

**Board Policy Summary:** Since Foothill College’s board policy adoption in June of 2021, SARS-CoV-2 has evolved from its original (ancestral) strain into variants including Alpha, Delta, and hundreds of Omicron subvariants.<sup>32</sup> At the time of the policy, all FHDA community members consisting of staff, students, faculty, and visitors were required to be fully vaccinated and boosted when eligible. However, Foothill College only requires the primary series to register for classes.

**Current COVID Booster Scheduling/Availability:** Limited knowledge exists regarding future opportunities for boosting for those who are considered up to date per CDC standards<sup>23</sup>. At present, immunocompetent people have the following opportunities for vaccination within the United States:

1. *Monovalent (primary series) vaccination:* 2 doses of Pfizer or Moderna OR 1 dose of Johnson & Johnson.
2. *Monovalent booster (offered beginning in late 2021):* 1 additional dose of original-formula Pfizer at least six months after primary series. The vaccine is based on the original (ancestral) strain of SARS-CoV-2.<sup>33</sup>
3. *Bivalent booster offered beginning September 1, 2022:* Updated Pfizer or Moderna bivalent vaccine occurring at least two months after primary series or first booster. The vaccine product is based on the original (ancestral) strain of SARS-CoV-2 and the Omicron BA.4 and BA.5 (BA.4/BA.5) variants of SARS-CoV-2.<sup>33</sup>
4. *Additional boosters:* No additional boosters are recommended.<sup>23</sup> People who received the bivalent vaccination when it came out September 1, 2022 have not received a vaccination in up to six months with no announcement on future boosting opportunities.

**Efficacy of vaccinations: Emerging data regarding current COVID variants show vaccination does *not* offer long-lasting protection against infection.** COVID bivalent booster vaccinations provide protection against serious outcomes related to COVID-19 including hospitalizations and death, though older adults showing a sharper decline in protection than younger populations over time.<sup>15,27,28,30</sup> COVID vaccines have some protection against infections; however, prevention wanes steadily over time.<sup>10,15,27</sup> At present, XBB 1.5 is the current dominant variant and is more transmissible and immune-evading than predecessors.<sup>13-14, 16, 27</sup> Finally, with limited data indicating that, people may be more likely to have a symptomatic infection sooner after boosting than previous variants.<sup>27</sup> XBB 1.5 “substantially escapes neutralizing antibodies but not T cell responses after bivalent mRNA boosting” with some data showing neutralizing antibodies return to baseline at month three after boosting.<sup>27,29</sup> New evidence shows bivalent boosters offer 48% protection against XBB/XBB 1.5 infections for 2-3 months after boosting in a sample of people with 2-4 previous monovalent vaccine doses as compared to people without bivalent boosting.<sup>15</sup> Though there is protection with boosting, data shows that people may experience infection after boosting yet still having protection against serious outcomes.<sup>27,29</sup> Although boosting is beneficial, it may not offer protection against transmission on campus.

**Anecdotal data from Foothill College on effectiveness of monovalent and bivalent vaccinations against infection:** In early March, students (excluding allied health) who tested positive for COVID between November 2022 and February 2023 were asked when they had received their latest booster vaccination prior to infection. Of the 24 who responded to our query, 22 (92%) had received at least one booster vaccine (27% bivalent booster, 73% monovalent booster). Of the 6 people who had been boosted with the bivalent booster and acquired COVID between November 2022 and February 2023, 83% ( $n=5$ ) acquired COVID less than 4 months after receipt of the booster while the remaining 17% ( $n=1$ ) acquired COVID 4-5 months of the booster. Of the 16 people who received the monovalent booster only and tested positive between November 2022 and February 2023, 19% ( $n=3$ ) acquired COVID less than 4 months after receipt of the booster while the remaining 81% ( $n=13$ ) tested positive more than five months after receipt of the monovalent booster. Note: Information about staff and faculty are unknown.

