EARLY INTERVENTION IN COVID-19 MAY REDUCE

CLINICAL COMPLICATIONS AND FURTHER COMMUNITY TRANSMISSION[1-12]

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Early intervention in COVID-19 may reduce

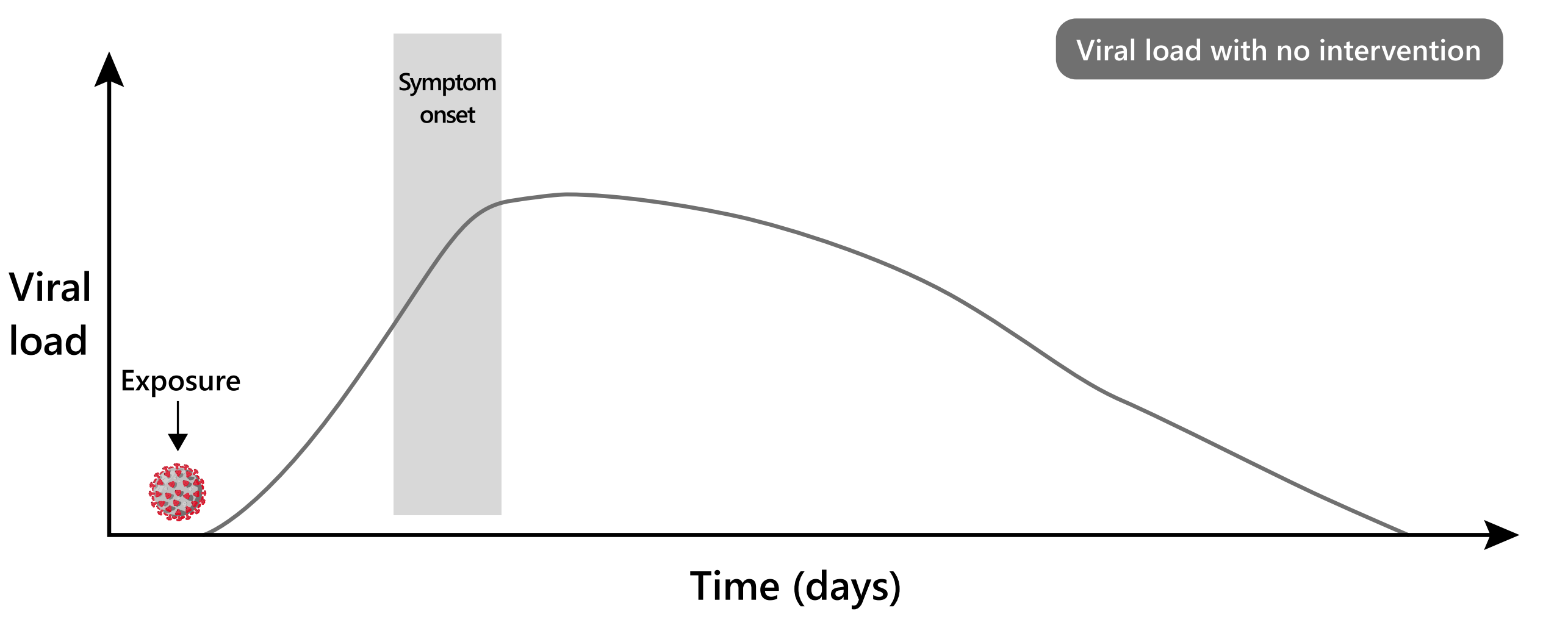
- Impact on underlying conditions[1–3]
- Risk of severe illness[4-7] and long COVID[8,9]
- Risk of transmission and prevent outbreaks[10–12]

Delaying response for COVID-19 increases the risk of hospitalization and mortality[12,13] and is associated with

- ↑12x Higher risk of severe COVID-19[4]
- ↑4x Higher risk of ICU admissions in COVID-19 hospitalized patients[5]

Antiviral intervention is most effective early in the viral replication cycle[14–16]

