Kentucky COVID-19 Healthcare - Public Health Update #16

Kentucky Department for Public Health
Statewide Webinar for Clinicians and Public Health
Date: June 8, 2021

Kentucky Public Health
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AGENDA

Dr. Doug Thoroughman
CDC Career Epidemiology Field Officer

Dr. Amy Herrington
Clinical Educator

Dr. Alyson Cavanaugh
CDC Epidemic Intelligence Officer

Dr. Connie White
Deputy Commissioner, Clinical Affairs

Michael Curran
Infection Control Nurse, HAI/AR Prevention Program

- Welcome and Introductions
- Background/Current Situation
- Variant Strain Update
- False Positive Interpretation
- COVID-19 Vaccine Update
- Breakthrough Cases Update
- Re-infection update
- Pregnancy & COVID-19
- Candida auris
- New Reportable Diseases
- Ebola Traveler and Monitoring
- Q & A

Situation Update

Doug Thoroughman, PhD, MS

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WORLD[3]

WHO declared pandemic on March 11, 2020

173,005,553

Cases (↑368,456)

3,727,605

Deaths (↑8,661)

2.2%

Mortality Rate

215 countries

with at least one case

UNITED STATES[2*]

Risk to Americans is widespread

33,193,680

Cases (↑11,134)

594,802

Deaths (↑354)

1.8%

Mortality Rate

59 states + territories

with at least one case

KENTUCKY[1]

State of Emergency declared March 6, 2020

460,520

Cases (↑35)

7,103

Deaths (↑5)

1.5%

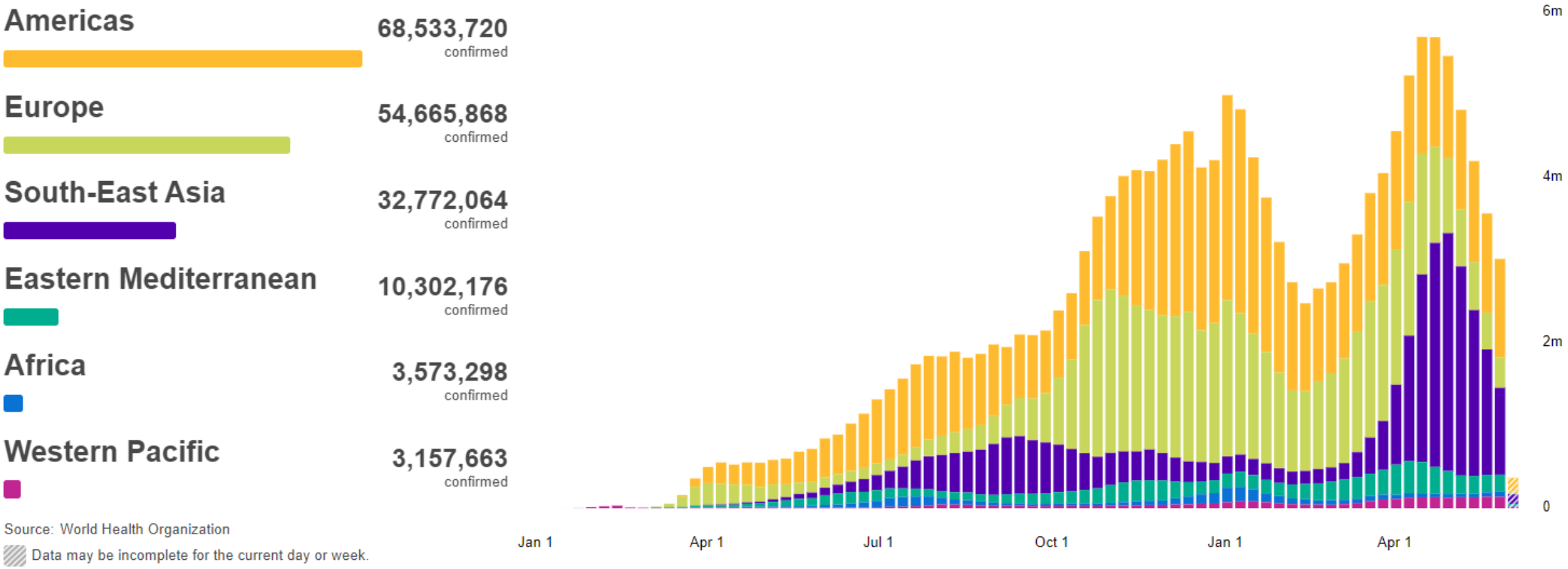
Mortality Rate

120 counties

with at least one case

[1]Kentucky Department for Public Health
[2]The Centers for Disease Control and Prevention https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html
[3]The World Health Organization https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/

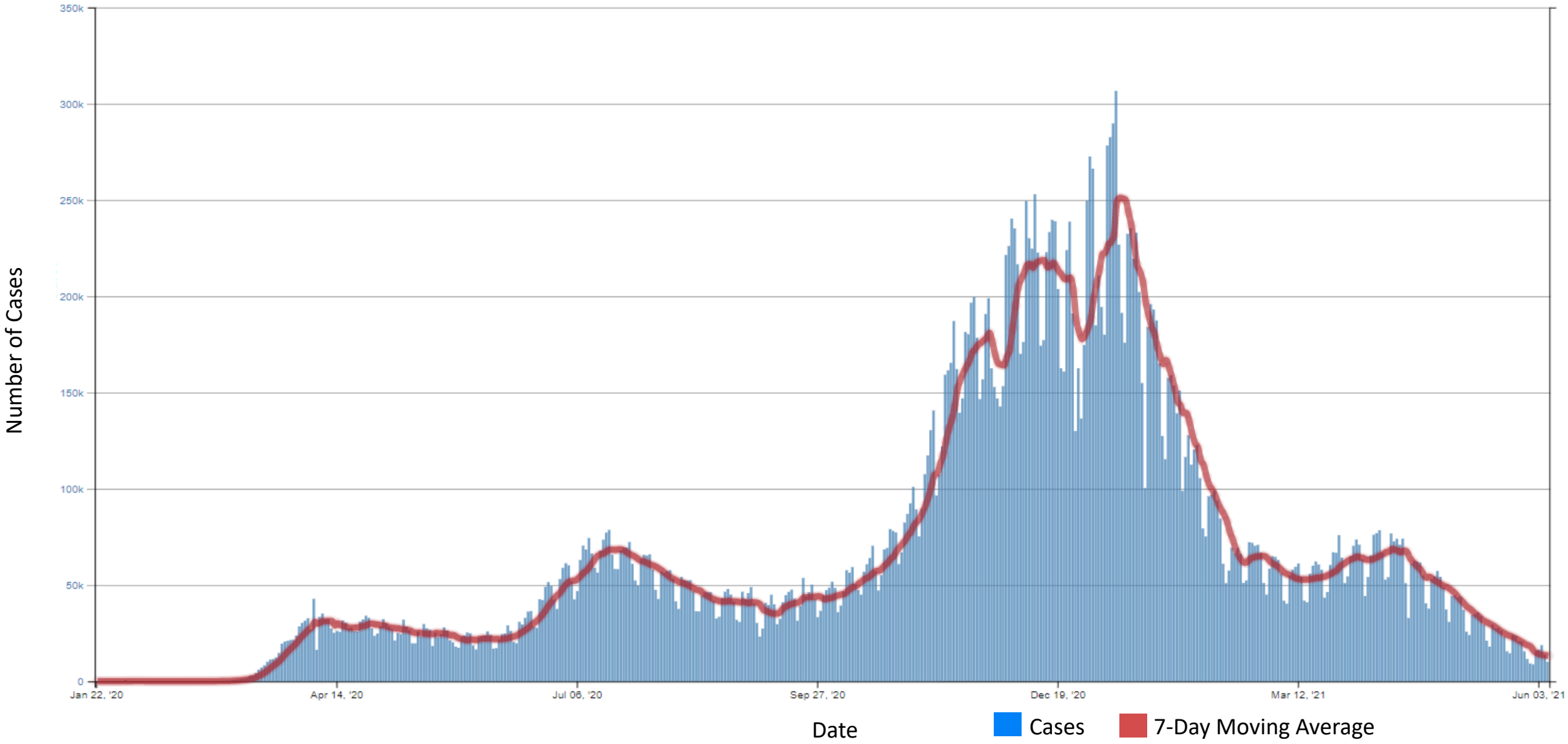
Worldwide Incidence by WHO Regions



Interpretation: The earliest part of the curve represents cases in Wuhan and then Hubei Province in China. In early March 2020, spread in Europe accelerated, followed by the Americas. Taken as a geographic area, the Americas have experienced a higher number of cases than other regions. Europe saw a dramatic increase in transmission in October 2020, peaking in the first week of January 2021. Worldwide incidence trended steeply downward until mid-February when cases rose sharply again, peaking in late April, 2021.