**Anecdotal data from Ohlone College on effectiveness of monovalent and bivalent vaccinations against infection:** Similarly, the same methodology was employed at Ohlone College. The sample data is more robust due

to the same consisting of faculty, staff, and students. As of early March 2022, a total of 408 confirmed COVID infections have been reported with 200 (49%) of those cases on-campus during their infectious period. In early March, people who tested positive for COVID between November 2022 and February 2023 were asked when they had received their latest booster vaccination prior to infection. Of the 45 who responded to our query, 34 (76%) had received at least one booster vaccine (44% bivalent booster, 56% monovalent booster) yet still tested positive for COVID between November 2022 and February 2023. Of the 15 people who had been boosted with the bivalent booster and acquired COVID between November 2022 and February 2023, 60% ( $n=9$ ) acquired COVID less than 4 months after receipt of the booster while the remaining 40% ( $n=6$ ) tested positive between 4-5 months after getting the booster. Of the 19 people who received the monovalent booster only and tested positive between November 2022 and February 2023, 11% ( $n=2$ ) acquired COVID less than 4 months after receipt of the booster, 5% ( $n=1$ ) acquired COVID between 4-5 months after, and the remaining 84% ( $n=16$ ) tested more than five months after receipt of the monovalent booster.

*Note: This data has many limitations and biases. Thus, this data is for informational purposes only and not generalizable to the entire Foothill College population. While informative, conclusions shall not be drawn from this limited sample. Only those who have tested positive for COVID and reported it were included in this data. There may be many people who had the monovalent and/or bivalent vaccinations and never tested positive for COVID.*

**Additional barriers to the vaccination policy will exist as the expiration of the federal Public Health Emergency (PHE) will result in an eventual discontinuation of free vaccinations once federal stockpile runs out.** Foothill College does not provide health insurance to students (other than the student health fee which does not include COVID vaccinations) nor to part-time staff and faculty including adjunct instructors unless they qualify for re-employment preference. When the federal Public Health Emergency (PHE) expires on May 11, 2023, the cost of COVID vaccinations will eventually fall to the consumer and/or insurance groups once federal stockpiles are exhausted. Many people covered by Medi-Cal will have continued cost coverage for vaccination through September 30, 2024 and cost coverage may continue some members beyond that time.<sup>25</sup> For students, staff, and faculty who are not covered under any kind of private or government health insurance policy, the cost for a single-dose vaccination may range from an estimated \$96-130 per dose.<sup>26</sup> Requiring a vaccine policy to continue without providing free and easy access to COVID vaccinations may place a burden upon vulnerable populations who may not have the economic means to purchase vaccinations once federal stockpiles are exhausted. Regardless of any vaccination requirement, Foothill College is encouraged to prioritize community partnerships that can bridge the gap between vaccination availability for uninsured community members.

**Summary on California's recent dissolution of its COVID-19 state of emergency declaration:** California's State of Emergency declaration ended on February 28, 2023, while the federal state of emergency will end May 11, 2023.<sup>18</sup> There may be a reduction or elimination of "free and easy access to vaccines, tests and treatments in a matter of months" depending on state and federal supply followed by a reduction of support from the state for mass testing/vaccination sites.<sup>19</sup> The impact on schools and the community will evolve over time as federal stockpiles of COVID-19 tests, vaccines, and treatments will shift from no charge to the commercial marketplace with continued uncertainty surrounding out-of-pocket costs especially for those under or uninsured.<sup>18</sup> In California, people with health insurance "can continue to get COVID-19 tests, vaccines and treatment with no prior authorization or cost sharing when they access these services through their health plan's network" but "can be charged for cost-sharing only if these services are provided out of network after November 11, 2023".<sup>21</sup> Additionally, changes at the federal level include the possibility that millions of Medi-Cal beneficiaries may lose their coverage.<sup>19</sup> As a result, the "SMARTER" plan is the next phase in California's response to COVID-19 and includes variant monitoring, utilization of statewide stockpiles of testing supplies, deployment of staff for vaccine administration to regions with increased transmission, wastewater surveillance, surge staffing for hospitals, and public health messaging.<sup>20</sup> With an inevitable decrease in no-charge services, continued access and promotion of testing supplies, vaccinations, and funds towards therapeutics would be an ideal public health programmatic strategy for Foothill College's at-risk populations including vulnerable students and staff who are under or uninsured (such as part-time adjuncts).<sup>19</sup>