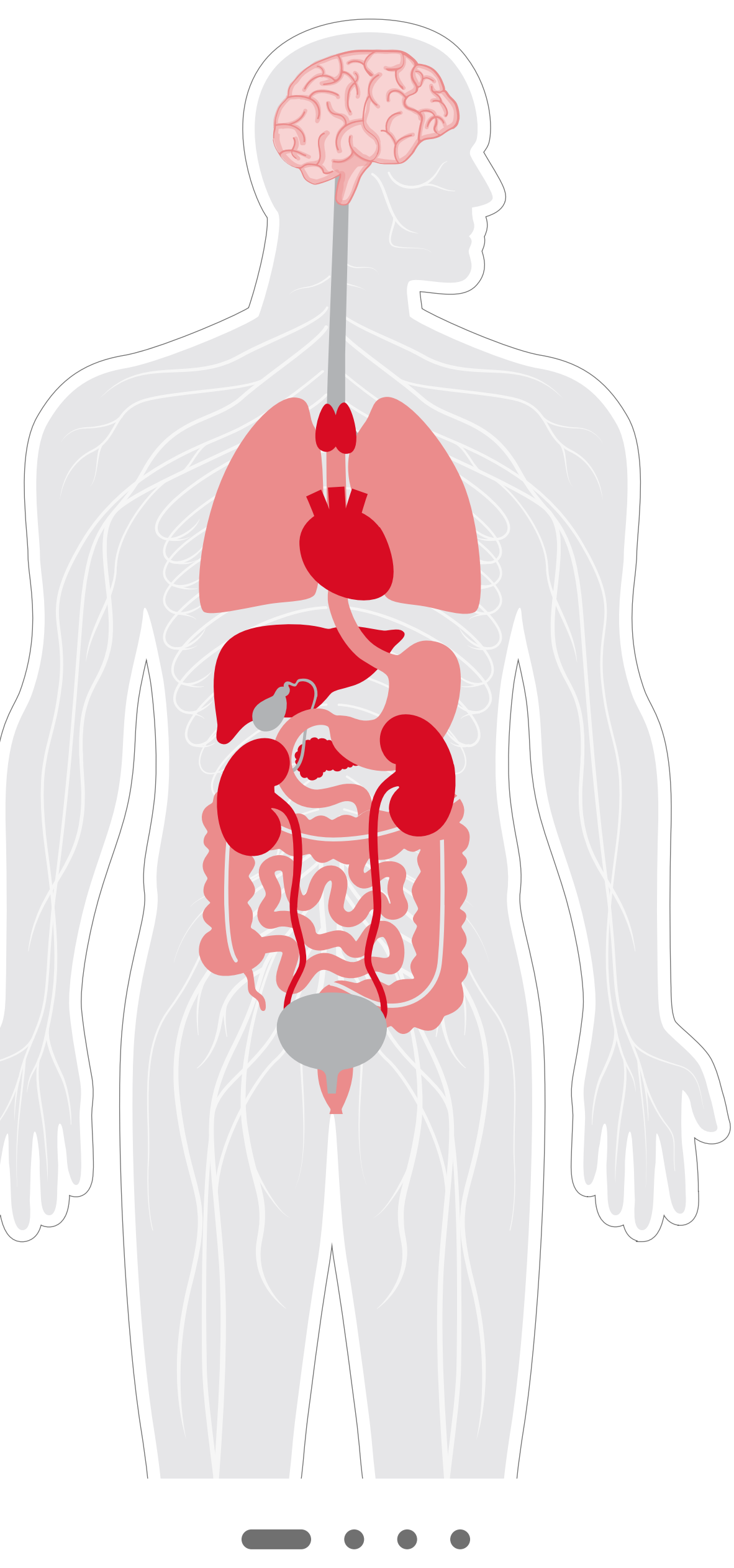
Following viral infection, viral load peaks early, driving symptoms and high transmissibility[16]



Early intervention may reduce the clinical complications associated with COVID-19[4,5,12,13]

All Systems | Chronic Conditions | New-Onset Diseases | Long COVID

COVID-19 does not just impact the lungs; it disrupts multiple organ systems, including the cardiovascular, neurological, renal, and gastrointestinal systems[20]



Early intervention may prevent outbreaks and reduce the impact of COVID-19 in closed settings[48]

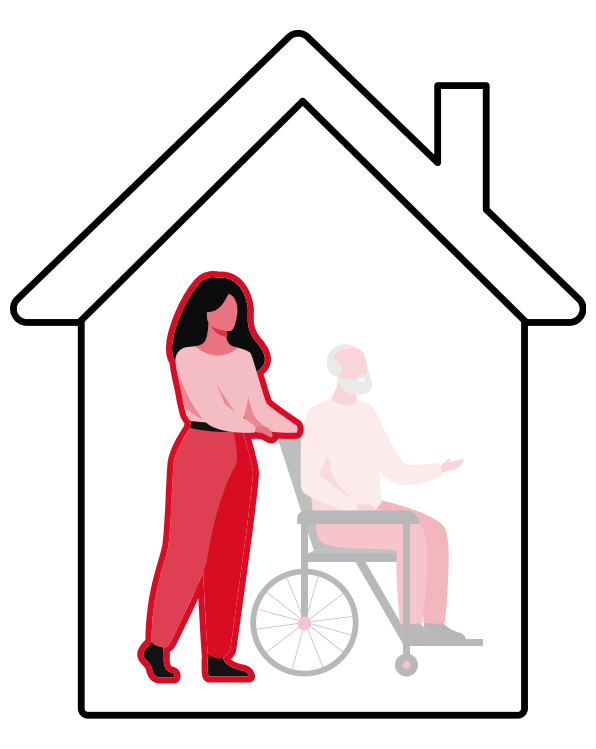
Healthcare Settings | Non-healthcare Settings

Flip the cards to learn about the importance of early intervention to control COVID-19 outbreaks in hospitals and long-term care facilities (LTCFs):

