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PCCS COVID-19 & CVD QI programme

Patient identification and activation

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Professor Raj Thakkar disclosures

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The speaker has received honoraria from:

Abbott | Amarin | Amgen | AstraZeneca | Bayer | Boehringer Ingelheim | Daiichi Sankyo | Edwards | Medtronic | Novartis | Omron

The speaker is currently employed by AstraZeneca as:

Head of Medical External Engagement and Innovation

The speaker is currently employed by Healthy.io as:

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- Primary care strategies for identifying patients at risk of severe COVID-19 and opportunistic identification of CVD
- Reducing the risk of progression to severe disease
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Link between COVID-19 and CVD

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A prospective cohort study evaluated the short- and long-term associations between COVID-19 and development of CVD outcomes and mortality in the general population[1]

Compared to people without COVID-19, a group of >7,500 people with and without pre-existing CVD who had COVID-19 between March and November 2020 were:[2]

~40% more likely to develop CVD

5x more likely to die during the 18-month follow-up period afterwards (people who had severe COVID-19 were at even higher risk)

People with previous COVID-19 were at higher risk of:[2]

In the short- and long-term ➡

- Heart attacks
- Coronary heart disease
- Heart failure
- Deep vein thrombosis

In the short-term ➡

- Atrial fibrillation
- Stroke

CVD, cardiovascular disease.

1. Wan EYF, et al. Cardiovas Res 2023;119:1718–1727; 2. BHF How does Covid-19 affect your heart? Available at: https://www.bhf.org.uk/informationsupport/heart-matters-magazine/news/coronavirus-and-your-health/what-does-coronavirus-do-to-your-body. Accessed June 2024.

Other risk factors for progression to severe COVID-19 in adults

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Defined by an independent advisory group commissioned by the Department of Health and Social Care (June 2023)

- Down's syndrome and other genetic disorders
- Solid cancer
- Haematological diseases and recipients of haematological stem cell transplant
- Renal disease
- Liver diseases
- Solid organ transplant recipients
- Immune-mediated inflammatory disorders (diseases in which autoimmune or autoinflammation-based pathways are implicated in disease, for example, inflammatory arthritis, connective tissue diseases, inflammatory skin diseases, inflammatory gastrointestinal disease)
- Respiratory conditions
- Immune deficiencies
- HIV/AIDS
- Neurological disorders

AIDS, acquired immunodeficiency syndrome; HIV, human immunodeficiency virus.

NICE. Nirmatrelvir plus ritonavir, sotrovimab and tocilizumab for treating COVID-19 [TA878]. Available at: https://www.nice.org.uk/guidance/ta878. Accessed July 2024.

Risk factors for severe COVID-19 outcomes[1]

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- Increasing age
- Certain underlying medical conditions
- People who are either unvaccinated or not up to date on COVID-19 vaccinations

The CDC systematic review process has identified the following conditions as higher risk (conclusive) for severe COVID-19

• Asthma • Cancer • Cerebrovascular disease • Chronic kidney disease* (risk may be further increased for people receiving dialysis) • Chronic lung diseases (limited to bronchiectasis, COPD, ILD, PE, pulmonary hypertension) • Chronic liver diseases (limited to cirrhosis, NAFLD, alcoholic liver disease, autoimmune hepatitis) • Cystic fibrosis • Diabetes mellitus (Type 1 and Type 2*) • Disabilities†, including Down syndrome • Heart conditions (such as HF, coronary artery disease, or cardiomyopathies) • HIV	• Mental health conditions (limited to mood disorders, including depression and schizophrenia spectrum disorders) • Neurologic conditions limited to dementia† • Obesity (BMI ≥30 kg/m^2 or ≥95th percentile in children) • Physical inactivity • Pregnancy and recent pregnancy • Primary immunodeficiencies • Smoking, current and former • Solid organ or blood stem cell transplantation • Tuberculosis • Use of corticosteroids or other immunosuppressive medications

Higher risk: an underlying medical condition or risk factor that has a published meta-analysis or systematic review or underwent the CDC systematic review process. The meta-analysis or systematic review demonstrates a conclusive increase in risk for at least one severe COVID-19 outcome.

The list of underlying medical conditions is not exhaustive and will be updated as the science evolves.

*Indicates presence of evidence for pregnant and non-pregnant people. †Underlying conditions for which there is evidence in paediatric patients.