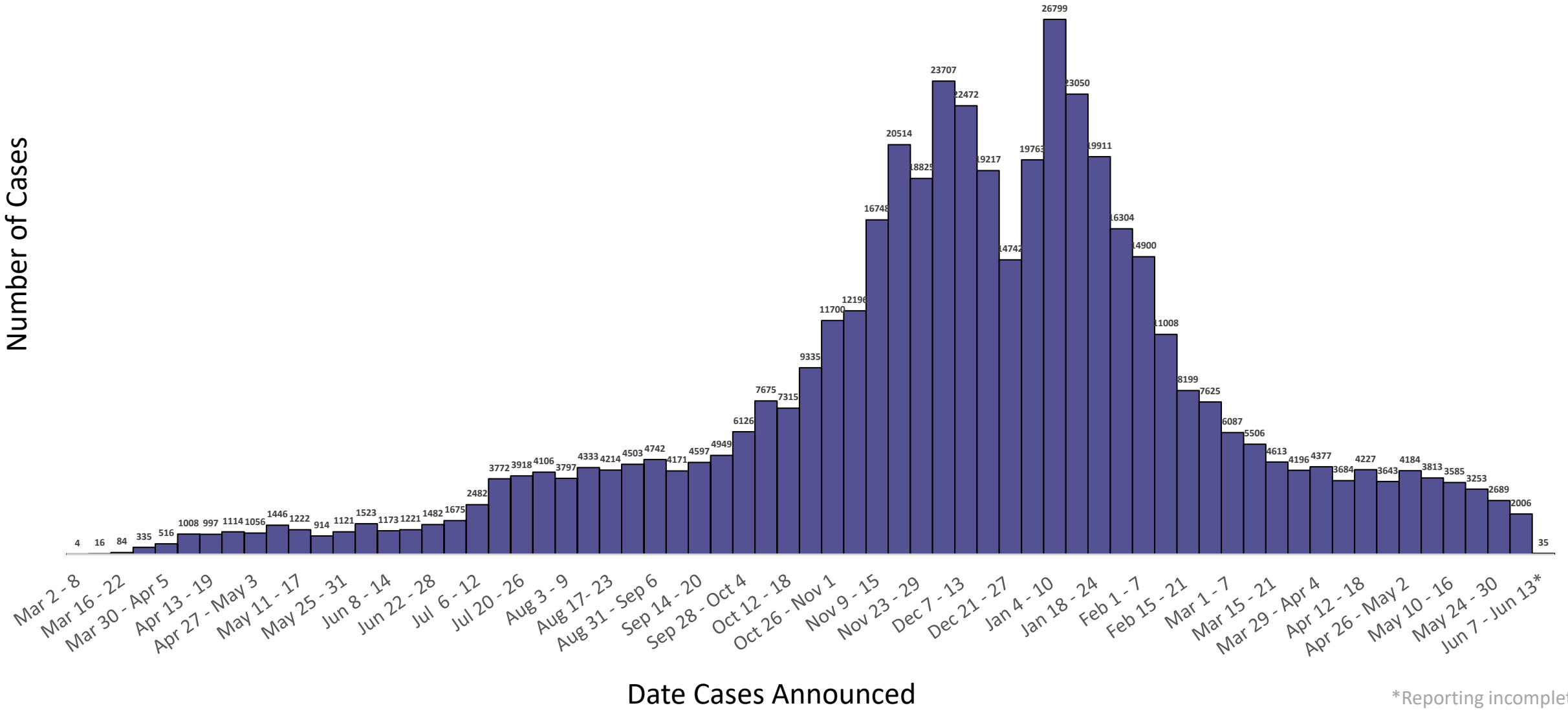
https://covid19.who.int/

Number of New COVID-19 Cases in the U.S., by Date Reported



https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases

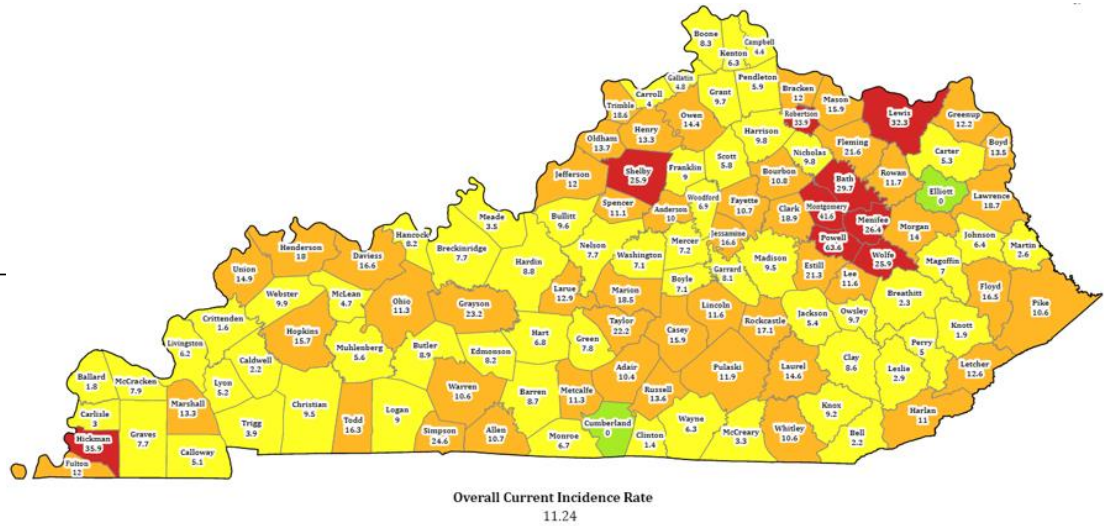
Kentucky COVID-19 New Cases by Week (n = 460,520)



*Reporting incomplete for current week

Last Updated June 7, 2021

7-Day Average Daily Incidence Rate By County – 6/7 vs 5/7



COVID-19 Current Incidence Rate in Kentucky

Date of Report: 6/7/2021 (4:09 PM)

Average Daily Cases per 100K population

(based on previous seven days)

- On Track (< 1 per 100K)
- Community Spread (> 1 - 10 per 100K)
- Accelerated (> 10 - 25 per 100K)
- Critical (25+ per 100K)

Boone 2.1 · Campbell 1.2 · Kenton 2.1 · Gallatin 4.8 · Carroll 6.7 · Grant 7.4 · Pendleton 0 · Bracken 1.7 · Trimble 5.1 · Owen 6.6 · Robertson 0 · Mason 7.5 · Lewis 0 · Greenup 3.7 · Henry 1.8 · Harrison 1.5 · Oldham 0.9 · Fleming 2.9 · Boyd 2.8 · Nicholas 2 · Carter 3.2 · Jefferson 2.7 · Shelby 2 · Franklin 5 · Scott 4 · Bourbon 3.6 · Rowan 1.8 · Bath 3.4 · Elliott 1.9 · Lawrence 1.9 · Spencer 4.4 · Woodford 2.1 · Anderson 3.1 · Fayette 3.4 · Montgomery 5.6 · Clark 4.3 · Menifee 8.8 · Morgan 8.6 · Johnson 1.9 · Martin 12.8 · Meade 2.5 · Bullitt 2.4 · Hancock 0 · Henderson 4.1 · Daviess 2.7 · Breckinridge 4.2 · Nelson 2.8 · Mercer 7.8 · Jessamine 2.6 · Powell 4.6 · Wolfe 2 · Magoffin 0 · Union 10.9 · Hardin 4.5 · Washington 0 · Madison 5.2 · Estill 7.1 · Floyd 6.8 · Pike 2 · Webster 15.5 · McLean 7.8 · Ohio 3.6 · Grayson 1.6 · Larue 4 · Marion 4.4 · Boyle 4.8 · Garrard 1.6 · Lee 3.9 · Breathitt 1.1 · Crittenden 1.6 · Lincoln 6.4 · Jackson 3.2 · Owsley 3.2 · Rockcastle 12.8 · Knott 0 · Livingston 1.6 · Hopkins 5.1 · Muhlenberg 11.2 · Butler 3.3 · Hart 3.8 · Taylor 7.8 · Casey 6.2 · Edmonson 1.2 · Green 5.2 · Perry 7.2 · Caldwell 1.1 · Adair 9.7 · Pulaski 3.7 · Laurel 9.6 · Clay 5.7 · Leslie 4.3 · Letcher 2 · Ballard 3.6 · McCracken 1.7 · Lyon 0 · Warren 3.7 · Barren 1.6 · Metcalfe 4.3 · Russell 4 · Knox 6.9 · Harlan 4.9 · Marshall 3.2 · Christian 2.8 · Todd 8.1 · Logan 2.1 · Carlisle 0 · Graves 8.4 · Trigg 2 · Simpson 0.8 · Allen 4 · Monroe 0 · Cumberland 2.2 · Clinton 0 · Wayne 0.7 · McCreary 0 · Whitley 6.3 · Bell 6 · Hickman 6.5 · Calloway 4 · Fulton 2.4

