SUPPLEMENTAL MATERIAL

Table S1. Unadjusted Odds Ratios for Severe COVID-19 Outcomes, by Hypertension and Diabetes Control Status, PCORnet, March 2020–February 2022.

	Hospitalization	Critical Care	Mechanical Ventilation	60-Day Mortality*
	Crude OR (95% CI)	Crude OR (95% CI)	Crude OR (95% CI)	Crude[1] OR (95% CI)
Hypertension (ref=BP <130/80)[†]				
BP 130-139/80-89	0.73 (0.71 - 0.75)	0.72 (0.68 - 0.76)	0.78 (0.73 - 0.84)	0.62 (0.58 - 0.67)
BP 140-159/90-99	1.03 (0.99 - 1.07)	1.13 (1.08 - 1.18)	1.17 (1.08 - 1.26)	0.97 (0.93 - 1.02)
BP ≥160/100	1.48 (1.41 - 1.55)	1.59 (1.48 - 1.71)	1.63 (1.45 - 1.84)	1.34 (1.22 - 1.47)
Diabetes (ref=HbA1c <7%)[‡]				
HbA1c: 7-<9%	1.10 (1.04 - 1.17)	1.10 (1.02 - 1.19)	1.12 (1.01 - 1.23)	1.10 (1.02 - 1.18)
HbA1c: ≥9%	1.52 (1.40 - 1.64)	1.51 (1.38 - 1.65)	1.35 (1.22 - 1.48)	0.96 (0.89 - 1.05)

* 60-Day mortality refers to in-hospital mortality

[†] Analysis limited to patients with hypertension whose BP control status could be categorized (n=518,293); model sample sizes varied depending on participating PCORnet sites. The number of sites that had model convergence was 38, 28, 30, and 34 for each of the outcomes, respectively.

[‡] Analysis limited to patients with diabetes whose HbA1c control status could be categorized (n= 123,557); model sample sizes varied depending on participating PCORnet sites. The number of sites that had model convergence was 32, 25, 29, and 32 for each of the outcomes, respectively.

PCORnet (the National Patient-Centered Clinical Research Network); ref (reference category); BP (blood pressure); OR (odds ratio); 95% CI (95% confidence interval).

Table S2. Adjusted Odds Ratios for Severe COVID-19 Outcomes among Patients with Hypertension, PCORnet, March 2020–February 2022.

	Hospitalization	Critical Care	Mechanical Ventilation	60-Day Mortality
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Age	0.96 (0.95–0.97)	1.05 (1.03–1.06)	1.11 (1.09–1.14)	1.03 (1.02–1.05)
Male (versus female) sex	1.17 (1.13–1.21)	1.39 (1.33–1.46)	1.47 (1.38–1.56)	1.43 (1.35–1.51)
Hispanic (vs. non-Hispanic) ethnicity	1.2 (1.13–1.37)	1.22 (1.07–1.40)	1.39 (1.16–1.68)	1.15 (1.03–1.28)
Black (vs. White) Race	1.55 (1.38–1.74)	1.27 (1.17–1.38)	1.18 (1.06–1.30)	0.98 (0.91–1.06)
Obesity* (vs. BMI <30 kg/m^2)	1.12 (1.07–1.17)	1.16 (1.10–1.23)	1.45 (1.33–1.57)	1.09 (1.03–1.15)
Combined Comorbidity Index score	1.25 (1.23–1.27)	1.19 (1.18–1.21)	1.20 (1.17–1.22)	1.22 (1.21–1.23)
Current (vs. all other) Smoker*	1.06 (0.89–1.26)	0.98 (0.88–1.09)	0.91 (0.80–1.05)	0.98 (0.85–1.14)
Hypertension (ref = BP <130/80)				
BP 130-139/80-89	0.94 (0.91–0.96)	0.97 (0.92–1.02)	1.03 (0.96–1.10)	0.91 (0.86–0.96)
BP 140-159/90-99	1.05 (1.00–1.09)	1.13 (1.10–1.20)	1.17 (1.06–1.29)	1.02 (0.97–1.08)
BP ≥160/100	1.30 (1.23–1.37)	1.30 (1.21–1.40)	1.32 (1.17–1.50)	1.08 (0.98–1.18)
Dexamethasone	N/A	4.84 (3.07–7.63)	4.66 (2.68–8.11)	3.37 (2.46–4.61)
Remdesivir	61.2 (36.40–103.04)	4.83 (3.71–6.31)	4.51 (3.20–6.36)	2.48 (1.94–3.17)
Monoclonal Antibodies	0.65 (0.46–0.90)	0.43 (0.34–0.55)	0.36 (0.27–0.49)	0.43 (0.33–0.55)
Pandemic Phase (ref 5/1/20–2/28/21)				
Pandemic Phase: 3/1/20–4/30/20	2.74 (2.32–3.23)	5.90 (4.69–7.43)	10.42 (8.06–13.47)	3.97 (3.24–4.87)
Pandemic Phase: 3/1/21–6/30/21	1.50 (1.31–1.72)	1.19 (1.06–1.33)	1.01 (0.87–1.17)	1.00 (0.92–1.09)
Pandemic Phase: 7/1/21–12/19/21	1.00 (0.85–1.18)	1.11 (0.96–1.28)	1.12 (0.99–1.25)	1.15 (1.03–1.29)
Pandemic Phase: 12/20/21–2/28/22	0.52 (0.43–0.62)	0.68 (0.59–0.79)	0.57 (0.49–0.67)	0.64 (0.58–0.72)

