SARS-CoV-2 and COVID-19 Executive Digest
The University of Kansas Executive Daily COVID-19 Digest Working Group

DATE: June 6, 2021

This KU COVID-19 Executive Digest is authored and updated by Reem A. Mustafa and Tami Gurley-Calvez (lead authors), Daniel Parente, Mark Meyer, Joseph LeMaster, Erin Corriveau, Robert Moser, David Wild, Edward Ellerbeck, Laura Mussulman, Caitlin Smith, Christian Dodge, Jack Beal, Ian Thompson and Akinlolu Ojo.

Weekly Overview

- This digest updates every Tuesday to inform healthcare providers, hospitals leadership, policymakers and the public on issues related to the coronavirus pandemic.
- The Daily COVID-19 Digest includes information about:
  (A) Pandemic Status
  (B) Face Masks
  (C) Tracking, Anticipating Spread and Hospitalizations
  (D) Pharmacologic Treatment of COVID-19
  (E) Vaccine development
  (F) Relevant Government Actions
  (G) Other Relevant Developments
Key Highlights

- Reported new cases were lower across locations and hospitalizations remained fairly stable just under 20 per day on average.
- The most recent data shows a decrease in the proportion of hospitalizations from the age 65-74 age group and an increase in the age 55-64 age group.
- New Kansas hospital admissions provide some evidence that the proportion of admissions among the oldest age group is lower.
- At the national level, there is continued evidence of a decline in cases and hospitalizations with a slower downward trend in new deaths.
- Vaccine availability varies by county. Details about vaccine distribution can be found here.

A. Pandemic Status

Pandemic Status* (as of June 6, 2021)

<table>
<thead>
<tr>
<th>Location</th>
<th>Confirmed cases</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>The University of Kansas Health System**</td>
<td>15,078</td>
<td>290</td>
</tr>
<tr>
<td>Johnson county</td>
<td>59,305</td>
<td>769</td>
</tr>
<tr>
<td>Sedgwick county</td>
<td>57,457</td>
<td>775</td>
</tr>
<tr>
<td>Wyandotte county</td>
<td>20,752</td>
<td>299</td>
</tr>
<tr>
<td>Shawnee county</td>
<td>17,632</td>
<td>365</td>
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<tr>
<td>Douglas county</td>
<td>9,364</td>
<td>87</td>
</tr>
<tr>
<td>Reno county</td>
<td>8,570</td>
<td>139</td>
</tr>
<tr>
<td>Butler county</td>
<td>7,611</td>
<td>90</td>
</tr>
<tr>
<td>Leavenworth county</td>
<td>7,271</td>
<td>93</td>
</tr>
<tr>
<td>Riley county</td>
<td>6,595</td>
<td>43</td>
</tr>
<tr>
<td>Saline county</td>
<td>6,303</td>
<td>143</td>
</tr>
<tr>
<td>Finney county</td>
<td>6,103</td>
<td>74</td>
</tr>
<tr>
<td>Ford county</td>
<td>5,768</td>
<td>76</td>
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<tr>
<td>KS State</td>
<td>316,883</td>
<td>5,168</td>
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<tr>
<td>MO State</td>
<td>530,477</td>
<td>9,581</td>
</tr>
<tr>
<td>USA</td>
<td>33,800,201</td>
<td>606,492</td>
</tr>
<tr>
<td>Global</td>
<td>173,631,266</td>
<td>3,736,961</td>
</tr>
</tbody>
</table>

*KS counties with > 5000 cases, **TUKHS had a total of 3,022 hospital admissions

B. Face Masks, physical distancing, and vaccine updates

- Pfizer approved for young teens: On May 10, 2021, The Food and Drug Administration (FDA) expanded the emergency use authorization for Pfizer's COVID-19 vaccine to kids aged 12 to 15 years. Pfizer becomes the first COVID-19 vaccine in the United States that is authorized for emergency use in younger teens and adolescents. The FDA reviewed the safety and efficacy data submitted by Pfizer. The company concluded a clinical trial which involved 2,260 participants ages 12 through 15 years old, and the vaccine was 100% effective in preventing COVID-19.
• CDC stops monitoring all breakthrough infections: CDC decided this month to limit how they monitor vaccinated people who have been infected with COVID-19 and have been hospitalized or died. The CDC announced in a report that 0.01% of the 101 fully vaccinated Americans developed COVID-19. Twenty-seven percent of the breakthrough infections were asymptomatic, 10% were hospitalized and 2% died. The CDC noted this is likely an undercount due to tracking challenges.

The CDC also announced that while it will continue to evaluate vaccine effectiveness and collect information on all COVID-19 vaccine breakthrough infections, it is no longer monitoring all reported COVID-19 breakthrough infections. The CDC will only investigate breakthrough infections in patients who are hospitalized or die.

• Mask mandate expires in Johnson county: On April 29, 2021, the Johnson County Commissioners voted to let the county’s mask mandate expire after April 30 and replace it with a decision to “strongly recommend” masks in public spaces, and that residents get vaccinated, continue wearing masks and social distance to help slow the spread of COVID-19. However, they encouraged businesses, restaurants, schools and local cities to require that customers and employees wear masks and social distance.

C. Tracking, Anticipating Spread and Hospitalizations

Projected local spread: As of June 6, 2021 the updated predictions based on a variety of widely used models for COVID-19 pandemics suggest that:

• Surveillance of cases, hospitalizations, and deaths is essential to ensure accurate understanding of the current state of the pandemic and the effect of behavioral and policy effects on disease spread.