Overall Current Incidence Rate

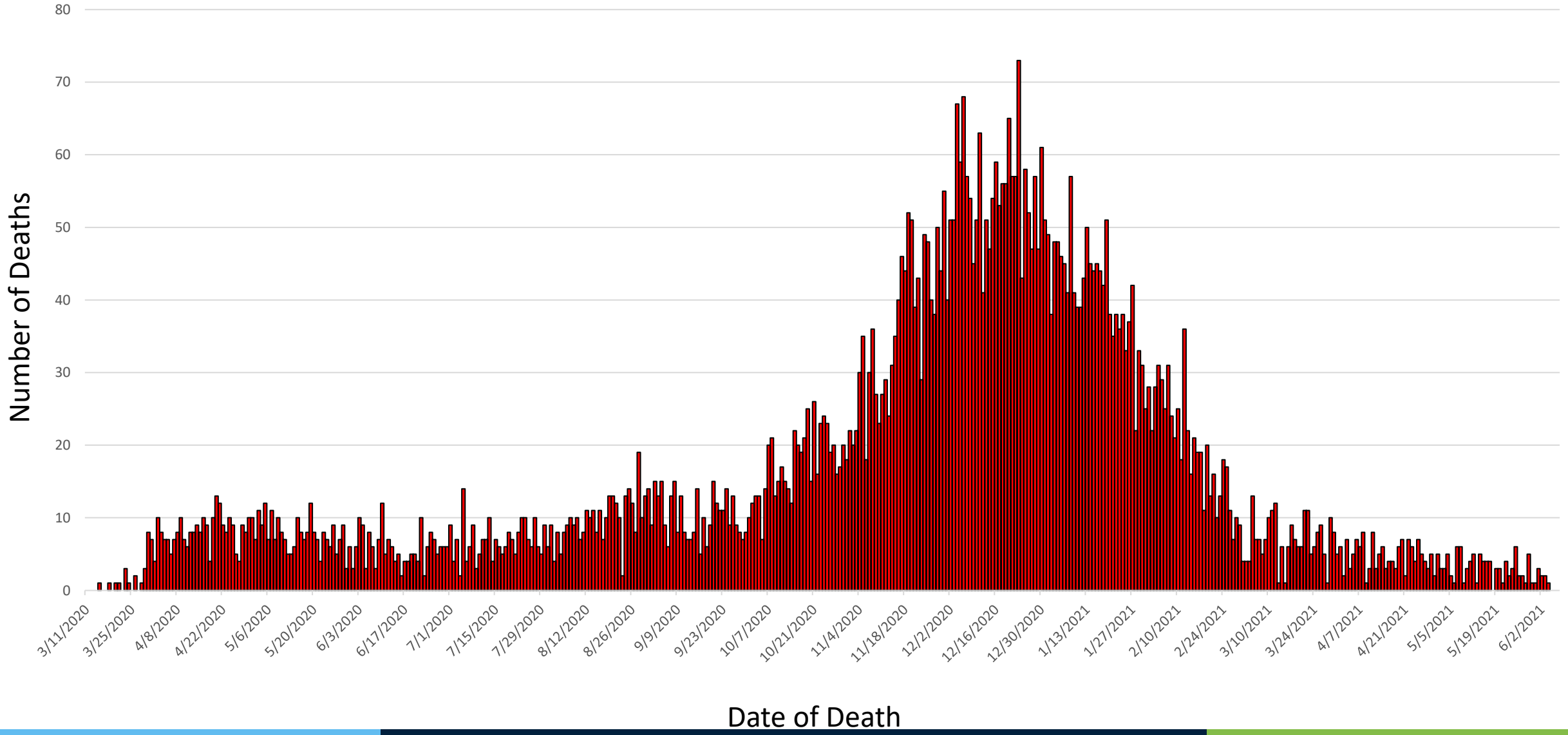
3.57

Population values from the 2019 US Census Bureau Estimates

Total number of cases used in the calculations: 460,511 Cases

Data Source: Kentucky Department for Public Health

Kentucky COVID-19 Deaths by Reported Date of Death (n = 7,103)



Last Updated June 7, 2021

Congregate Care Impact

46,707 Cases* **(10.1%)**
associated with congregate settings

524 Facilities
with at least one case

409 LTCFs
115 Other Congregate*

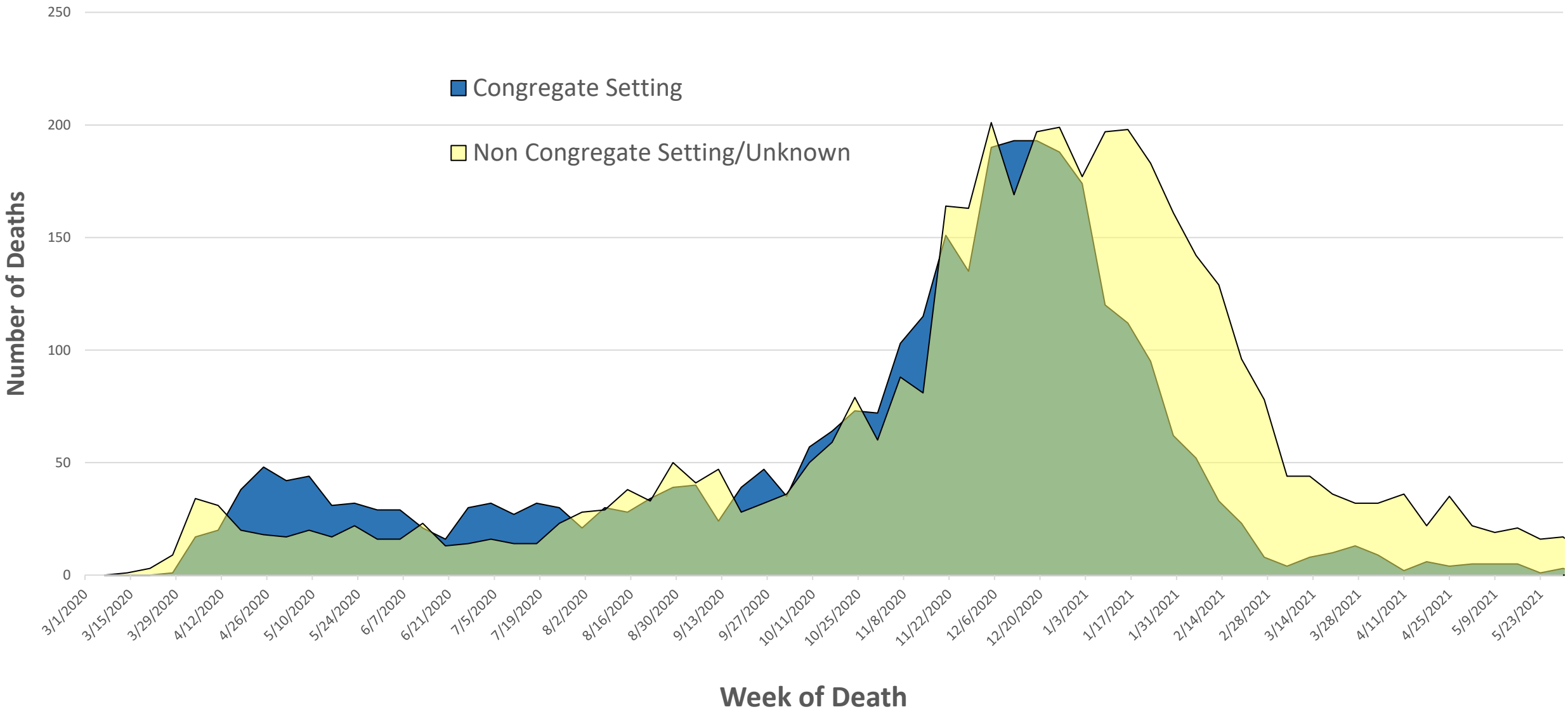
Residents: **30,762** cases, **2,382** deaths+
Staff: **15,945** cases, **21** deaths

2,403 Deaths* **(33.8%)**
associated with congregate settings

***Other Congregate Facilities might include:**
Group Homes, Residential Treatment Facilities, Inpatient Psychiatric Hospitals and Correctional Facilities

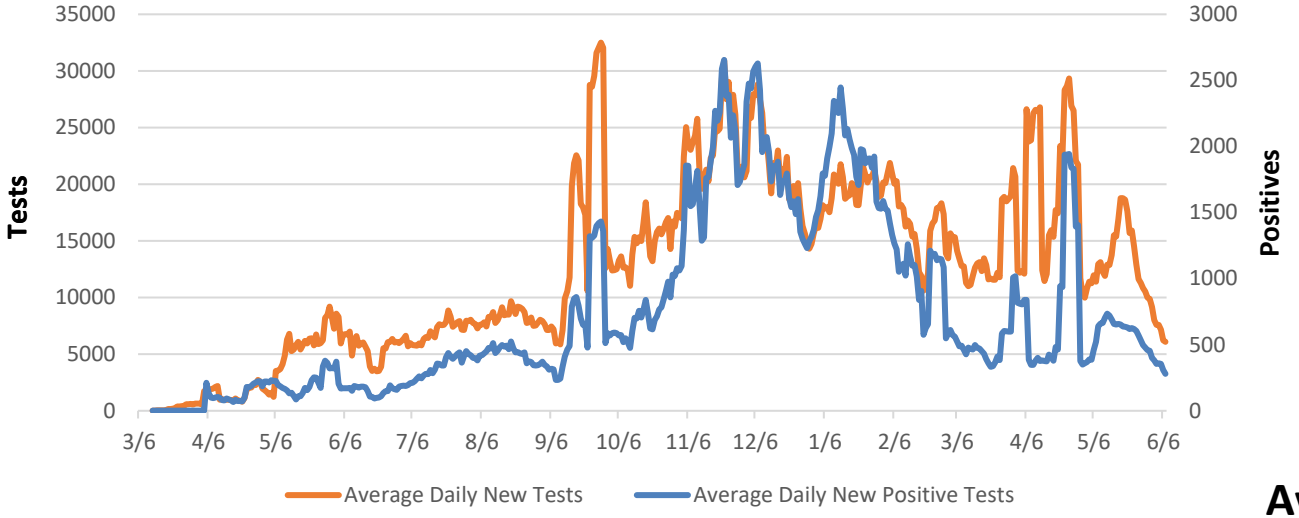
* Congregate setting cases and deaths are reported directly from congregate facilities and may not be confirmed cases or deaths in DPH data at this time
Last updated 6/7/2021

Deaths by Week and Congregate Setting vs Non-Congregate setting



Total Positive Tests vs. Total Tests by Day

(7-day rolling averages)



