



I was informed yesterday that nursing homes in Denver have seen reinfection with COVID-19 among a handful of patients that have previously been infected as well as those who have been vaccinated. A possible explanation is outlined below.

#### COVID Variant of Concern

- increase in transmissibility,
- more severe disease (increased hospitalizations or deaths),
- significant reduction in neutralization by antibodies generated during previous infection or vaccination,
- reduced effectiveness of treatments or vaccines,
- or diagnostic detection failures.
- There are at least 5 COVID variants of concern circulating in the U.S.

<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-surveillance/variant-info.html>

#### **Variant Name: SARS-CoV-2 P.1**

As of April 13, 2021 there have been 16 identified cases of this variant in Colorado and it is likely that there are more individuals infected with this variant than the 16 identified by surveillance methods.

- **\*\*HIGHER RISK OF REINFECTION \*\***
- a mix of other mutations: Spike protein mutation N501Y also found in “UK variant” and “South Africa” variants, spike protein mutations K417T and E484K.
- Increased transmissibility
- Monoclonal antibody and convalescent plasma therapies may be less effective for this variant.
- Vaccines thought to provide protection but probably not as good as with other COVID-19 strains.
- Similar variant to “Brazil variant” that has been most deadly in younger aged patients: 20-59 years of age. Case fatality rate for those 20-29 tripled and for those 30-59 it doubled.

<https://www.medrxiv.org/content/10.1101/2021.03.24.21254046v1>