Further, CalFresh recipients will see a reduction in their monthly benefits which will push the continued need for food assistance on campus.<sup>19</sup> Although two state-of-emergency orders may become permanent per the California legislatures ruling including allowing nurses the ability to dispense COVID-19 medications and another order related to lab workers, the state will shift COVID-19 testing, vaccination, and treatment costs and access back to insurers and the individual which will require Foothill College to work with community based organizations and the community to bridge the gap to access for the most vulnerable.<sup>18</sup>

**Conclusion:** Compared with published scientific literature, emerging data from both Foothill College and Ohlone College align with findings showing vaccinations including monovalent and bivalent boosters cannot fully prevent COVID infections. Thus, even with a revision of the current COVID vaccination mandate vaccinations and/or boosters, protection against infection may last for a few months. When evaluating the impact on campus transmission, community members will have staggard protection against symptomatic infection for a short period throughout the year which may or may not coincide with their on-campus presence. Thus, requiring a vaccination and/or booster may have short-term protection for individuals but may not provide a significant campus-wise reduction in already low transmission of COVID as vaccinated/boosted community members may still acquire COVID and have the ability to transmit to others on campus. Instead, Foothill College is encouraged to support health promotion programs including health education, linkages to health resources such as COVID treatments, and to opportunities for masking, ventilation, and monitoring of COVID.

### **Beyond Vaccination Mandates: Sample Action Plan with a Public Health Approach**

**Overview:** While having a fully vaccinated and boosted population may temporarily decrease COVID-19 infections within individuals on campus, the spacing of the upcoming boosters will ultimately affect the likelihood that even vaccinated people acquire COVID-19 as is the case currently within our population. Further, public health prevention methods including vaccination, masking, and effective ventilation strategies should continue to be encouraged on campus. For those who test positive for COVID-19, continuing the required mitigation strategies including investigation and case isolation in addition to providing Foothill community members referral information to prevent serious outcomes related to COVID-19. People who qualify for treatment must begin soon after their first symptoms appear even if mild.<sup>24</sup> Studies indicate that antiviral treatments continue to be effective with current dominant variants.<sup>17</sup> Thus, robust public health efforts including education must address all mitigation strategies and nuances that exist related to COVID.

**Public Health Education:** Utilizing existing members of the COVID team and peer-to-peer groups such as student health ambassadors, Foothill shall increase public health education on the following topics:

1. ***Encourage and Referral to Vaccination:*** Education shall consist of primary series vaccination information (for unvaccinated people) including boosters including timing, efficacy, and risks associated with vaccination. In combination with future vaccine clinics at Foothill and/or within the community, student health ambassadors can serve as vital links connecting students to COVID resources and provide resources such as masking and information on COVID treatments and hotlines in addition to providing transportation options. Foothill shall encourage opportunities for no-cost vaccination (including paid transportation costs). Regarding risks, although vaccination is the best choice for most people, estimates indicate that the likelihood of myocarditis after vaccination (COVID, smallpox, and flu) is extremely low but a slight increase in concern young men in particular especially those who have pre-existing heart conditions<sup>5-8</sup>. Although recovery from myocarditis occurs for most, recommendations for public health education must include encouraged dialogue with medical care providers as to whether or not vaccination and/or boosting is advised especially if they have previous incidences of myocarditis, pericarditis, etc.<sup>5-7</sup>

2. ***Dispelling Myths:*** In addition to dispelling myths related to COVID and vaccination, popular discourse regarding Omicron variants includes the notion that with each iteration, serious outcomes decrease. According to a Denmark study, BA.5 infections were associated with an increased risk of hospitalizations in comparison to the earlier BA.2 variant.<sup>4</sup> Thus, dispelling myths related to COVID may help influence prevention strategies at the individual level.
3. ***Link COVID+ People with Treatment:*** Ambassadors shall provide treatment referral information to people who are COVID+ including information on the CDPH website. Ambassadors shall encourage dialogue between care providers and COVID+, especially resources for under and uninsured community members. Communication should occur swiftly as COVID+ people must begin taking medication 5-7 days after the first symptom develops, even if symptoms are mild.<sup>24</sup>