Average Positivity Rate – June 7, 2021

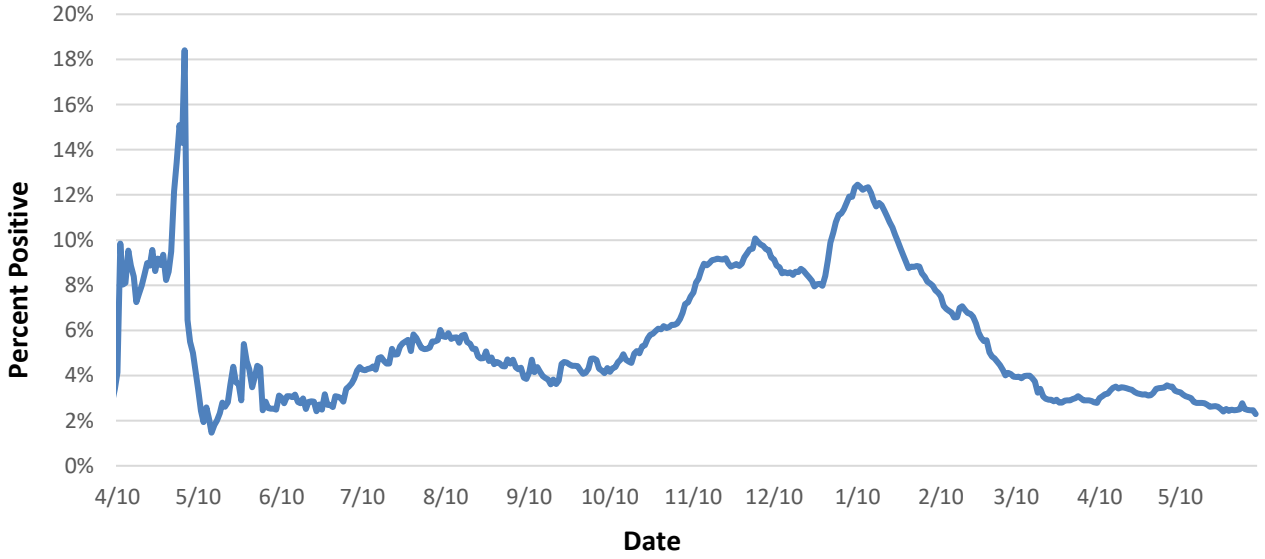
(Average of last 7 days)

2.28%

Average Positivity Rate by Date

Total ELR* Positive PCR† Tests/Total ELR* PCR† Tests by Day

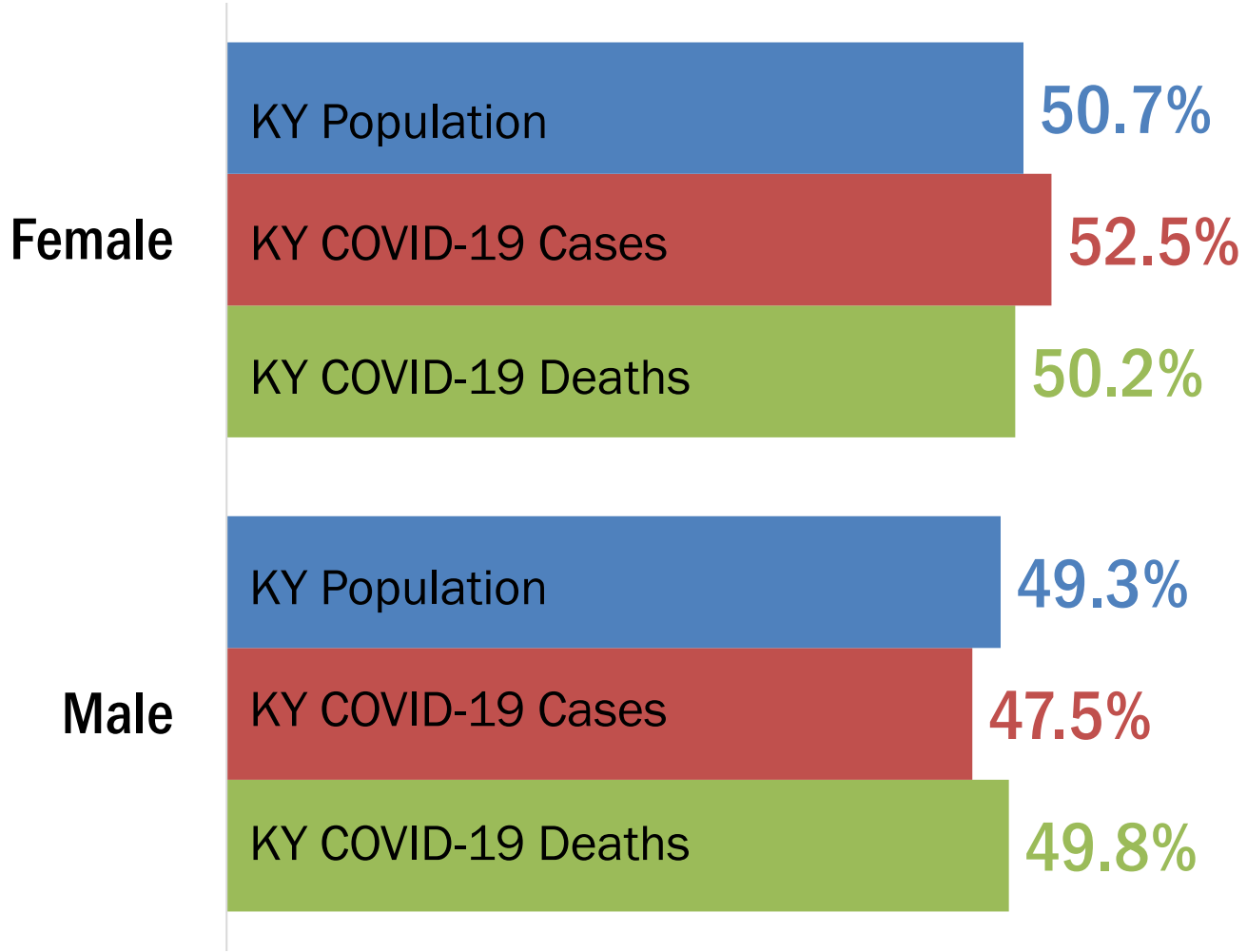
(7-day rolling average)



*Electronic Lab Report

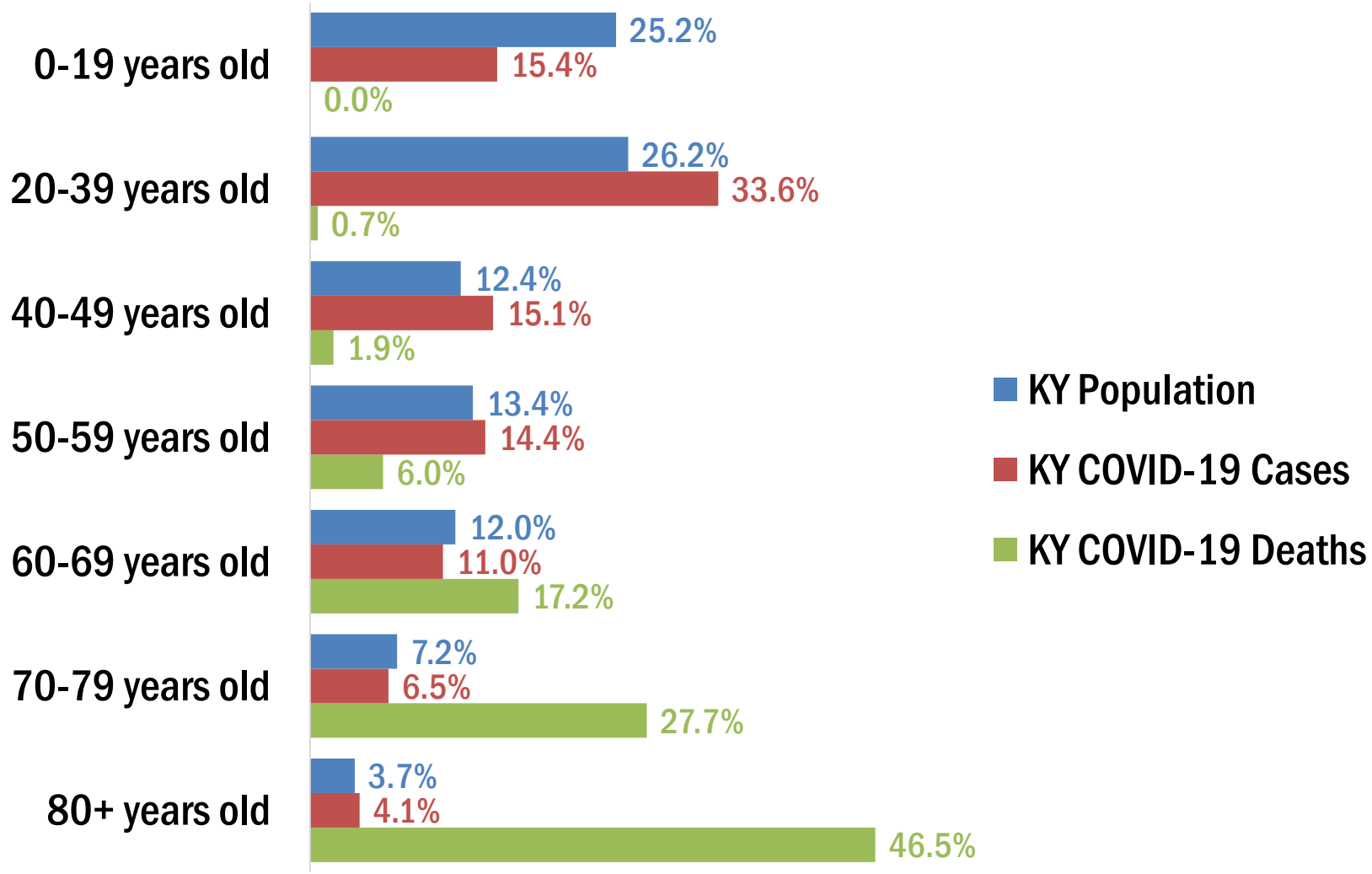
†Polymerase Chain Reaction molecular test