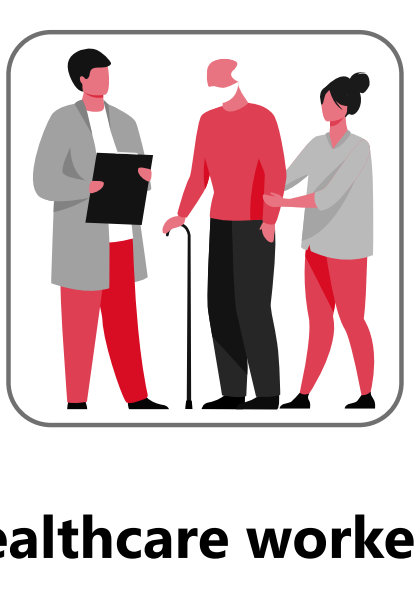
Hospitals

Long-Term Care Facilities

Early intervention in respiratory infections may preserve quality of life, improve work productivity, and protect vulnerable populations[52,53]



Standard Risk | Higher Risk



- **Healthcare workers (HCWs)**
- **Caregivers**
- **Patients living with higher-risk individuals**

- **Decreased work time** and **productivity** due to illness and caregiving demands[54,55]
- **Higher economic burden** due to workforce absenteeism among HCWs[56]
- HCWs face **delays in accessing timely antiviral treatment** for residents in LTCFs[57]

Abbreviations: COVID, coronavirus disease; COVID-19, coronavirus disease ED, emergency department 2019; HCWs, healthcare workers; ICU, intensive care unit; LTCF, long-term care facility; OAV, oral antiviral; PEP, post-exposure prophylaxis; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; US, United States.

References: 1. Chu WM, et al. *EClinicalMedicine*. 2024;72:102620; 2. Wang W, et al. *BMC Med*. 2024;22(1):117; 3. Cai H, et al. *Antiviral Res*. 2023;216:105659; 4. Wu J, et al. *J Intern Med*. 2020;288(1):128-138; 5. Platzer M, et al. *Wien Klin Wochenschr*. 2024;136(15-16):458-464; 6. Hammond J, et al. *N Engl J Med*. 2022;386(15):1397-1408; 7. Colaneri M, et al. *Int J Infect Dis*. 2024;149:107265; 8. Jiang J, et al. *J Infect*. 2024;89(2):106190; 9. Drysdale M, et al. *Infection*. 2025;doi:10.1007/s15010-025-02505-z; 10. Lin SN, et al. *Infect Dis Poverty*. 2021;10(1):53; 11. Bai Y, et al. *Emerg Infect Dis*. 2024;30(2):262-269; 12. Matrajt L, et al. *BMC Infect Dis*. 2022;22(1):683; 13. Van Heer C, et al. *Lancet Reg Health West Pac*. 2023;41:100917; 14. Gonçalves A, et al. *CPT Pharmacometrics Syst Pharmacol*. 2020;9(9):509-514; 15. Lee N, et al. *J Infect Dis*. 2009;200(4):492-500; 16. Puhach O, et al. *Nat Rev Microbiol*. 2023;21(3):147-161; 17. Zaaraoui H, et al. *PLoS Comput Biol*. 2024;20(12)e1012573; 18. Germann TC, et al. *Proc Natl Acad Sci USA*. 2006;103(15):5935-5940; 19. Ikematsu H, et al. *N Engl J Med*. 2020;383(4):309-320; 20. Moslehi N, et al. *J Family Med Prim Care*. 2022;11(9):5014-5023; 21. Basoulis D, et al. *Viruses*. 2023;15(7):1515; 22. Marsters CM, et al. *Brain*. 2024;147(7):2542-2551; 23. Kubota T, et al. *Clin Neurol Neurosurg*. 2021;200:106349; 24. Conway SE, et al. *Mult Scler Relat Disord*. 2022;63:103946; 25. Di Iorio M, et al. *Semin Arthritis Rheum*. 2022;55:152025; 26. Hadidchi R, et al. *EBioMedicine*. 2025;116:105778; 27. Del Sole F, et al. *Eur J Clin Invest*. 2020;50(10):e13378; 28. Kwok WC, et al. *Respir Res*. 2023;24(1):53; 29. Kwok WC, et al. *Respirology*. 2024;29(3):209-216; 30. Kwok WC, et al. *Sci Rep*. 2024;14(1):13881; 31. Peng Y-L, et al. *Cancers (Basel)*. 2024;16(2):304; 32. Zou X, et al. *Clin Gastroenterol Hepatol*. 2021;19(3):597-603; 33. Marjot T, et al. *Nat Rev Gastroenterol Hepatol*. 2021;18(5):348-364; 34. Jdiaa SS, et al. *J Nephrol*. 2022;35(1):69-85; 35. Xie Y, et al. *Nat Med*. 2022;28(3):583-590; 36. Xie Y, et al. *BMJ*. 2022;376:e068993; 37. Srivastava S, et al. *World J Meta-Anal*. 2021;9(3):220-233; 38. Chuang M-H, et al. *BMC Med*. 2024;22(1):360; 39. Lu JY, et al. *Sci Rep*. 2024;14(1):31451; 40. Lebbe A, et al. *Biomedicines*. 2024;12(9):2065; 41. Chourasia P, et al. *J Clin Med*. 2023;12(3):1159; 42. Chen I-W, et al. *Sci Rep*. 2025;15(1):10924; 43. Fang Z, et al. *JAMA*. 2024;332(1)5-6; 44. Xu E, et al. *Nat Med*. 2022;28(11):2406-2415; 45. Daines L, et al. *Curr Opin Pulm Med*. 2022;28(3):174-179; 46. Gerayeli FV, et al. *Eur Respir J*. 2024;64(3):2302302; 47. Elmunzer BJ, et al. *Clin Gastroenterol Hepatol*. 2024;22(5):1098-1107.e3; 48. Ma B H-M, et al. *JAMA Netw Open*. 2023;6(4):e2310887; 49. Klompas M, et al. *Ann Intern Med*. 2024;177(8):1078-1088; 50. Ramos-Rincon J-M, et al. *Gerontology*. 2023;69(6):671-683; 51. International reports on COVID-19 and long-term care. https://ltccovid.org/international-reports-on-covid-19-and-long-term-care/ Accessed September 8, 2025; 52. Gallop K, et al. *J Health Econ Outcomes Res*. 2024;11(2):20-28; 53. Di Fusco M, et al. *J Patient Rep Outcomes*. 2023;7(1):77; 54. Fisman D, et al. *Diseases*. 2024;12(12):331; 55. Zumofen M-H B, et al. *Pharmacoeconomics*. 2023;41(3):253-273; 56. Kuster SP, et al. *Infect Control Hosp Epidemiol*. 2021;42(3):268-273; 57. Johal A, et al. *Open Forum Infect Dis*. 2025;12(Suppl 1):ofae631; 58. U.S. Centers for Disease Control and Prevention. https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html. Accessed September 8, 2025; 59. Gottlieb RL, et al. *N Engl J Med*. 2022;386(4):305-315; 60. Hsu WH, et al. *Pneumonia(Nathan)*. 2025;17(1):12.