**COVID monitoring:** At present, a rise COVID is evident in wastewater surveillance throughout parts of the bay area and is occurring less than 3 months after the last peak.<sup>11</sup> Smaller intervals between peak infections are concerning and should be monitored closely at the state, county, and campus levels for patterns of increased outbreaks and a need to incorporate mitigation strategies (ventilation, universal masking using N95 or KN95 masks, remote work, etc.). Patterns of COVID spread continue to show variants spreading from the east coast to the west coast, though this can always change.<sup>12</sup> At present, no expansion is needed on this as members of the COVID team are currently monitoring and informing administration.

**COVID data collection and response on campus.** Cal/OSHA requires worksite COVID-related investigations that are required to continue until February 2025 which helps to quickly identify and respond to individuals with COVID including tracking for potential clusters and outbreaks. Foothill College currently a dual process with HR responding to staff and faculty and a separate faculty member responding to students. All people who are COVID+ must report their COVID infection using the self-reporting link on Foothill's website. During case investigation interviews with COVID+ community members, many people identify the person/people they acquired COVID from, often linked to family and friends within social spaces as opposed to on-campus spread which mirrors analysis from self-reports. Data does not show spread of infection in traditional classroom/lecture environments though protective factors such as masking and ventilation may also help mitigate the spread of COVID. Further, it is unclear how many students, staff, and/or faculty have not submitted a COVID-19 self-report due to fear of missing school/work, stigma, assuming they were not on campus during an infectiousness period, or not knowing about the requirement to self-report. As a result, the true number of COVID+ people on campus are not known. This mirrors Ohlone College.

**Organizational level:** Foothill College shall continue to establish hygienic practices which require people who are ill, especially with COVID-19, to stay away from campus without penalty or persecution. Cal/OSHA requires immediate reporting and investigating/alerting of COVID on campus, and both Cal/OSHA and Santa Clara County require isolation of COVID-19+ workers.<sup>22,30</sup> In rare cases some students have received negative push back from faculty for missing classes and/or assignments. While this is rare, it is vital that students are provided make-up work or extensions when they are recovering to prevent continued spread of COVID.