Distribution of Sex by KY Population, COVID-19 Cases, and COVID-19 Deaths



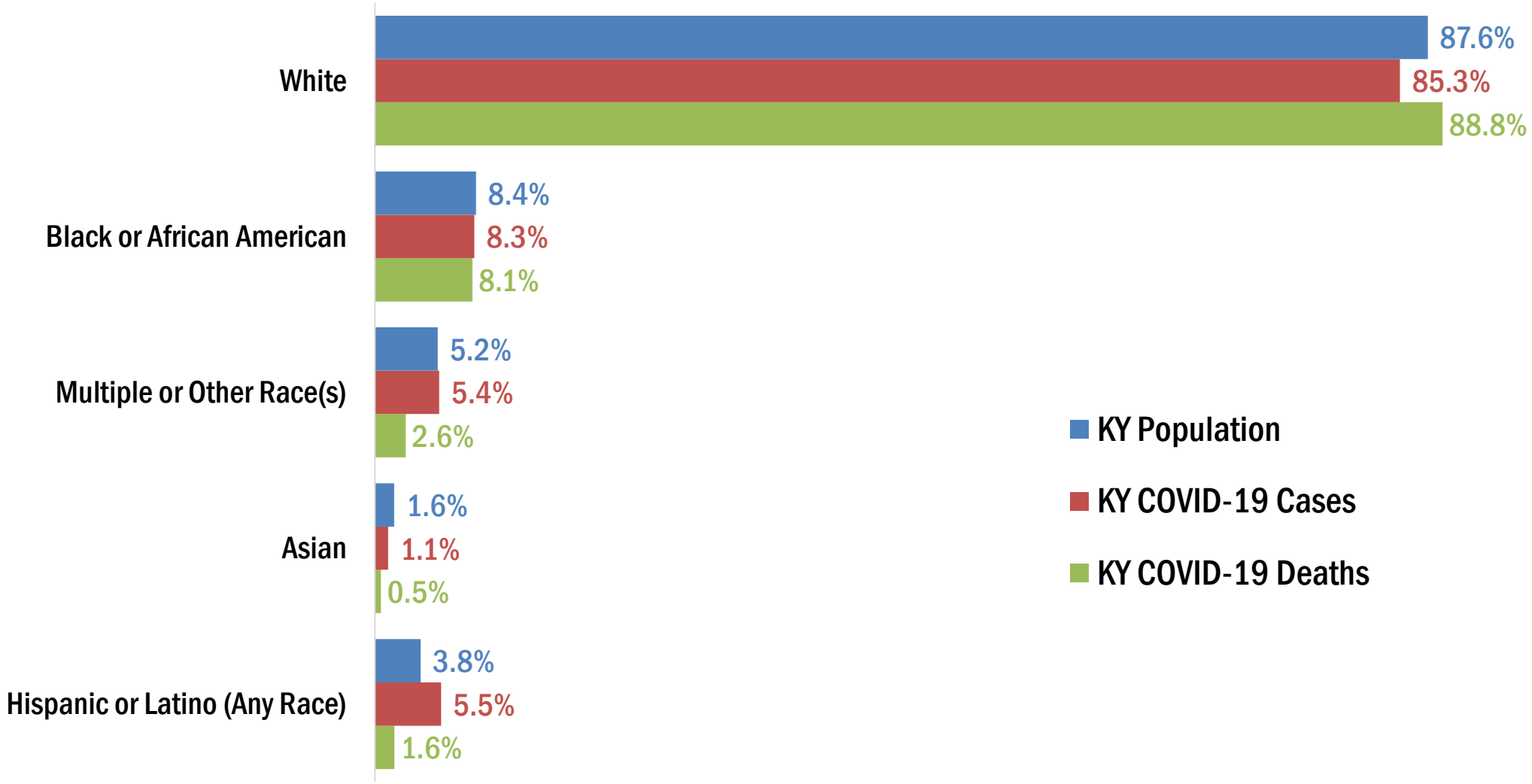
5,282 COVID-19 cases with missing/unknown sex (1.1%)
Updated June 7, 2021

Distribution of Race/Ethnicity by KY Population, COVID-19 Cases, and COVID-19 Deaths



229 COVID-19 cases with missing/unknown age (<0.1%)
Updated June 7, 2021

Distribution of Age by KY Population, COVID-19 Cases, and COVID-19 Deaths



Excluding COVID-19 cases & deaths with missing/unknown race (n=72,438 & 323) and ethnicity (n=92,311 & 571)
Updated June 7, 2021

Current Situation in Kentucky[1]

Case Patient Characteristics (N=460,520)

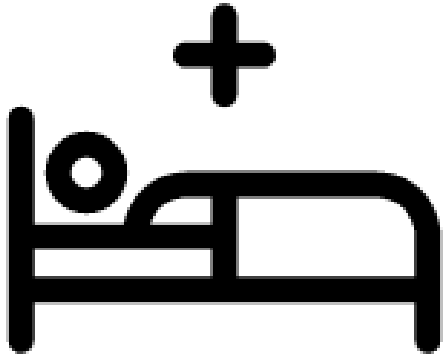
At least

26,548 (5.8%)

Report being a healthcare worker

23,190 (5.0%)

Ever hospitalized



4,717 (1.0%)

Ever ICU

438,234 (95.2%)

Recovered*

[1]Kentucky Department for Public Health

*"Recovered" is now calculated using "Known recovered," as marked in NEDSS, plus "Assumed Recovered," as defined by an algorithm taking into account infection and hospitalization status

Variant Strain Update

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Variants Circulating in Kentucky

- Variants of Concern (VOC)
  - 942 cases from 5 lineages
  - B.1.1.7 accounts for 90.6% of VOC identified in KY residents – UK strain
    - Higher transmission
    - Potential increased severity – but not seeing in U.S.
    - No impact on susceptibility to therapies
  - P.1 accounts for 4.6% - Brazil/Japan strain
    - Reduced susceptibility to monoclonal antibody and convalescent serum tx
  - All covered equally well by vaccination
- Variants of Interest (VOI)
  - KY has identified 113 VOI representing all VOI strains classified by CDC
  - B.1.526 strains predominant – 42% of VOI seen in KY – NY strain

False Positive Interpretation

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Evaluation of False Positive NAAT

- Nucleic Acid Amplification Tests (e.g., RT-PCR) – Gold Standard for laboratory diagnosis of acute infection with SARS-CoV-2 (COVID-19 disease)
- High sensitivity and specificity, but false positive results do occur
  - Especially when testing populations with low infection rates
  - BUT – asymptomatic and pre-symptomatic can still transmit virus
- Anyone with a positive NAAT should be considered a positive case
  - Isolate pending investigation
  - Contacts quarantine, if indicated
- Being classified as a case can have substantial impact to case and contacts
- Determination of validity of test is warranted when sufficient reason exists to question the result
  - No symptoms AND
  - No known or likely exposure

Recommended Process to Determine Validity

- Collect appropriate specimen for repeat NAAT within 48 hours of original specimen collection – preferably 24 hours
- If first repeat NAAT is negative, collect additional upper respiratory specimen at least 8 hours after the original specimen
  - Some delay before obtaining the second specimen will increase likelihood of a positive result if patient is in early stages of infection by allowing for additional viral replication
  - 2nd specimen should be collected within 5 days of original positive specimen
- If both repeat NAAT's are negative AND no symptoms have developed
  - Original result can be considered false positive
  - A recent negative NAAT prior to the positive test would provide additional support that the positive was a false positive
  - A follow-up antigen test is not a substitute for a NAAT to determine false positive

At-Home Testing

- Becoming more prevalent – multiple commercial kits available
- Results reportable to KDPH IF:
  - Specimen collection is proctored or tele-proctored
  - Test is prescribed/ordered by clinician and you can verify that it was performed correctly
- If not submitted to a laboratory, ordering provider should submit any positive results via COVID-19 Case Report Form with Lab Report
- If patient reports a positive test result:
  - Educate about isolation – 10 days from onset
  - Educate about quarantine for close contacts
    - 7 days with negative test after day 5 and no symptoms
    - 10 days if remaining asymptomatic
    - 14 day options recommended, particularly if in contact with unvaccinated or high-risk people

COVID-19 Vaccine Update

Amy Herrington, DNP, RN, CEN, CNE

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Pfizer-BioNTech COVID-19 Vaccine Changes

- On Wednesday, May 12th, 2021, the Advisory Committee on Immunization Practices (ACIP) recommended Pfizer-BioNTech COVID-19 vaccine for persons 12-15 years of age in the U.S. population under the FDA's Emergency Use Authorization: Pfizer-BioNTech Emergency Authorization Use

Why are the Changes Important?

- Based upon the Clinical Outreach and Communication Activity (COCA) provided by the CDC on Friday, May 14th, 2021:
  - In the 12-17 age group, there were over 1.5 million reported cases and >13,000 hospitalizations to date
  - Clinical presentation of MIS-C more severe in adolescents than in younger children
  - Among parents surveyed, 46-61% plan to get their children vaccinated

Pfizer-BioNTech COVID-19 Vaccine Changes

- On May 20, 2021, the FDA authorized undiluted, thawed Pfizer-BioNTech COVID-19 Vaccine vials to be stored in the refrigerator at 2°C to 8°C (35°F to 46°F) for up to 1 month.
  - Previously, thawed, undiluted vaccine vials could be stored in refrigerator for only up to 5 days.
- This makes storage and utilization of vaccine easier for all providers but especially smaller healthcare organizations

Myocarditis

- On May 27th, 2021 the CDC released information and guidance for clinicians related to reported cases of myocarditis and pericarditis following mRNA vaccines (Pfizer and Moderna).
  - In most cases, patients who presented for medical care have responded well to medications and rest with prompt improvement of symptoms.
  - Reported cases have occurred predominantly in male adolescents and young adults 16 years of age and older.
  - Onset was typically within several days after mRNA COVID-19 vaccination, and cases have occurred more often after the second dose than the first dose.

Myocarditis Clinical Considerations

- Report all cases of myocarditis and pericarditis post COVID-19 vaccination to VAERS.
  - Consider myocarditis and pericarditis in adolescents or young adults with *acute chest pain, shortness of breath, or palpitations*.
    - Ask about prior COVID-19 vaccination if you identify these symptoms, as well as relevant other medical, travel, and social history.
  - For initial evaluation, consider an ECG, troponin level, and inflammatory markers such as C-reactive protein and erythrocyte sedimentation rate.
    - In the setting of normal ECG, troponin, and inflammatory markers, myocarditis or pericarditis are unlikely.

