Supplemental Digital Content 2 Detailed description of decision tree pathways

The two algorithms are used to guide providers’ decisions related to the testing, work restrictions, and work clearances for employees infected with, or exposed to a person reported to be infected with the COVID-19 virus. The Cohabitation decision tree (Figure 2, upper panel) is used if exposure occurs due to cohabitation. The Non-Cohabitation decision tree (Figure 2, lower panel) is used if no known contact is identified, or the contact occurred in the workplace or community. Both tools manage COVID-19 positive employees in the same way (boxes 6 and 15) with four actions: (1) place the employee on home isolation with instructions to contact their primary care provider for evaluation and treatment, (2) determine if workplace tracing is needed which is performed if the employee worked on-site during their infectious period (i.e. 48 hours prior to either symptom onset, or if asymptomatic, the date of the positive test, whichever is earlier), (3) if the testing was done at VALLHS, the OEM staff completes a person of interest (PUI) for submission to the local county public health department, and (4) discuss the RTW protocol with the employee.

Both algorithms address work locations in the facility which have unique COVID-19 circumstances. These locations or “Special Units” care for patients who have difficulty adhering to social distancing and mask wearing, and/or who are at higher risk of morbidity or mortality from COVID-19 infection. Employees working in these areas undergo weekly unit-wide testing using COVID-19 antigen assays. Due to this increased surveillance, the Active Monitoring period is reduced from ten days to seven days (boxes 3, 5, 11).

In the Cohabitation Decision tree, an initial COVID-19 test is ordered for any employees who reports that one or more household members has tested positive for the virus, regardless of whether the employee is experiencing symptoms or not (box 1). If the test result is positive, the case is managed with the four actions described above. If negative, the employee is asked if they can temporarily “separate” from the cohabitant (box 2). If the employee is fully vaccinated, “separate” is defined as being able to stay in different sleeping chamber, wears mask when in common areas if the employee is allowed to work under Active Monitoring (box 3). However, for unvaccinated HCP, “separate” is defined as staying in a different household (box 2). Although rare, if this is possible, the unvaccinated employee is allowed to work under Active Monitoring (box 3). Most commonly, unvaccinated HCP cannot separate and are placed on quarantine for ten days (box 4). Both vaccinated and unvaccinated employees are instructed to perform daily Self-Observation for COVID-19 symptoms, and to call the OEM department if symptoms appear. Before returning to work, cohabitating employees who are unable to separate are re-tested on the eighth day. This re-test determines if the employee became infected during the quarantine period. To return to work, the re-test results must be negative, the quarantine period must be over, and the employee must be asymptomatic (box 5). Unvaccinated employees are placed on Active Monitoring, whereas fully vaccinated employees return to work without restriction. Regardless of vaccine status, if the re-test result is positive, the employee is again restricted from work and the isolation protocol is followed (box 6).

The Non-Cohabitation tool directs management of employees whose exposure occurs at the workplace, in the community, or if no COVID-19 contact can be identified. In addition to symptom assessment and test results, exposure risk stratification guides the providers’ decisions. Symptoms are assessed first (box 7 or 12). If present, testing is ordered, the employee is instructed to go home after testing and to call OEM for test results at a later time (dependent on if a rapid or standard test was ordered) (box 8 or 14). Asymptomatic employees who cannot identify an exposure are returned to work under Self-Observation (boxes 13). However, if an asymptomatic employee is able to specifically identify having contact with a COVID-19-infected person, the provider conducts an exposure risk assessment (box 9). Risk level is stratified as either low or moderate/high risk based on the clinical judgement of the OEM clinician and subject matter expert recommendations (e.g. encounter was greater than 15 minutes, the individuals were less than 6 feet distance apart, and/or one or both individuals were not wearing facial masks or other facial personal protection equipment). Special circumstances (e.g. the encounter involved aerosol-producing activity such as coughing or invasive respiratory procedures) are also taken into consideration. Asymptomatic, COVID-19 negative employees with low risk are returned to work under Self-Observation (box 10). If the exposure risk is deemed to be moderate/high, asymptomatic, COVID-19 negative fully vaccinated employees return to work without restriction, whereas similar but unvaccinated HCP are placed on Active Monitoring (box 11). In some cases, employees with moderate/high exposures continue to have anxiety associated with possible infection, in spite of testing negative and having no symptoms. These HCP are advised to undergo optional COVID-19 testing using Veterans Health Administration’s voluntary testing service or through their primary care provider. In the final scenario, symptomatic staff with severe symptoms or fever who test negative for COVID-19 are advised that their symptoms are unlikely due to the virus, and for their own health and safety, they should stay home and contact their primary care provider for evaluation and treatment (box 16).

Abbreviations: COVID-19 = severe acute respiratory syndrome (SARS)-CoV-2; OEM = occupational and environmental medicine; RTW = return to work