## References

1. Ayoubkhani, D, Bosworth ML, King S, Pouwels KB, Glickman M, Nafilyan V, Zaccardi F, Khunti K, Alwan NA, Walker AS. Risk of Long COVID in People Infected With Severe Acute Respiratory Syndrome Coronavirus 2 After 2 Doses of a Coronavirus Disease 2019 Vaccine: Community-Based, Matched Cohort Study, *Open Forum Infectious Diseases*, Volume 9, Issue 9, September 2022, ofac464, <https://doi.org/10.1093/ofid/ofac464>
2. Subramanian, A., Nirantharakumar, K., Hughes, S. *et al.* Symptoms and risk factors for long COVID in non-hospitalized adults. *Nat Med* **28**, 1706–1714 (2022). <https://doi.org/10.1038/s41591-022-01909-w>
3. Kislaya, I., Casaca, P., Borges, V., Sousa, C., Ferreira, B. I., Fonte, A....Peralta-Santos, A. (2023). Comparative Effectiveness of COVID-19 Vaccines in Preventing Infections and Disease Progression from SARS-CoV-2 Omicron BA.5 and BA.2, Portugal. *Emerging Infectious Diseases*, 29(3), 569-575. <https://doi.org/10.3201/eid2903.221367>.
4. Hansen CH, Friis NU, Bager P, et al. Risk of reinfection, vaccine protection, and severity of infection with the BA.5 omicron subvariant: a nation-wide population-based study in Denmark. *Lancet Infectious Diseases*. 2023;23(2):167-176. doi:10.1016/S1473-3099(22)00595-3
5. Galit Aviram, Dana Viskin, Yan Topilsky, Sapir Sadon, Tamar Shalmon, Philippe Taieb, Eihab Ghantous, Nir Flint, Shmuel Banai and Ofer Havaku. Myocarditis Associated With COVID-19 Booster Vaccination.
6. Fatima M, Khan MHA, Ali MS, Osama M, Cheema HA, Ahmed A, Nisar A, Murad MW, Farooq H, Rehman MAU, Swed S, Akbar UA. Development of myocarditis and pericarditis after COVID-19 vaccination in children and adolescents: A systematic review. *Clin Cardiol*. 2023 Jan 2. doi: 10.1002/clc.23965. Epub ahead of print. PMID: 36594165.
7. Witberg G, Barda N, Hoss S, et al. Myocarditis after Covid-19 vaccination in a large health care organization. *N Engl J Med* 2021;385:2132-2139.
8. Hamed KR, Loftus G, Traylor L, Goodwin R, Arce S. Comparison of COVID-19 Vaccine-Associated Myocarditis and Viral Myocarditis Pathology. *Vaccines*. 2023; 11(2):362. <https://doi.org/10.3390/vaccines11020362>
9. European Centre for Disease Prevention and Control. (2022a). *Preliminary public health considerations for COVID-19 vaccination strategies in the second half of 2022*. <https://www.ecdc.europa.eu/en/publications-data/preliminary-public-health-considerations-covid-19-vaccination-strategies-second>
10. European Centre for Disease Prevention and Control. (2022b). *Vaccines*. <https://www.ecdc.europa.eu/en/covid-19/latest-evidence/vaccines>
11. California Department of Public Health. (2023). *CDPH wastewater surveillance network dashboard*. <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/CalSuWers-Dashboard.aspx>
12. Centers for Disease Control and Prevention. (2023). *COVID data tracker*. <https://covid.cdc.gov/covid-data-tracker/#variant-proportions>
13. Ehmsen et al., BQ.1.1, XBB.1, and XBB.1.5 neutralization after bivalent mRNA COVID-19 booster in patients with cancer, *Cancer Cell* (2023), <https://doi.org/10.1016/j.ccell.2023.02.003>
14. Davis-Gardner ME, Lai L, Wali B, Samaha H, Solis D, Lee M, Porter-Morrison A, Hentenaar IT, Yamamoto F, Godbole S, Liu Y, Douek DC, Lee FE, Rouphael N, Moreno A, Pinsky BA, Suthar MS. Neutralization against BA.2.75.2, BQ.1.1, and XBB from mRNA Bivalent Booster. *N Engl J Med*. 2023 Jan 12;388(2):183-185. doi: 10.1056/NEJMc2214293. Epub 2022 Dec 21. PMID: 36546661; PMCID: PMC9812288.
15. Link-Gelles R, Ciesla AA, Roper LE, et al. Early Estimates of Bivalent mRNA Booster Dose Vaccine Effectiveness in Preventing Symptomatic SARS-CoV-2 Infection Attributable to Omicron BA.5– and XBB/XBB.1.5–Related Sublineages Among Immunocompetent Adults — Increasing Community Access to Testing Program, United States, December 2022–January 2023. *MMWR Morb Mortal Wkly Rep* 2023;72:119–124. DOI: <http://dx.doi.org/10.15585/mmwr.mm7205e1>.
16. Lasrado N, Collier AY, Miller J, Hachmann NP, Liu J, Sciacca M, Wu C, Anand T, Bondzie EA, Fisher JL, Mazurek CR, Patio RC, Powers O, Rodrigues SL, Rowe M, Surve N, Ty DM, Korber B, Barouch DH.