Myocarditis Clinical Considerations

- For patients with myocarditis, consult the recommendations from the American Heart Association and the American College of Cardiology.
- It is important to rule out other potential causes of myocarditis and pericarditis.
  - Consider consultation with infectious disease and/or rheumatology to assist in this evaluation.
  - Where available, evaluate for potential etiologies of myocarditis and pericarditis,
    - particularly acute COVID-19 infection (e.g., PCR testing),
    - prior SARS-CoV-2 infection (e.g., detection of SARS-CoV-2 nucleocapsid antibodies), and
    - other viral etiologies (e.g., enterovirus PCR and comprehensive respiratory viral pathogen testing).
- Parent/public information has been created and can be used to address any questions you may receive

Vaccination

- CDC continues to recommend COVID-19 vaccination for everyone 12 years and older given the greater risk of other serious complications related to COVID-19, such as hospitalization, multisystem inflammatory syndrome in children (MIS-C), or death.

Vulnerable Populations

- As we work to increase the numbers of vaccinated individuals, we have increased our focus on making sure our vulnerable populations have been vaccinated and are being vaccinated. Nationally, as eligibility increased, disparities increased
  - On May 28th, 2021 the CDC released guidance on vaccinating migrant/migratory and seasonal workers which includes a 10-step guide.
  - The guide is intended to help jurisdictions identify and quantify sub-populations of workers and create a specific plan to arrange locations, providers, and supplies for vaccinations

Vulnerable Populations in Kentucky

- Initiatives
  - Community partners and healthcare insurers are offering incentives
  - Increasing mobile and door to door vaccination
  - Health care providers are providing vaccines in the schools
  - Working to develop partnerships to increase vaccinations in
    - Outpatient clinics
    - Emergency departments
    - Upon discharge from the hospital

Your Message is Important

- As health care providers are the most trusted professionals, the patient listens to you
  - Recommend vaccinations for your patients
  - Share your personal story
  - If you don't offer COVID vaccinations, help your patient schedule an appointment.
    - Many patients do not have access to the internet or the knowledge to use the internet
  - If you want to offer COVID vaccinations, we can support you

Breakthrough Infections

Alyson Cavanaugh, PhD

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Breakthrough Infections

- **Positive test ≥14 days after final vaccine dose**

Breakthrough Cases in Kentucky

- **Unique Persons Vaccinated: 2,074,092**
- **Breakthrough cases: 1,523**

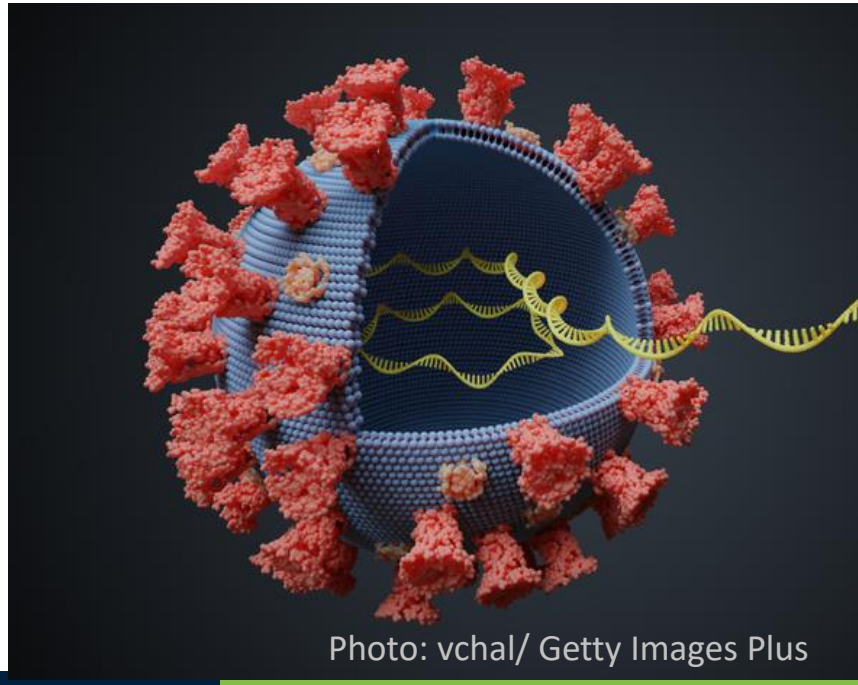

Photo: vchal/ Getty Images Plus

Reinfections

Alyson Cavanaugh, PhD

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Recurrent COVID-19 cases* in Kentucky

- N=2,537
- Age (Avg): 48.2 years (Range: 2-102 years)
- Sex: 60.2% female, 39.8% male

*Individuals with two positive tests (PCR or antigen) collected >90 days apart

Clinical and Public Health Considerations

Take Public Health Action for all repeat positive tests >90 days

- Isolation of infected person
- Quarantine of close contacts
- Proper PPE for HCW
- CDC/KDPH Case Report Form

All persons, regardless of past COVID-19 should be offered vaccination

Pregnancy and COVID-19

Connie White, MD, MS, FACOG

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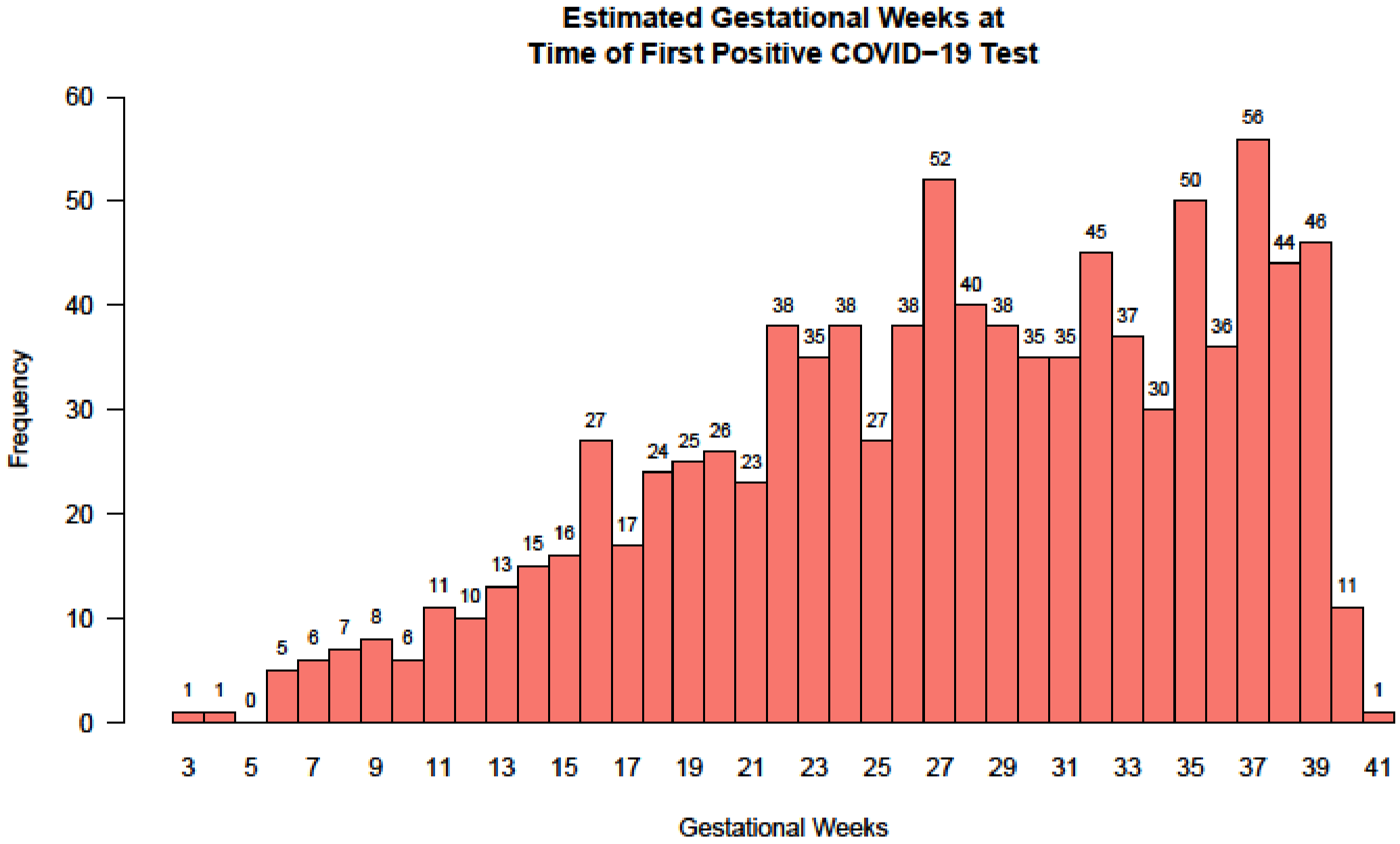
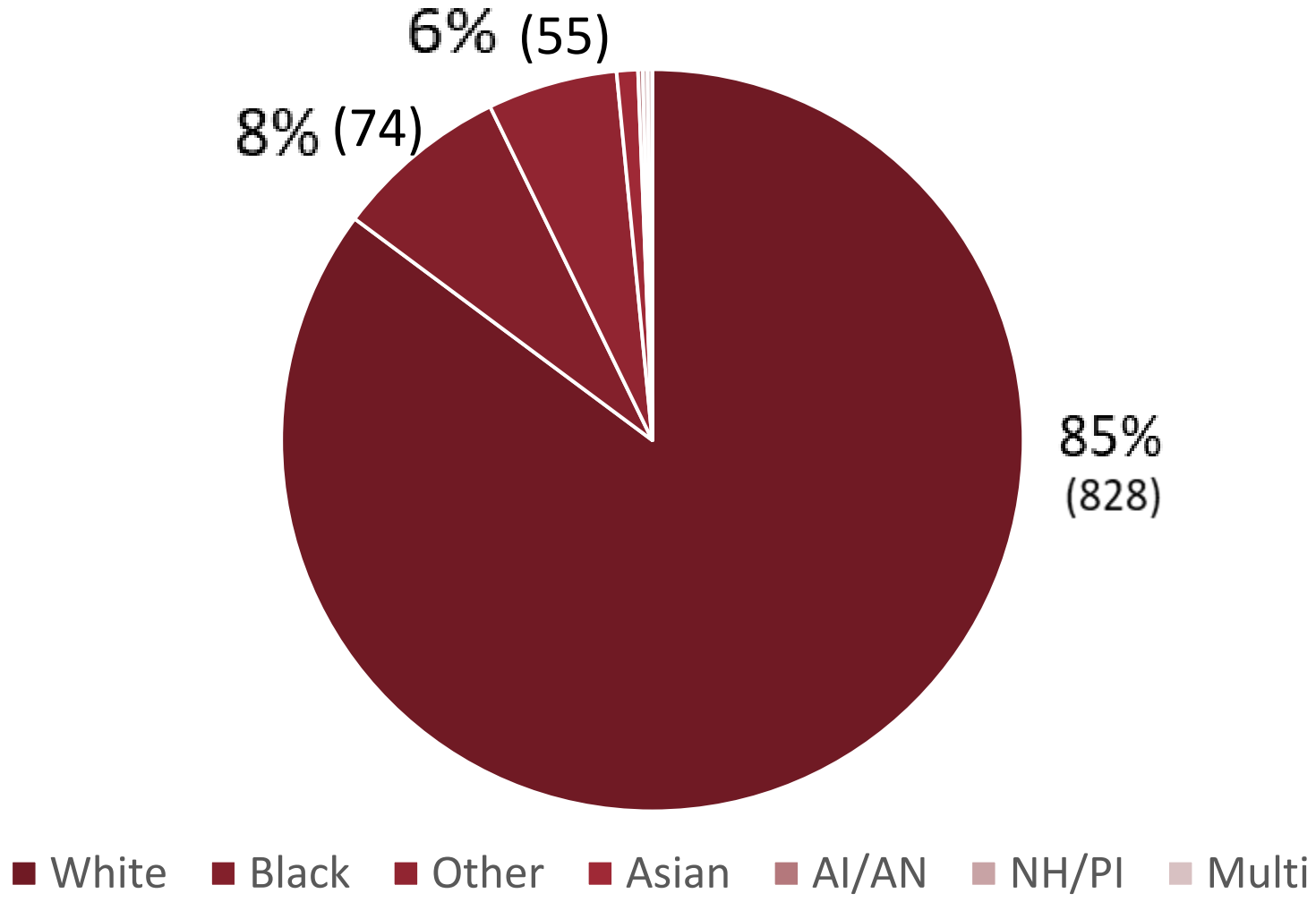
Kentucky Deliveries from March 2020 – May 2021