BMI, body mass index; CDC, Centers For Disease Control and Prevention; COPD, chronic obstructive pulmonary disease; HF, heart failure; HIV, human immunodeficiency virus; ILD, interstitial lung disease; NAFLD, non-alcoholic fatty liver disease; PE, pulmonary embolism.

1. CDC. Underlying Conditions and the Higher Risk for Severe COVID-19. Available at: https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html. Accessed September 2024.

Risk factors for severe COVID-19 outcomes[1] (cont)

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Conditions with suggestive higher risk for severe COVID-19	Conditions with mixed evidence for severe COVID-19
• Children with certain underlying conditions • Overweight (BMI ≥25 kg/m^2 but <30 kg/m^2) • Sickle cell disease • Substance use disorders	• Alpha 1 antitrypsin deficiency • Bronchopulmonary dysplasia • Hepatitis B • Hepatitis C • Hypertension* • Thalassemia

Suggestive higher risk: an underlying medical condition or risk factor with no published meta-analysis or systematic review or did not undergo the CDC systematic review process. Evidence is supported by mostly cohort, case-control, or cross-sectional studies. (Systematic reviews are available for some conditions for children with underlying conditions.)

Mixed evidence: an underlying medical condition or risk factor that has a published meta-analysis or systematic review or underwent the CDC systematic review process, but the meta-analysis or systematic review is inconclusive.

The list of underlying medical conditions is not exhaustive and will be updated as the science evolves.
*Indicates presence of evidence for pregnant and non-pregnant people.
BMI, body mass index; CDC, Centers For Disease Control and Prevention.

1. CDC. Underlying Conditions and the Higher Risk for Severe COVID-19. Available at: https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html. Accessed September 2024.

Primary care consultations

General consultations with patients who have risk factors for developing severe COVID-19 are an ideal opportunity to identify patients who may be presenting with signs of COVID-19, in whom early intervention may be suitable.

Possible symptoms of COVID-19

- Cough
- Sore throat
- Nausea, vomiting or diarrhoea
- Muscle or body aches
- New loss of taste or smell
- Shortness of breath or diffi culty breathing
- Fatigue
- Fever

CDC. Symptoms of COVID-19. Available at: https://www.cdc.gov/covid/signs-symptoms/?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html. Accessed September 2024.

Identifying patients at risk of severe COVID-19 in primary care

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Proactive identification

- Undertake searches of patients at high risk of severe COVID-19

Opportunistic identification

- During NHS Health Checks[1] (since increasing age is a risk factor for developing severe COVID-19)[2]
- During LTC reviews

Add an alert regarding the risk of developing severe COVID-19 to relevant patient records where appropriate

LTC, long term condition; NHS, National Health Service.

1. NHS. NHS Health Check. Available at: https://www.nhs.uk/conditions/nhs-health-check/. Accessed July 2024; 2. CDC. Underlying Conditions and the Higher Risk for Severe COVID-19. Available at: https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html. Accessed September 2024.

Opportunistic identification of CVD

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BP checks

During COVID-19 Seasonal Vaccination programmes:

The groups to be offered a COVID-19 vaccine in autumn/winter 2024/25 are:

- residents in a care home for older adults
- all adults aged 65 years and over
- persons aged 6 months to 64 years in a clinical risk group, as defined in tables 3 and 4 of the COVID-19 chapter of the UK Health Security Agency (UKHSA) Green Book on immunisation against infectious disease