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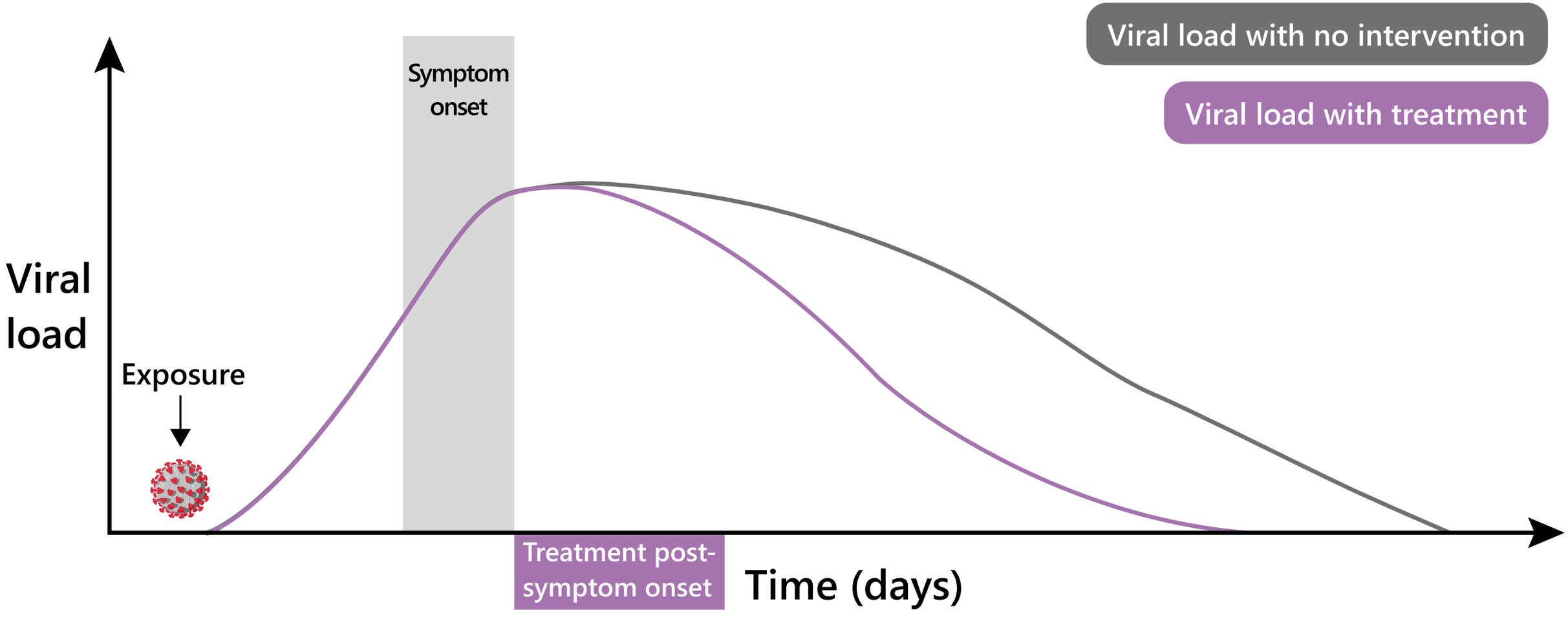
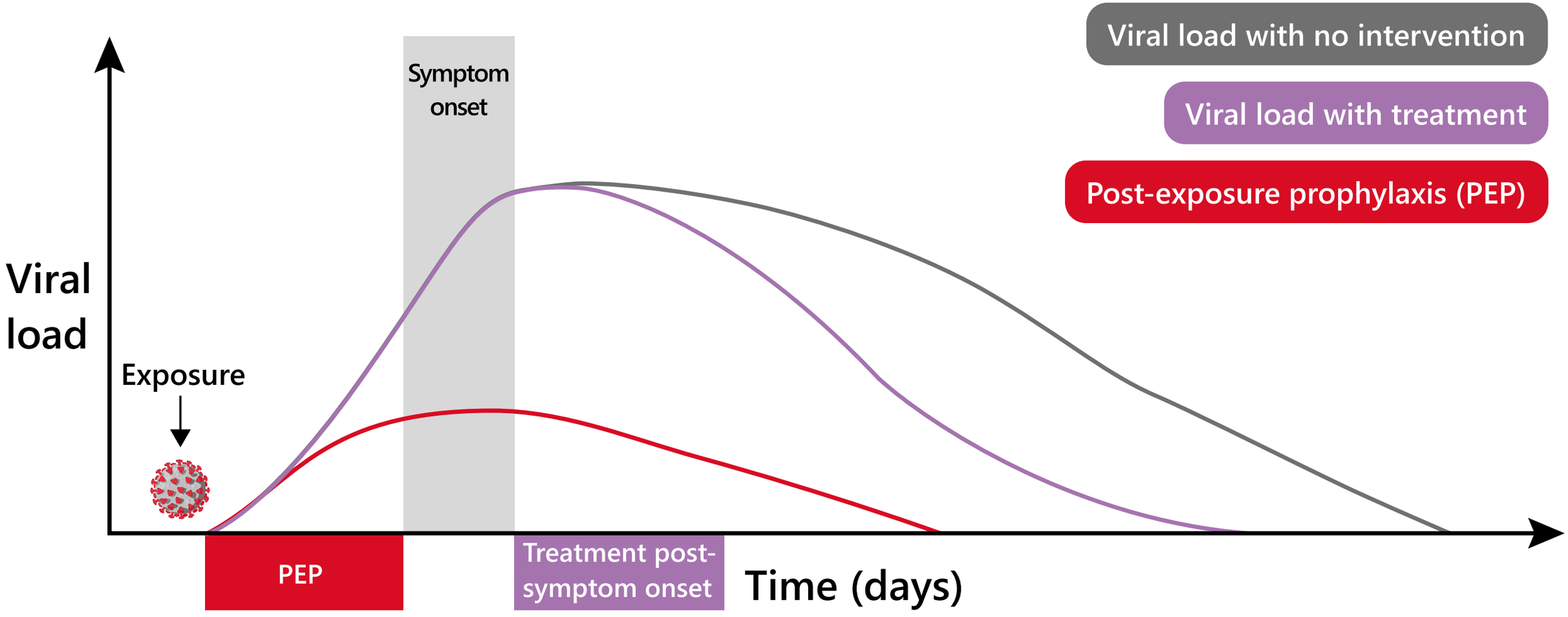
Antiviral intervention is most effective early in the viral replication cycle[14–16]