• COVID-19 related death is the most robustly reported data point but is a lagging indicator of about 4-6 weeks after any change in behavior. Hospitalizations are also lagging indicators of disease spread.
Green lines indicate actual events and blue lines indicate calculated events based on actual data of the number of cases. Estimates of hospital admissions (Kansas City metro area, Wichita metro area, and Kansas locations outside of the Kansas City and Wichita metro areas) and hospitalizations (all locations) are excluded because they are based on assumptions from new case estimates instead of actual data. The link between new cases and new hospital admissions is increasingly unclear. Detailed notes about graphs: Data accessed June 8, 2021 at https://github.com/nytimes/covid-19-data and at https://usafacts.org/visualizations/coronavirus-covid-19-spread-map/. The shape of the data driven prediction is determined by existing data from other states and
locations that are ahead of KS in regard to the pandemic. A major limitation of using this model is that we cannot forecast the effects of events (e.g. Memorial Day) that happen concurrently across locations.

D. Pharmacologic Treatment of COVID-19

- On April 21, 2021, the National Institutes of Health (NIH) recently updated their COVID-19 Treatment Guidelines. The COVID-19 treatment guidelines update included new sections of the guidelines and key updates to previous guidelines. The three new sections included recommendations for Outpatient management of acute COVID-19, the use of colchicine in nonhospitalized patients with COVID-19, and the use of fluvoxamine for the treatment of COVID-19.

In addition, updates on previous guidelines included therapeutic management of adults with COVID-19, overview of COVID-19 with a discussion on emerging information on SARS-CoV-2 variants, as well as guidelines on the use of anti-SARS-CoV-2 monoclonal antibodies, convalescent plasma, and interleukin-6 inhibitors.

- KU researchers are collaborating with leaders in guideline development around the world to summarize existing recommendations in a living recommendation map for COVID-19. Check the eCOVID19 RecMap.

E. Vaccine development and distribution

- Vaccine availability varies in different counties. Details about vaccine distribution can be found here. Vaccine distribution per KDHE data as June 6, 2021 are shown below.
F. Relevant legislative actions

G. Other Relevant Developments

Testing
- The CDC has released guidance on the use of antigen testing, with revisions made December 5, 2020 (see Graphic, below).

Update
This is a living document. Information in this document will need to be revised and updated in the near future. We will conduct ongoing reviews of the available evidence and continuously monitor the data to determine if information require modification. Based on the rapidly evolving nature of this pandemic, information will likely need to be updated daily. This document is not intended to establish clinical practice guidelines or the standard of care. Physicians should exercise their own clinical judgement in the care of individual patients.

References
Appendix 1

SARS-CoV-2 is spread via respiratory droplets from talking, coughing, sneezing, and close contact with symptomatic individuals. Procedures like surgery, endoscopy or bronchoscopy can also lead to aerosolization and subsequent airborne transmission.¹ Human-to-human transmission can occur from unknown infected persons (e.g. asymptomatic carriers or individuals with mild symptoms) as well as individuals with virus shedding during the pre-incubation period before symptoms develop.² Data related to the spread of SARS-CoV-2 in the early phase of the pandemic have confirmed that healthcare personnel are at higher risk of infection than the general population.³⁴ Several types of PPE are available and summarized below. The WHO has issued guidance on the use of PPE, following a three-pronged strategy: (1) minimize the need for PPE, (2) ensure PPE use is rational and appropriate, and (3) coordinate PPE supply chain management mechanisms.⁵ WHO has developed recommendations for PPE use.⁶ KUHS Infection Prevention has developed similar, parallel, recommendations.

Personal protective equipment (PPE) for health care personnel and patients in the hospital

PPE for healthcare personnel is needed to protect both individual providers and the healthcare system itself. Inadequate PPE supply may result in shortage of healthcare personnel due to infection and/or quarantine. Infected healthcare personnel may also act as a vector for transmission to patients. Hospitals and healthcare systems, including the University of Kansas Health System, face challenges in projecting PPE requirements and availability. Projections of future health system PPE use follow projections for total number of persons under investigation (PUIs) or contracts hospitalized, and ICU patients, emphasizing the urgency of reliable projections.

Information needed to make informed projections about the required PPE during the pandemic

- Reports of number of patients hospitalized, admitted to the ICU and requiring mechanical ventilation (available from data about hospitalized patients)
- Estimates of forecast of number of patients hospitalized, admitted to the ICU and requiring mechanical ventilation with best- and worst-estimate of when the peak will occur (best and worst-case scenarios)
- Historic utilization of PPE per isolated patient (available from data about hospitalized patients)
- PPE required per COVID-19 positive/suspected patient (available from data about hospitalized patients)
- Historical hospital market share, and projections of whether this is expected to remain stable throughout the course of COVID-19 surge
- Expected number and severity of cases in a specific hospital (both total and per week)
- Period of time that social distancing/community mitigation strategies must remain in place to manage the outbreak

Types of PPE

<table>
<thead>
<tr>
<th>PPE</th>
<th>Use</th>
<th>Pros and Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical or medical masks</td>
<td>- Droplet precautions- block large particles (&gt;5 μm)</td>
<td>- Widely available  - Does not require fit testing - Cannot be re-used</td>
</tr>
<tr>
<td>N95 mask respirator</td>
<td>- Filter at least 95% of aerosols (&lt;5 μm) and droplet-size (&gt;5μm) particles</td>
<td>- Requires fit testing - Can be used for an extended period and re-sterilized</td>
</tr>
<tr>
<td>Powered air-purifying Respirator (PAPRs)</td>
<td>- Provide high level protection from common airborne viruses that exceed N95 face masks</td>
<td>- Does not require fit testing - Provides head and neck protection - Can be re-used by the same healthcare provider</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Gloves</td>
<td></td>
<td>- Does not require fit testing - cannot be reused</td>
</tr>
<tr>
<td>Gowns</td>
<td></td>
<td>- Does not require fit testing</td>
</tr>
</tbody>
</table>