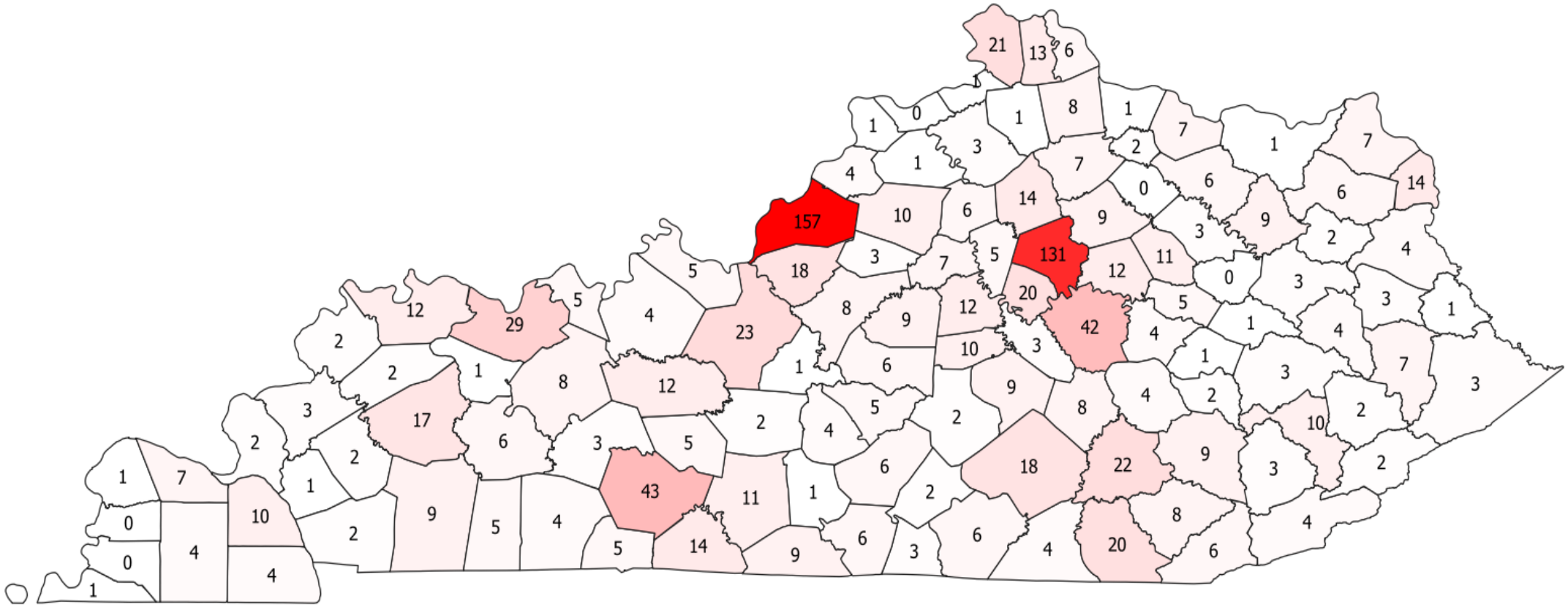
Patients with positive COVID-19 testing	1,039
Median age	28
Alcohol Use	0
Tobacco Use	8% (86)
Previous Preterm Birth	4% (40)
Hypertension Prepregnancy	4% (42)
Hypertension Gestational	13% (130)
ICU Admissions	0.8% (8)
Transfusion (5), Unplanned Hysterectomy (1), Unplanned OR procedure following Delivery (3) – all were $\leq$ 0.5%	


Estimated Gestational Weeks at
Time of First Positive COVID−19 Test
Frequency
0
10
20
30
40
50
60
1 1 0 5 6 7 8 6 11 10 13 15 16 27 17 24 25 26 23 38 35 38 27 38 52 40 38 35 35 45 37 30 50 36 56 44 46 11 1
3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41
Gestational Weeks