Initiating treatment after symptom onset has a low impact on the viral clearance[14]



Antiviral intervention is most effective early in the viral replication cycle[14–16]

Post-exposure prophylaxis (PEP) administered immediately after exposure may suppress viral load,[17] reduce secondary household transmission, and slow community spread[18,19]



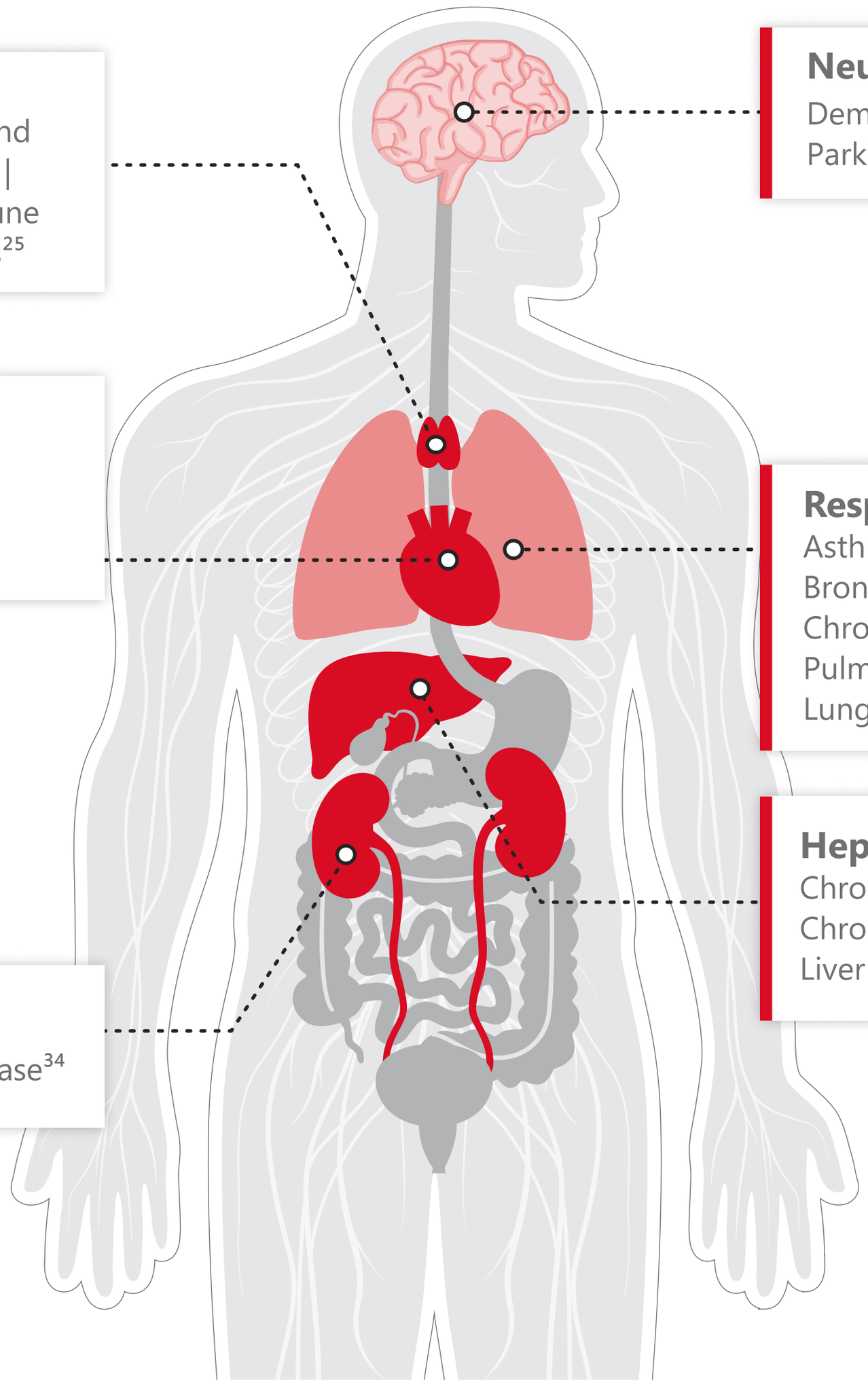
Early intervention may reduce the clinical complications associated with COVID-19[4,5,12,13]

Early antiviral treatment may be beneficial to individuals with underlying comorbid conditions[1-3,21]

