CSTE-CDC COVID-19 Core Epi Workgroup Meeting:

Date:	**Wednesday April 27, 2022**
Start/End Time:	1-2p

CSTE-CDC Core Epi COVID-19 WG Meeting Minutes

#	Topic	Items
1.	Introductions	• Open and Welcome – **Ben Chan (NH)** • Shorter call today (1-2p) due to a conflict

2.	Trends in Vaccine Impact and Breakthrough Surveillance by Vaccine Status	• Trends in Vaccine Impact and Breakthrough Surveillance by Vaccine Status – Ben Silk and Heather Scobie (CDC)
		• Impact of additional booster doses against breakthrough infections during Omicron
		• Currently there are 29 jurisdictions that routinely link surveillance and immunization data (67% of the total US population)
		  • Report COVID-19 cases and COVID-associated deaths, weekly rates, and incident rate ratios by vaccination status (unvaccinated versus fully vaccinated, with or without booster).
		  • Posted on the COVID-19 data tracker.
		• Unexpected recent trends have been noted in case rates by vaccination status with and without booster doses. These unexpected trends have been observed recently for cases, but not for deaths, and only recently with Omicron. Trends are: lower case rates among people with primary series only compared with rates among those with booster doses.
		• Potential sources of biases are being evaluated. There are multiple sources of biases that have changed over time, all with likely differences by age and vaccination status.
		  • Time since vaccination status
		  • Testing practices , e.g., increased use of at-home testing and decreased use of lab testing, especially for mild cases
		  • Previous infection, which increased following the omicron surge
		  • Adherence to NPIs, e.g., masking and social distancing
		• Continued expected trends in COVID-19 deaths by vaccination status: lower rates among people with booster doses than those with primary series only
		• VE against death of 93% during July – Dec 2021 to 89-90% during Jan-Feb 2022.
		• For severe illness (and deaths), we presume that these cases are more likely to be medically attended and therefore less likely to experience significant biases related to differential testing by vaccination status.
		• At-home test use more than tripled, increased from 6-20%, from the Delta to the Omicron period
		• Percentage of people with antibodies (anti-nucleocapsid) indicating past or resolving infection with SARS-CoV-2 recently published in the MMWR
		  • 33% of 65 and up
		  • 50-64: 50%
		  • 18-49: 64%
		  • 75% of 17 and below
		• There are likely biases related to trends in prior infection called ‘depletion of susceptibles bias’. A helpful manuscript on this bias is in the American Journal of Epidemiology by Rebecca Kahn et al. In this publication, they modeled *theoretical scenarios*. When VE against COVID-19 infection was high, impact was minimal. When VE is ‘leaky’ or lower against infection, the depletion of susceptibles bias is more significant. Link to publication is here: https://pubmed.ncbi.nlm.nih.gov/35081612/

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		• This paper shows nicely that there's an interaction of the biases including level of VE against infection that can lead to depletion of susceptibles bias. The publication suggested checking serology
		• Discussed possible solutions/approaches:
		  • Continue to analyze infections by vaccination status, but include a disclaimer about current sources of bias affecting interpretation. Readily feasible to do and transparent about unexpected trends. This can be implemented more rapidly, so there is not a misunderstanding of this data, and the protective nature of boosting.
		  • Focus on severe illness by vaccination status and discontinue reporting for cases transmission/infection given the many biases. This would be consistent with overall shifting of COVID-19 strategies to focus on severe illness surveillance rather than infection.
		  • Stratify by time since vaccination and previous infection status (i.e., linkage to prior test results).
		  • Behavioral surveillance, and other ways to address testing bias
		  • Potential modeling approaches
		• Our CDC VE platforms for more severe outcomes are continuing to see VE as expected, though our platform that looks only at infection is seeing similar issues (ICATT platform)
		• Discussed the possibility of no difference after boosting for VE against infection because of the lower VE against infection? Could this all be due to time from vaccine?
		• Linkage to prior test results would be helpful. There is a need to help clinicians understand who to treat (and who to encourage to come in for treatment), and would be useful to understand over time how recent infection (by same/different variant) affects the risk for severe disease/hospitalization/death.
		• Also, noted importance of understanding how many jurisdictions collect information on whether cases receive COVID-19 treatment (either outpatient or inpatient)? As treatment is more widely used, the data will skew to show that high-risk people have lower mortality and shift the perceptions of who should be treated.
		• Initially rate ratios were calculated from a population with a low cumulative prevalence of infection, highly susceptible group compared to a vaccinated population. Over time, most of those in the unvaccinated group have had at least one prior infection. Therefore, concerns raised that using these datasets as a proxy of VE is concerning, as it is not even a bias, rather a predictable outcome.
		• Challenges with vaccination data were raised re: seasonal residents and vaccination tourists, skewing vaccination data, overestimating the number of vaccinated, and underestimating the number of unvaccinated. So, the rates of severe outcome among vaccinated is erroneously high for population level studies (when cases are not line-level linked w/ vaccine records).
		• One approach to address one source of bias (differential testing) is a test-negative design using a sample of test negatives as a control to understand VE to help reduce the testing bias. Could use this approach but on review, a site is still seeing the unexpected findings of higher numbers of negatives among the unvaccinated people and higher numbers of boosted among the positives. So, the test negative approach helps a little, but without further adjustments, the depletion of susceptibles seems to be the bigger issue.
		• Discussed need to look at prior infections status
		• Discussed the importance of not removing information from websites to ensure transparency.
		• Would be ideal to not remove it completely, rather perform the analyses better. However, there is a point at which observational data are no longer effective in representing VE.
		• Need to remember, that at-home tests impact our ability to detect reinfections, especially going forward.