Analyses limited to patients with hypertension whose BP control status could be categorized (n=518,293); model sample sizes varied depending on participating PCORnet sites. *Obesity and smoking status were missing for a large proportion of patients, so their odds ratios should be interpreted with caution. The reference for Obesity (BMI ≥ 30 kg/m^2) was BMI <30 kg/m^2; we included a separate variable for missing BMI. For smoking, the categories were current smoking versus all other categories of smoking, including never, former, and missing smoking. Models also controlled for age squared, missing BMI, missing ethnicity, missing race, missing sex. The number of sites that had model convergence was 32, 24, 23, and 29 for each of the outcomes, respectively. 60-Day mortality refers to in-hospital mortality. PCORnet (the National Patient-Centered Clinical Research Network); ref (reference category); BMI (body mass index); BP (blood pressure); aOR (adjusted odds ratio); 95% CI (95% confidence interval).

Table S3. Adjusted Odds Ratios for Severe COVID-19 Outcomes among Patients with Diabetes, PCORnet, March 2020–February 2022.

	Hospitalization	Critical Care	Mechanical Ventilation	60-Day Mortality
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Age	0.96 (0.95–0.97)	0.99 (0.98–1.01)	1.06 (1.04–1.08)	1.00 (0.98–1.02)
Male (versus female) sex	1.20 (1.16–1.25)	1.34 (1.26–1.44)	1.42 (1.31–1.53)	1.37 (1.28–1.46)
Hispanic (vs. non-Hispanic) ethnicity	1.18 (1.04–1.34)	1.20 (1.02–1.42)	1.26 (1.04–1.52)	1.07 (0.93–1.24)
Black (vs. White) race	1.42 (1.25–1.60)	1.08 (0.97–1.20)	1.07 (0.94–1.22)	0.90 (0.81–1.00)
Obesity* (vs. BMI <30 kg/m^2)	0.88 (0.83–0.93)	0.90 (0.83–0.96)	1.29 (1.16–1.44)	1.04 (0.94–1.14)
Combined Comorbidity Index score	1.18 (1.16–1.20)	1.15 (1.13–1.17)	1.16 (1.14–1.19)	1.18 (1.16–1.20)
Current (vs. all other) Smoker*	1.03 (0.83–1.28)	0.98 (0.87–1.10)	0.84 (0.72–0.99)	0.91 (0.77–1.08)
Diabetes (ref = HbA1c <7%)				
HbA1c: 7-<9%	1.10 (1.05–1.16)	1.08 (1.00–1.16)	1.03 (0.93–1.12)	1.07 (1.01–1.15)
HbA1c: ≥9%	1.61 (1.47–1.76)	1.42 (1.31–1.54)	1.12 (1.02–1.23)	1.18 (1.09–1.27)
Dexamethasone	N/A	3.79 (2.54–5.65)	3.87 (2.47–6.07)	2.94 (2.19–3.96)
Remdesivir	28.46 (18.23–44.43)	3.21 (2.55–4.04)	3.01 (2.22–4.08)	1.94 (1.54–2.45)
Monoclonal Antibodies	0.45 (0.30–0.66)	0.37 (0.28–0.48)	0.30 (0.22–0.40)	0.36 (0.27–0.48)
Pandemic Phase (ref 5/1/20–2/28/21)				
Pandemic Phase: 3/1/20–4/30/20	2.55 (2.01–3.23)	4.89 (3.90–6.11)	8.47 (6.50–11.04)	3.90 (3.16–4.82)
Pandemic Phase: 3/1/21–6/30/21	1.25 (1.09–1.43)	1.11 (0.98–1.27)	1.01 (0.84–1.22)	1.02 (0.90–1.15)
Pandemic Phase: 7/1/21–12/19/21	0.91 (0.76–1.10)	1.13 (0.98–1.31)	1.13 (1.01–1.26)	1.16 (1.01–1.32)
Pandemic Phase: 12/20/21–2/28/22	0.47 (0.39–0.57)	0.66 (0.58–0.76)	0.58 (0.51–0.66)	0.61 (0.55–0.68)

Analyses limited to patients with diabetes whose HbA1c control status could be categorized (n=123,557); model sample sizes varied depending on participating PCORnet healthcare systems. *Obesity and smoking status were missing for a large proportion of patients, so their odds ratios should be interpreted with caution. The reference for Obesity was BMI <30 kg/m^2; we included a separate variable for missing BMI. For smoking, the categories were current smoking versus all other categories of smoking, including never, former, and missing smoking. Models also controlled for age squared, missing BMI, missing ethnicity, missing race, missing sex. The number of sites that had model convergence was 29, 22, 21, and 26 for each of the outcomes, respectively. 60-Day mortality refers to in-hospital mortality. PCORnet (the National Patient-Centered Clinical Research Network); ref (reference category); BMI (body mass index); BP (blood pressure); aOR (adjusted odds ratio); 95% CI (95% confidence interval).