Immunological
Multiple Sclerosis and Related Disorders[24] | Systemic Autoimmune Rheumatic Diseases[25]

Cardiovascular
Coronary Artery Disease[26] | Hypertension[27]

Renal
Chronic Kidney Disease[34]



Neurological
Dementia[22] | Epilepsy[22] | Parkinson's Disease[23]

Respiratory
Asthma[28] | Bronchiectasis[29] | Chronic Obstructive Pulmonary Disease[30] | Lung Cancer[31]

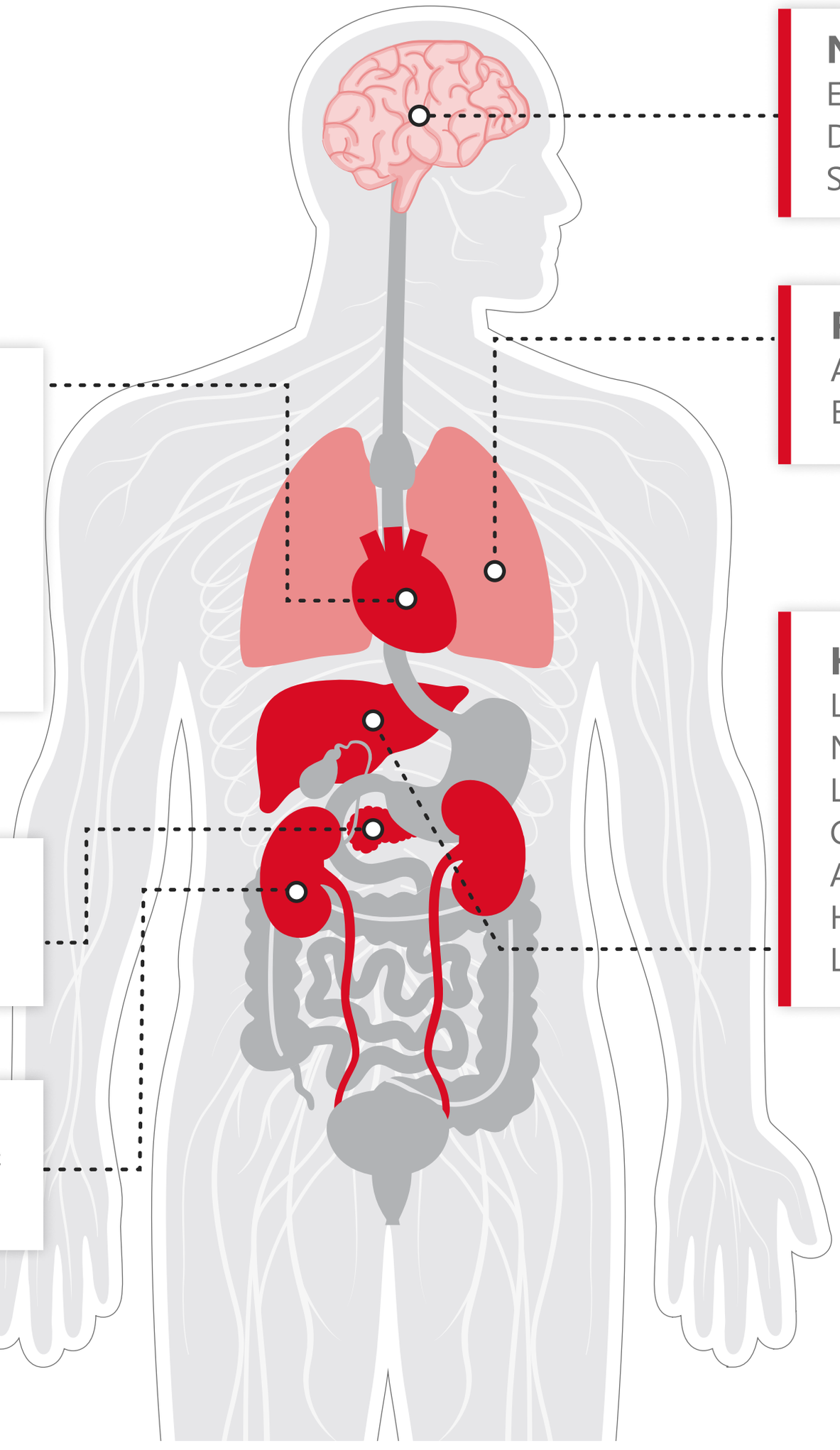
Hepatic
Chronic Hepatitis B[32] | Chronic Liver Disease[33] | Liver Cirrhosis[33]