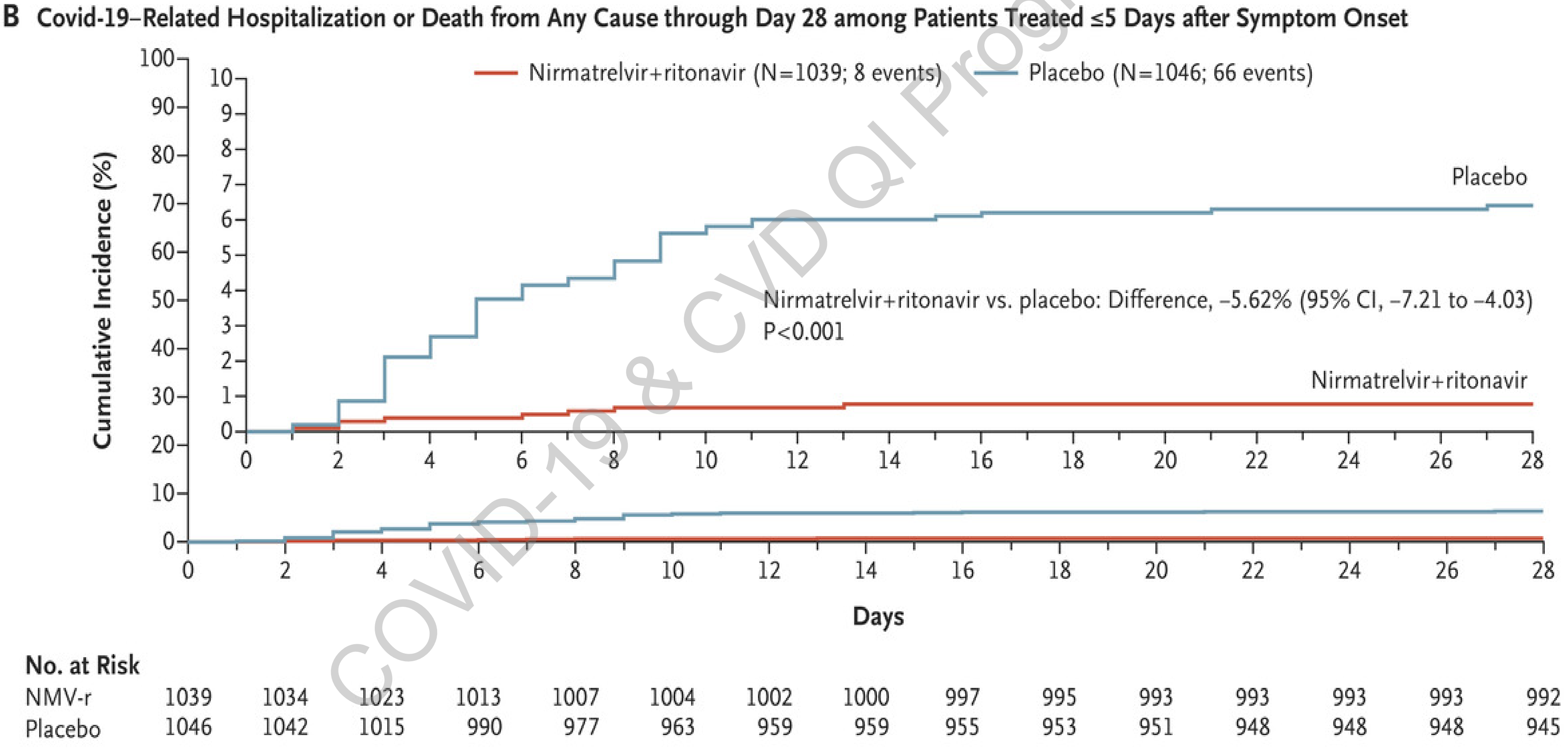
Pulse checks

BP, blood pressure; CVD, cardiovascular disease; UK, United Kingdom.

NHS England. Flu and COVID-19 Seasonal Vaccination Programme: autumn/winter 2024/25. Available at: https://www.england.nhs.uk/long-read/flu-and-covid-19-seasonal-vaccination-programme-autumn-winter-2024-25/. Accessed September 2024.

Nirmatrelvir/ritonavir (Paxlovid) – evidence

89% RR reduction in hospitalisation or death (EPIC-HR trial)



CI, confidence interval; RR, relative risk.
Hammond J, et al. N Engl J Med 2022;386:1397–1408.

Effect of Paxlovid in vaccinated or unvaccinated adult outpatients with COVID-19

A Phase 2–3 trial randomly assigned 1296 adults with confirmed COVID-19 with symptom onset within the past 5 days in a 1:1 ratio to receive Paxlovid or placebo every 12 hours for 5 days.

Eligible for participation:

- Patients fully vaccinated against COVID-19 and who had at least one risk factor for severe disease
- Patients without such risk factors who had never been vaccinated against COVID-19 or had not been vaccinated within the previous year

Participants logged the presence and severity of prespecified COVID-19 signs and symptoms daily from day 1 to day 28.

Primary endpoint:

- Time to sustained alleviation of all targeted COVID-19 signs and symptoms

Median time to sustained alleviation of all targeted signs and symptoms of COVID-19 was: 12 days in the Paxlovid group and 13 days in the placebo group (P=0.60)

No significant difference between participants who received Paxlovid and those who received placebo in the time to sustained alleviation of all signs and symptoms of COVID-19.