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		• Changes in what is displayed publicly could align with the seroprevalence MMWR that just came out which emphasizes the amount of the population with prior infections. • Noted the need to use the term 'susceptible to a lab-reported COVID-19 infection' versus 'susceptible to COVID-19' as they are currently two different groups. • Irrespective of VE, discussed the ongoing need to show the data re: how many breakthrough infections we are seeing and explain it as best we can • Methods papers discussing the complexities around these types of analyses are welcomed. • Discussed whether it would be helpful to talk with modeling groups about this • It would be great to have talking points for STLTs to use a common language. This group could review if that would be helpful as be good to have common language all could use. • Discussed an idea to do stratification analyses and reconvene • One media reported that the data showed J&J works well but it's related to similar biases. • In the ICATT platform, removing those with self-reported prior infection helps but does not fully correct for biases. The time since vaccination when considered, mitigated some of the unexpected signals. There are likely multiple factors, but primarily it seems it is related to depletion of susceptibles and no amount of control and adjustment can readily resolve it. The is very challenging to communicate to the public. • Another complexity is the immunocompromised patients, as we don't know from surveillance whether it is a 3rd dose, versus booster, etc. • Can we find out how much each of these components are impacting the outcomes? • The ELR vs. serology data show that ELR/testing surveillance missed most of the infections, so the data are challenging and we have many complex factors making it nearly impossible to have a clean analysis with these datasets. • This issue will be discussed tomorrow on the Vaccine Breakthrough call with 29 jurisdictions
3.	Future Topics	• May 11th: Long-COVID surveillance strategies • May 18th: DASH Study on National School COVID-19 Prevention • (May Date TBD) CORHA outbreak guidance update • (Date TBD) Vaccine planning for the Fall, including future booster recommendations (CDC VTF) • (Date TBD) CDC Center for Forecasting & Outbreak Analytics (CFA) – data needs, addressing key epi questions, data sources (NSSP, IIS, ELR, etc.) • (Date TBD) CDC COVID-19 Community Levels evaluation (compared to other surveillance indicators) • (Date TBD) CSTE Death Classification Guidance update • (Date TBD) CSTE Hospital classification guidance update

Action Items

#	Activities/ Deliverables	Action Item/Responsible	Due Date	Status
1.	Future meetings	☐ Tentative CSTE Hospital classification guidance update next meeting ☐ Tentative May 18th/25th – CORHA Revised Outbreak Guidance ☐ Future topics: ○ CDC CFA ○ Vaccine planning and operations for the fall ○ Others as above	5/4/22	Pending

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2.	Trends in Vaccine Impact and Breakthrough Surveillance by Vaccine Status	☐ Consider stratification analyses and reconvene at a future meeting. ☐ Discuss with CDC communication messages for STLTs on this issue.	5/11/22	Pending
3.	New CMS Proposed Rule	☐ CSTE will coordinate preparation of written comments on Rule with member input.	6/17/22	Pending
Next meeting: Wednesday 5/4/22 1-2:30p Eastern				