Even patients with mild COVID-19 may experience exacerbation of pre-existing chronic conditions[35–37]

Early intervention may reduce the clinical complications associated with COVID-19[4,5,12,13]

All Systems | Chronic Conditions | **New-Onset Diseases** | Long COVID

Patients with COVID-19 may experience new-onset, relapsing, or remitting conditions following their infection



Neurological
Encephalopathy[24] |
Dementia[24] |
Seizure[24]

Respiratory
Asthma[38] |
Bronchiectasis[38]

Cardiovascular
Major Adverse Cardiovascular Events[39] |
Arrhythmias[39] |
Heart Failure[39] |
Thrombosis[39] |
Ischemic Heart Disease[39]

Hepatic
Liver Steatosis[40]|
Nonalcoholic Fatty Liver Disease[40] |
Cirrhosis[40] |
Acute Liver Failure[40] |
Hepatitis[40] |
Liver Hemorrhage[40]

Metabolic
Diabetes[41]

Renal
Chronic Kidney Disease[42]

Early antiviral intervention may reduce the risk of new-onset diagnoses following acute COVID-19[2]

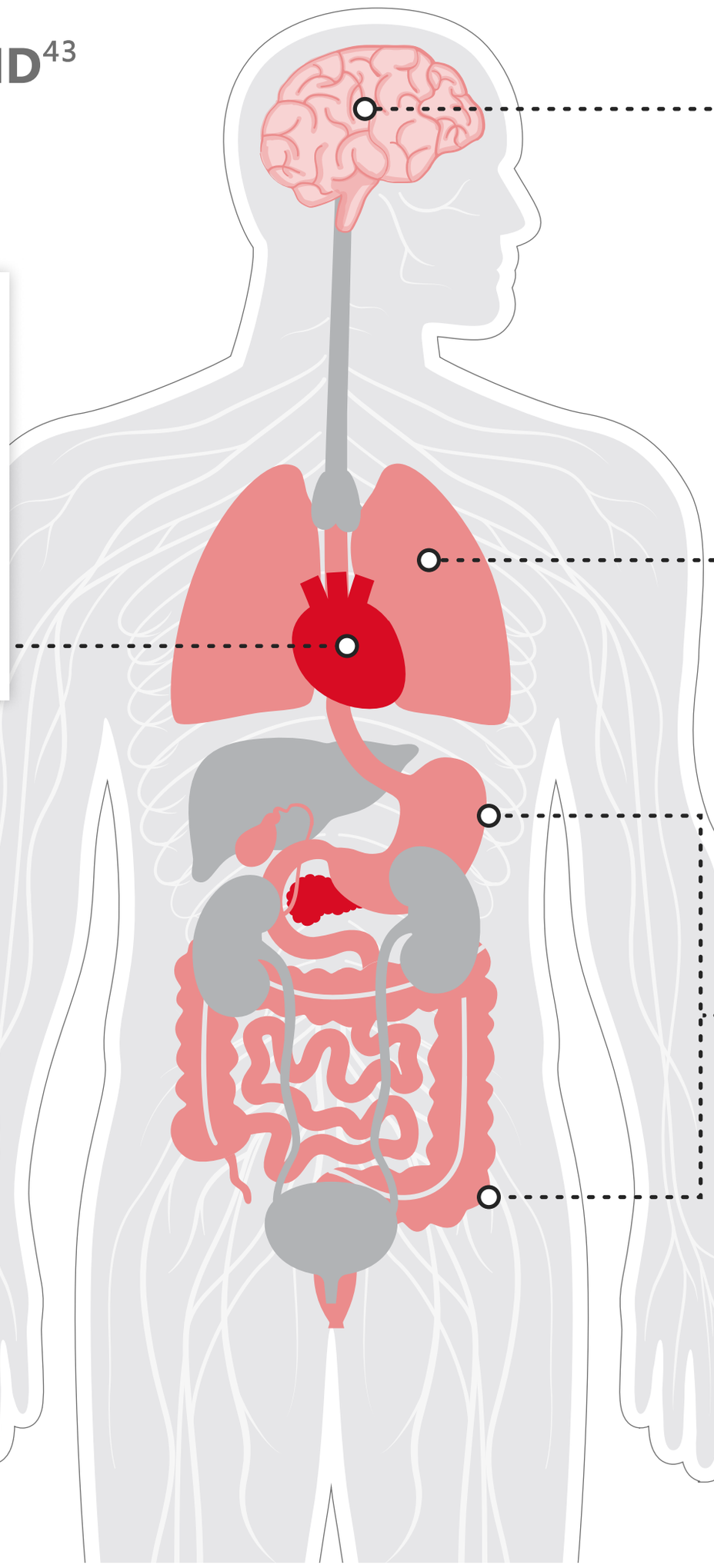
Early intervention may reduce the clinical complications associated with COVID-19[4,5,12,13]