Hammond J, et al. N Engl J Med 2024;390:1186–1195.

Key message

Consider Paxlovid in eligible:

- Unvaccinated people who have previously had COVID-19
- People who have not had multiple episodes of COVID-19

Reducing the risk of progression to severe COVID-19

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89% lower risk of progression to severe COVID-19 with Paxlovid for the treatment of symptomatic COVID-19 as compared to placebo, without evident safety concerns, in the EPIC-HR study.[1]

NICE TA878 recommends Paxlovid:[2]

For treating COVID-19 in adults only if they do not need supplemental oxygen for COVID-19 and have any of the following:

- Increased risk for progression to severe COVID-19 (as defined in section 5 of NICE TA878)
- ≥70 years of age
- BMI ≥35 kg/m^2
- Diabetes
- HF

Within 3 months of guidance publication (13 March 2024) – 1 June 2025, the NHS will expand access to Paxlovid for the following groups:

- People ≥85 years of age
- People with end-stage HF who have a long-term ventricular assistance device
- People on the organ transplant waiting list
- People ≥70 years of age, or who have a BMI ≥35 kg/m^2, diabetes or HF, and:
  - Are resident in a care home, or
  - Are already hospitalised

Paxlovid = Nirmatrelvir plus ritonavir.

BMI, body mass index; HF, heart failure; NHS, National Health Service; NICE, National institute for Health and Care Excellence.

1. Hammond J, et al. N Engl J Med 2022;386:1397–1408; 2. NICE. Nirmatrelvir plus ritonavir, sotrovimab and tocilizumab for treating COVID-19 [TA878]. Available at: https://www.nice.org.uk/guidance/ta878. Accessed July 2024.

Proactive HCP–patient communication regarding risk of severe disease may support earlier treatment intervention

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- Proactive communication with patients may involve:

- **Making the patient aware of their risk status** and enhancing understanding of which factors could put them at high risk for severe COVID-19[1,2]
- **Providing reassurance that treatment options are available** for those who test positive for COVID-19 and are at high risk for developing severe COVID-19; discuss treatments available and concomitant medications[3]
- **Ensuring the patient is prepared to act immediately** (e.g., by having a COVID-19 action plan in place)[4]
- **Alerting the patient to the importance of getting tested** as soon as symptoms are experienced or at least 5 days after a recent exposure[5]
- **Emphasizing the necessity of contacting their HCP as soon as possible following a positive test**
  This is especially important if they are at high risk for progression to severe COVID-19[3]

HCP, healthcare professional.

1. CDC. Underlying Conditions and the Higher Risk for Severe COVID-19. Available at: https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html. Accessed September 2024; 2. CDC. People with Certain Medical Conditions and COVID-19 Risk Factors. Available at: https://www.cdc.gov/covid/risk-factors/?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html. Accessed September 2024; 3. CDC. Types of COVID-19 Treatment. Available at: https://www.cdc.gov/covid/treatment/?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/your-health/treatments-for-severe-illness.html. Accessed September 2024; 4. Patel P, et al. Weekly 2023;72:128–131; 5. CDC. Overview of Testing for SARS-CoV-2, the virus that causes COVID-19. Available at: https://archive.cdc.gov/#/details?url=https://www.cdc.gov/coronavirus/2019-ncov/hcp/testing-overview.html. Accessed September 2024.

