, Pediatric and PICU leadership to discuss potential load leveling,
- The utilization of possible adult resources under PICU direction,
- Exploring telemedicine options
- Seeking alternate care resources and sites
- Utilizing pediatric office based practitioners and outpatient and urgent care resources to screen patients to prevent ED overload with patients not requiring admission are also useful strategies.
- Public messaging and parental education as to when to seek care and at what level can also help with initial access triage.
- Open facility and local/regional incident command and emergency operation centers to monitor and manage the surge event as determined by ongoing situation.

Thank You for Participating!

Special Thanks To:

New York City Department of Health & Mental Hygiene

Bruce M. Greenwald, MD, FAAP, FCCM

Professor of Clinical Pediatrics

Executive Vice-Chair, Department of Pediatrics

Chief, Division of Pediatric Critical Care Medicine

Weill Cornell Medicine

bmgreen@med.cornell.edu

Matthew Harris MD, FAAP, FAEMS

Medical Director, Northwell Health Crisis Management,

Pediatric Emergency Medicine Attending, Cohen Children's Medical Center

Mharris13@northwell.edu

New York City Pediatric Disaster Coalition

Michael Frogel, MD, FAAP

Co-Principal Investigator

Mikefrogel@gmail.com

John Jermyn

Project Director

jjermyn@maimonidesmed.org