All Systems | Chronic Conditions | New-Onset Diseases | **Long COVID**

Approximately

18 million

adults in the US have experienced long COVID[43]



Neurological
Cognitive Disorders[44] | Encephalitis[44] | Mental Health Disorders[44] | Stroke[44]

Cardiovascular
Dysrhythmias[35] | Ischemic Cardiomyopathy[35] | Inflammatory Heart Disease[35] | Nonischemic Cardiomyopathy[35] | Thrombotic Disorders[35]

Respiratory
Chest pain[45] | Cough[45] | Dyspnea[45,46] | Wheezing[46]

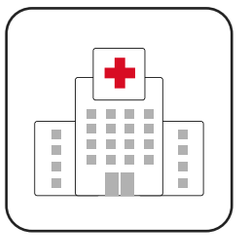
Gastrointestinal
Constipation[47] | Diarrhea[46] | Dysphagia[47] | Dyspepsia[47] | Irritable Bowel Syndrome[47]

Early antiviral treatment during acute COVID-19 may reduce the risk of long COVID and related clinical outcomes[8,9]

Early intervention may prevent outbreaks and reduce the impact of COVID-19 in closed settings[48]

Healthcare Settings | Non-Healthcare Settings

Flip the cards to learn about the importance of early intervention to control COVID-19 outbreaks in hospitals and long-term care facilities (LTCFs):



Hospitals

Hospital-onset SARS-CoV-2 infection is linked to:

↑ Increased morbidity[49]

↑ Increased mortality[49]

>2x Higher risk of in-hospital death with hospital-onset infection[50]

Long-Term Care Facilities

>40% of COVID-19 deaths occurred in LTCFs[51]

Early intervention for COVID-19 was associated with a reduction in:

54% Risk of hospitalization[48]

up to 83% Inpatient disease progression among nursing home residents[48]

Early intervention may prevent outbreaks and reduce the impact of COVID-19 in closed settings[48]

Healthcare Settings	Non-Healthcare Settings

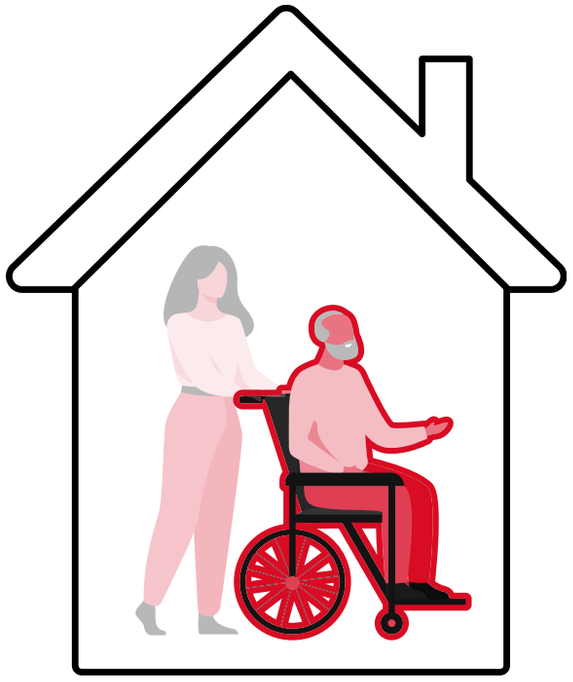
Schools, Universities, and Offices

Hotels, Resorts, and Cruise Ships

Detention Centers

Military Barracks

Early intervention in respiratory infections may preserve quality of life, improve work productivity, and protect vulnerable populations[52,53]



Standard Risk

- **Adults ≥50 years old**[58]
- **Individuals with ≥1 underlying comorbidities**[58]
- **Not up-to-date on vaccinations**[58]

Higher Risk

Early OAV administration of COVID-19 compared to placebo showed:

89% reduced risk of progression to **severe disease**[6]

87% lower risk of **hospitalization** or **mortality**[59]

22% reduction in risk of **ED visits**[60]