- Waning Immunity Against XBB.1.5 Following Bivalent mRNA Boosters. bioRxiv [Preprint]. 2023 Jan 23:2023.01.22.525079. doi: 10.1101/2023.01.22.525079. PMID: 36747640; PMCID: PMC9900747.
17. Uraki, R, Ito M, Kiso, M et al. 2023 Antiviral and bivalent vaccine efficacy against an omicron XBB.1.5 isolate. *Lancet Infect Dis*. 2023 Feb 8:S1473-3099(23)00070-1.
  18. State of California. (2022a). Office of Governor Gavin Newsom. *Governor Newsom to end the COVID-19 state of emergency*. <https://www.gov.ca.gov/2022/10/17/governor-newsom-to-end-the-covid-19-state-of-emergency/>
  19. Vaziri, A. (2023). San Francisco Chronicle. *California's COVID emergency is over today. What happens next?* <https://www.sfchronicle.com/health/article/pandemic-covid-coronavirus-california-bay-area-17808678.php>
  20. State of California. (2022b). California smarter plan. <https://files.covid19.ca.gov/pdf/smarter-plan--en.pdf>
  21. Department of Managed Care. (2023). *Know your healthcare rights: COVID-19 tests, vaccines & treatment*. <https://www.dmhc.ca.gov/Portals/0/Docs/DO/COVID-FactSheet2022.pdf>
  22. Department of Industrial Relations. (2023). California Occupational Safety and Health Standards Board. *California code of regulations, title 8, division 1, chapter 4, subchapter 7. General industry safety orders, section 3205: COVID-19 prevention*. <https://www.dir.ca.gov/title8/3205.html>
  23. Center for Disease Control and Prevention. (2023). *Stay up to date with COVID-19 vaccines including boosters*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html>
  24. United States Department Health and Human Services. (2023). Administration for Strategic Preparedness and Response. *What are the possible treatment options for COVID-19?* <https://aspr.hhs.gov/COVID-19/Treatments/Pages/Possible-Treatment-Options-for-COVID19.aspx>
  25. United States Department Health and Human Services. (2023). *Fact sheet: COVID-19 public health emergency transition roadmap*. <https://www.hhs.gov/about/news/2023/02/09/fact-sheet-covid-19-public-health-emergency-transition-roadmap.html>
  26. Kates, J., Cox, C., & Michaud, J. (2022). Kaiser Family Foundation. *How much could COVID-19 vaccines cost the U.S. after commercialization?* <https://www.kff.org/coronavirus-covid-19/issue-brief/how-much-could-covid-19-vaccines-cost-the-u-s-after-commercialization/>
  27. Lasrado N, Collier AY, Miller J, Hachmann NP, Liu J, Sciacca M, Wu C, Anand T, Bondzie EA, Fisher JL, Mazurek CR, Patio RC, Powers O, Rodrigues SL, Rowe M, Surve N, Ty DM, Korber B, Barouch DH. Waning Immunity Against XBB.1.5 Following Bivalent mRNA Boosters. bioRxiv [Preprint]. 2023 Jan 23:2023.01.22.525079. doi: 10.1101/2023.01.22.525079. PMID: 36747640; PMCID: PMC9900747.
  28. Lin D, Xu Y, Gu, Y, Zeng, D, Wheeler B, Young H, Sunny SK, Moore Z. Effectiveness of bivalent boosters against severe omicron infection. *N Engl J Med*2023; doi:10.1056/NEJMc2215471
  29. Kurhade, C., Zou, J., Xia, H., Liu, M., and Chang, H.C. (2022). Low neutralization of SARS-CoV-2 Omicron 578 BA.2.75.2, BQ.1.1 and XBB.1 by parental mRNA vaccine or a BA.5 bivalent booster. *Nat Med*. 579 10.1038/s41591-022-02162-x.
  30. Qu P, Faraone JN, Evans JP, Zheng YM, Carlin C, Anghelina M, Stevens P, Fernandez S, Jones D, Panchal A, Saif LJ, Oltz EM, Xu K, Gumina RJ, Liu SL. Extraordinary Evasion of Neutralizing Antibody Response by Omicron XBB.1.5, CH.1.1 and CA.3.1 Variants. bioRxiv [Preprint]. 2023 Jan 17:2023.01.16.524244. doi: 10.1101/2023.01.16.524244. PMID: 36711991; PMCID: PMC9882202.
  31. Santa Clara County. (2022). Public Health Department. *COVID-19 guidelines for the general public*. <https://covid19.sccgov.org/covid19-guidelines>
  32. Foothill College. (2021). *Chapter 3 - General Institution Title, COVID-19 Vaccination Requirement Code, AP 3507 Status*. <https://go.boarddocs.com/ca/fhda/Board.nsf/goto?open&id=C3KPX566B052>
  33. Center for Disease Control and Prevention. (2023). *Interim clinical considerations for use of COVID-19 vaccines currently approved or authorized in the United States*. <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html>