Race of COVID-19 pregnant patients

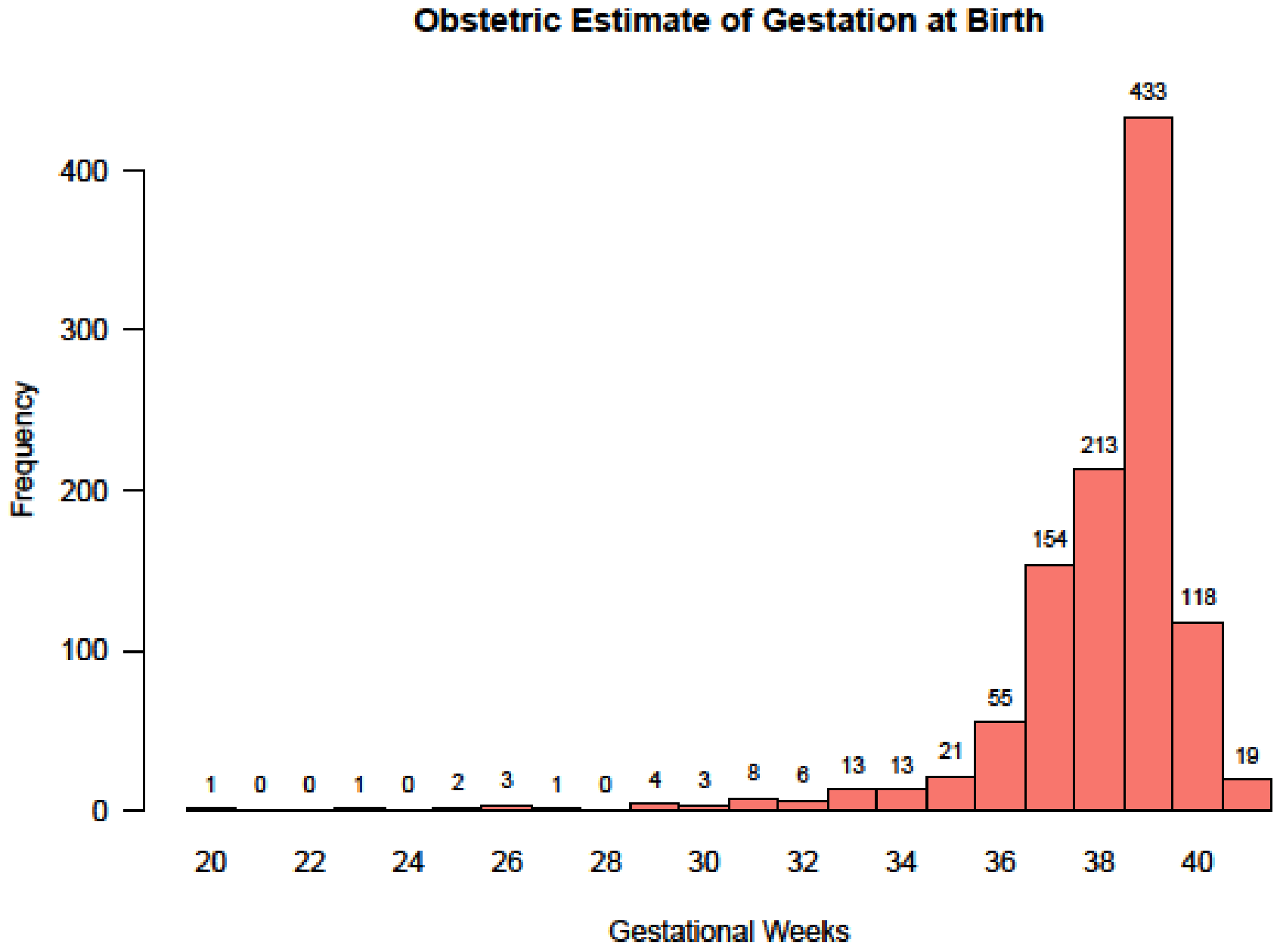


Counties of Residence



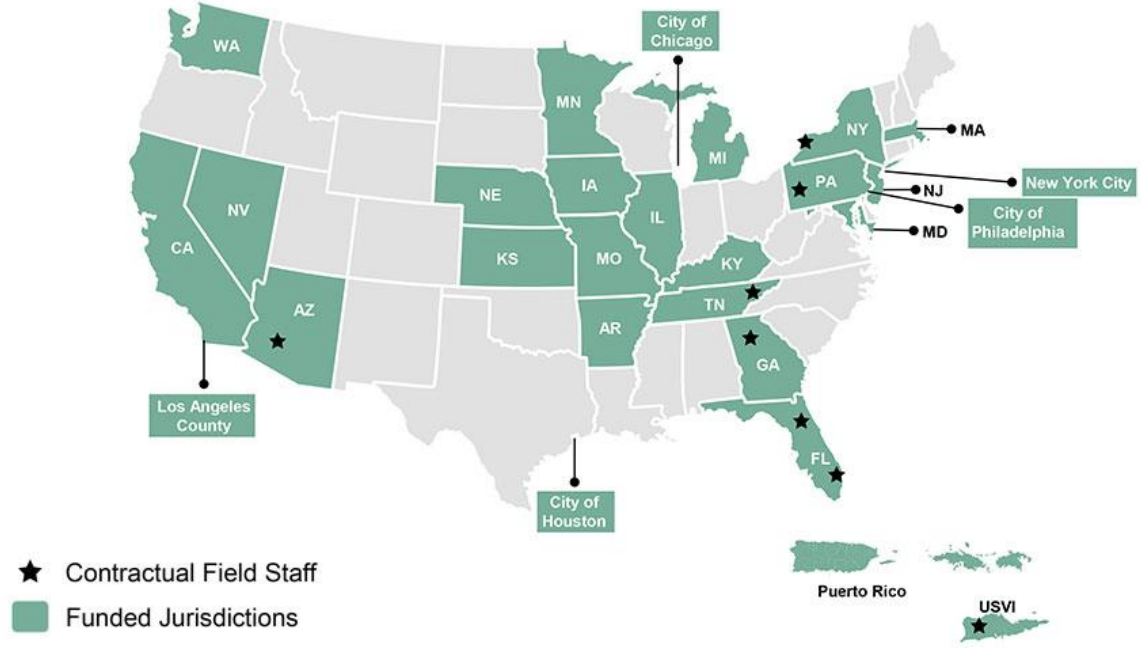
Method of Delivery

	Percent (number)
Vaginal/Spontaneous	59% (611)
Vaginal/Vacuum	3% (30)
Vaginal/Forceps	1% (6)
Cesarean with TOL	11% (114)
Cesarean without TOL	26% (275)


Obstetric Estimate of Gestation at Birth
Frequency
0
100
200
300
400
1
0
0
1
0
2
3
1
0
4
3
8
6
13
13
21
55
154
213
433
118
19
20
22
24
26
28
30
32
34
36
38
40
Gestational Weeks

Important Data to Capture

- Trimester of COVID-19 Diagnosis
- COVID-19 symptomology and associated morbidity
- Comorbidities (i.e. gestational diabetes, hypertension, etc.)
- Hospitalization information
- Insurance status
- Pregnancy outcome
- Birth outcome



Health Alert Network Notification: *Candida auris*

June 8, 2021

Michael J Curran BSN, RN, NHDP-BC

Healthcare-associated Infection/Antibiotic Resistance (HAI/AR) Reduction Program

Kentucky Public Health

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Candida auris – Kentucky, 2021

- May 2021
  - First case of *Candida auris* (*C. auris*) identified in a clinical specimen at a Kentucky (KY) healthcare facility
  - Additional cases of *C. auris* identified with surveillance swabs at facility
  - Facility has been in consultation with the Kentucky Department for Public Health (KDPH) Healthcare-associated Infections/Antibiotic Resistance (HAI/AR) Program and is following all recommendations

Candida auris

- Emerging pathogenic yeast that can cause invasive infections
- Invasive infections have been associated with 30-60% mortality among hospitalized patients
- Urgent public health threat according to the 2019 CDC AR Threats Report
  - Potential for multi-drug resistance
  - Ability to spread in healthcare settings
  - Rapid appearance in many parts of the United States
- Early detection and communication are essential

Candida auris – Asymptomatic Colonization

- Asymptomatic colonization with *C. auris* is possible
  - Typically, in patients admitted with another serious illness or condition
  - Serious risk factors
    - Mechanical ventilation
    - Tracheostomy
    - Invasive medical devices
    - Frequent healthcare encounters
  - Persistence in the environment and prolonged skin colonization enables it to spread within healthcare facilities
  - CDC recommends consultation with an infectious disease physician for patients with *C. auris* infections

Candida auris – Infection Prevention and Control

- Strict adherence to infection control activities is effective to control the spread of *C. auris*
- Correct environmental cleaning and disinfection is critical
  - Some disinfectants commonly used in healthcare settings not effective against *C. auris*
  - https://www.epa.gov/pesticide-registration/list-p-antimicrobial-products-registered-epa-claims-against-candida-auris
- CDC guidance on infection control activities
  - https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html

Candida auris – Public Health Reporting

- If a case of *C. auris* is identified in a healthcare facility
  - Priority reporting is **required** within one (1) business day with both
    - **EPID-250** and
    - **Electronic laboratory reporting** to KDPH through the Kentucky Health Information Exchange (**KHIE**)
  - Submission of all confirmed *C. auris* isolates to the Kentucky Division of Laboratory Services (DLS) for further characterization is **required**
  - **Any identification of *C. auris* should be called to the HAI/AR team directly ASAP**

Candida auris - Screening

- KDPH recommends ALL healthcare facilities in Kentucky consider screening patients (axilla/groins swab) for *C. auris* who meet any of the following criteria:
  - Residents of southern or central Indiana with extended healthcare stays
  - Patients hospitalized outside the United States within the preceding 12 months
  - Patients presenting from long-term acute care facilities, skilled nursing facilities, or rehabilitations facilities who meet the following:
    - History of multi-drug resistant organisms (MDROs)
    - History of mechanical ventilation or tracheostomy
    - Chronic or unhealing wounds

Candida auris – Laboratory Identification

- *C. auris* can be difficult to identify with standard laboratory testing
- *C. auris* can be misidentified as other yeasts when using common microbiological methods
- No phenotypic characteristics easily distinguish *C. auris* from other *Candida* species
- Most reliable way to identify *C. auris* is MALDI-TOF MS
- https://www.cdc.gov/fungal/candida-auris/identification.html

Candida auris – HAI/AR Contacts

- For epidemiological information or questions, please contact:
  - Andrea Flinchum MPH, BSN, RN, CIC, FAPIC HAI/AR Prevention Program Manager andrea.flinchum@ky.gov (502) 564-3261 ex. 4248
  - Kevin Spicer MD, PhD, MPH Medical Officer, CDC, AR Coordinator kevin.spicer@ky.gov (502) 564-3261 ex. 4468
  - Michael Curran BSN, RN, EMT-P, NHDP-BC Infection Control Nurse michael.curran@ky.gov (502) 564-3261 ex. 4249
  - Chad Eldridge BSN, RN Infection Control Nurse chad.eldridge@ky.gov (502) 564-3261 ex. 4251

Candida auris – Laboratory Contact

- For laboratory services questions, please contact:
  - Rachel A. Zinner Microbiology Branch Manager, Kentucky Division of Laboratory Services rachel.zinner@ky.gov (502) 782-7754

New Reportable Diseases

Doug Thoroughman, PhD, MS

Kentucky Public Health
Prevent. Promote. Protect.

Reportable Disease Regulation

- The Reportable Disease Regulation was updated December 2020
- Among other changes and updates: *Cyclospora*, *Giardia* and *Legionella* are now reportable within 1 business day
- Submit EPID 200 AND lab report for each case to the local health department in the case patient's county of residence
- Signs and symptoms of *Cyclospora* and *Giardia* must be reported on the EPID 200 form to meet case definition
  - Without signs and symptoms, we are unable to adequately perform surveillance and accurately quantify disease burden

Ebola Traveler Monitoring

Doug Thoroughman, PhD, MS

Kentucky Public Health
Prevent. Promote. Protect.

Ebola Situation Update

- Outbreaks in both Democratic Republic of Congo and Guinea ended
- DRC
  - 12 cases (11 confirmed, 1 probable)
  - 6 deaths (50%)
  - Declared over May 3
- Guinea
  - 23 cases (16 confirmed, 7 probable)
  - 12 deaths (52%)
  - Declared over May 21
- Traveler monitoring of travelers in these countries has ended
- Travel question should ***always*** be considered in healthcare settings

Next KY COVID-19 Healthcare & Public Health Webinar

Date: July 27, 2021

Time: 11:30 am – 1:00 pm

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Question and Answer Time

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Thank you!

Bookmark your calendar for the next Kentucky COVID-19 Clinical/Public Health Update!

Date:

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