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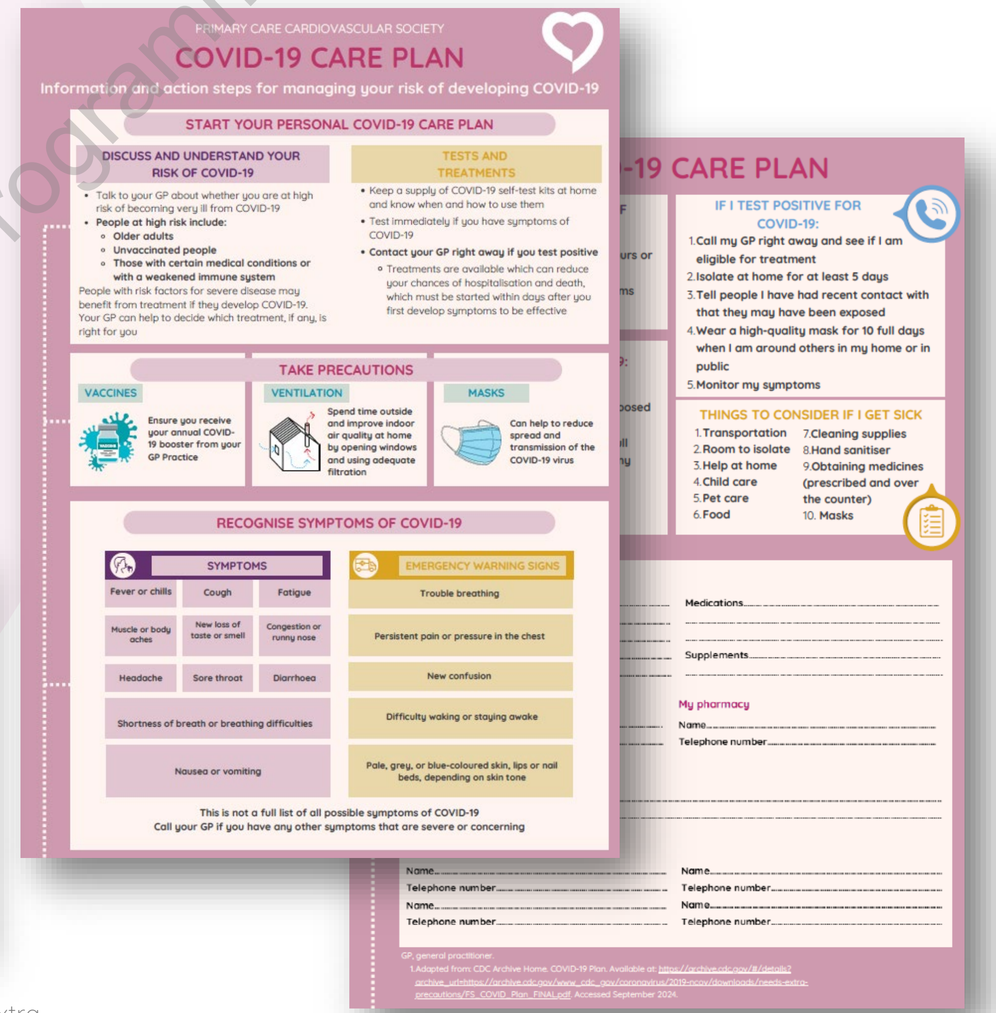
A COVID-19 care plan can support patient self-management

A COVID-19 care plan can support patients to:

- Understand their risk of developing severe COVID-19
- Take precautions to minimise the risk of infection
- Recognise COVID-19 symptoms and emergency warning signs
- Know what to do if they develop symptoms or test positive
- Understand that they must act quickly if symptoms develop to ensure access to treatment where applicable

Download the COVID-19 care plan here



Adapted from: CDC Archive Home. COVID-19 Plan. Available at: https://archive.cdc.gov/#/details?archive_url=https://archive.cdc.gov/www_cdc_gov/coronavirus/2019-ncov/downloads/needs-extra-precautions/FS_COVID_Plan_FINAL.pdf. Accessed September 2024.

Summary

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- NICE and the CDC have outlined certain groups of patients who may be at high risk of progression to severe COVID-19[1,2]
- Primary care teams can identify patients who may be at risk of severe COVID-19 through proactive and opportunistic identification
- The seasonal COVID-19 vaccination programme is an ideal opportunity to identify possible underlying CVD
- A COVID-19 care plan can support self-management, allowing patients to understand what to do if they develop symptoms or test positive for COVID-19[3]

1. NICE. Nirmatrelvir plus ritonavir, sotrovimab and tocilizumab for treating COVID-19 [TA878]. Available at: https://www.nice.org.uk/guidance/ta878. Accessed July 2024; 2. CDC. Underlying Conditions and the Higher Risk for Severe COVID-19. Available at: https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html?CDC_AAref_Val=https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html. Accessed September 2024; 3. CDC Archive Home. COVID-19 Plan. Available at: https://archive.cdc.gov/#/details?archive_url=https://archive.cdc.gov/www_cdc_gov/coronavirus/2019-ncov/downloads/needs-extra-precautions/FS_COVID_Plan_FINAL.pdf. Accessed September 2024.