

**Resilient Drug Supply Project:
Critical Acute Drug List & Critical COVID-19 Drug List
Drug Shortages Reported by ASHP & FDA**

						Shortages as of 10/12/2020	
Drug #	Critical Acute Drugs Generic Name	Drug Category	UMN RDSP	UMN RDSP	ASHP	FDA	
			List of 156 Critical Acute Drugs	List of 40 Critical COVID-19 Drugs	Drug Shortage List	Drug Shortage List	
1	Cisatracurium	Paralytic	X	X	Yes	Yes	
2	Rocuronium	Paralytic	X	X	Yes		
3	Vecuronium	Paralytic	X	X	Yes	Yes	
4	Succinylcholine	Paralytic	X	X			
5	Atracurium	Paralytic	X				
6	Propofol	Sedation	X	X	Yes	Yes	
7	Midazolam	Sedation	X	X	Yes	Yes	
8	Lorazepam	Sedation	X	X	Yes	Yes	
9	Dexmedetomidine	Sedation/Anesthesia	X	X	Yes	Yes	
10	Phenobarbital	Sedation	X				
11	Ketamine	Sedation/Anesthesia	X	X	Yes	Yes	
12	Diazepam	Sedation	X				
13	Lidocaine	Local Anesthetic	X		Yes	Yes	
14	Bupivacaine	Local Anesthetic	X		Yes	Yes	
15	Fentanyl	Pain	X	X	Yes	Yes	
16	Hydromorphone	Pain	X	X	Yes	Yes	
17	Morphine	Pain	X	X	Yes	Yes	
18	Oxycodone	Pain	X	X			
19	Acetaminophen	Pain & Fever	X				
20	Ketorolac	Pain	X		Yes	Yes	
21	Anakinra	Pain	X				
22	Oxygen	Medical Gas	X	X			
23	Nitric Oxide	Medical Gas	X				
24	Sevoflurane	Medical Gas	X				
25	Albuterol	Bronchodilator	X	X	Yes		
26	Ipratropium (Inhaler)	Bronchodilator	X				
27	Azithromycin	Anti-infective	X	X	Yes	Yes	
28	Piperacillin-Tazobactam	Anti-infective	X	X			
29	Cefepime	Anti-infective	X	X	Yes	Yes	
30	Ceftriaxone	Anti-infective	X				
31	Vancomycin	Anti-infective	X	X	Yes		
32	Doxycycline	Anti-infective	X		Yes	Yes	
33	Meropenem	Anti-infective	X	X			
34	Cefazolin	Anti-infective	X	X	Yes	Yes	
35	Levofloxacin	Anti-infective	X				
36	Linezolid	Anti-infective	X				
37	Ampicillin-Sulbactam	Anti-infective	X		Yes		
38	Sulfadiazine-Trimethoprim	Anti-infective	X				
39	Ceftazidime	Anti-infective	X	X	Yes		
40	Ciprofloxacin	Anti-infective	X		Yes		
41	Clindamycin	Anti-infective	X		Yes		
42	Gentamicin	Anti-infective	X		Yes		
43	Imipenem	Anti-infective	X				
44	Metronidazole	Anti-infective	X		Yes	Yes	
45	Ampicillin	Anti-infective	X				
46	Nafcillin	Anti-infective	X				
47	Oxacillin	Anti-infective	X				
48	Penicillin G	Anti-infective	X				
49	Tobramycin	Anti-infective	X		Yes	Yes	
50	Amphotericin B	Anti-infective	X		Yes		

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51	Posaconazole	Antifungal	X			
52	Ganciclovir (IV)	Antiviral	X			
53	Highly Effective Anti-Retroviral Therapies	Antiviral	X			
54	Hydroxychloroquine	Antiviral (Lupus, RA)	X	X	Yes	
55	Chlorhexidine	Antiseptic	X	X		
56	Betadine	Antiseptic	X			
57	Ethanol	Antiseptic	X		Yes	
58	Norepinephrine	Vasopressor	X	X	Yes	
59	Epinephrine	Vasopressor	X	X	Yes	Yes
60	Vasopressin	Vasopressor	X	X		
61	Phenylephrine	Vasopressor	X			
62	Amiodarone	Cardiovascular	X	X	Yes	
63	Hydralazine	Cardiovascular	X		Yes	Yes
64	Nicardipine	Cardiovascular	X		Yes	
65	Labetalol	Cardiovascular	X		Yes	Yes
66	Metoprolol	Cardiovascular	X		Yes	Yes
67	Esmolol	Cardiovascular	X			
68	Verapamil	Cardiovascular	X		Yes	
69	Diltiazem	Cardiovascular	X		Yes	Yes
70	Atropine	Cardiovascular	X		Yes	Yes
71	Adenosine	Cardiovascular	X			
72	Epoprostenol	Pulmonary Vasodilator	X			
73	Bosentan	Pulmonary Vasodilator	X			
74	Milrinone	Pulmonary Vasodilator	X			
75	Dexamethasone	Corticosteroids	X		Yes	Yes
76	Methylprednisolone	Corticosteroids	X			
77	Hydrocortisone	Corticosteroids	X		Yes	Yes
78	Betamethasone	Corticosteroids	X		Yes	
79	Prednisone	Corticosteroids	X		Yes	
80	Furosemide	Diuretic	X		Yes	Yes
81	Potassium chloride (IV)	Electrolyte Replacement	X			
82	Magnesium (IV)	Electrolyte Replacement	X		Yes	
83	Calcium chloride	Electrolyte Replacement	X	X	Yes	Yes
84	Calcium gluconate	Electrolyte Replacement	X			
85	Calcium carbonate	Electrolyte Replacement	X			
86	Sevelamer carbonate	Electrolyte Replacement	X			
87	Sodium bicarbonate	Electrolyte Replacement	X		Yes	Yes
88	Phosphorous	Electrolyte Replacement	X			
89	Zinc	Electrolyte Replacement	X			
90	Sodium chloride (0.9%, 3%, 5%)	Electrolyte & Fluids	X		Yes	Yes
91	Lactated Ringers	Electrolyte & Fluids	X			
92	Dextrose (50%)	Electrolyte & Fluids	X		Yes	Yes
93	Anticoagulant Citrate Dextrose Solution A	Electrolyte & Fluids	X			
94	Hemodialysis, Intermittent (IHD) Solution	Electrolyte & Fluids	X			
95	Peritoneal Dialysis (PD) Solution	Electrolyte & Fluids	X			
96	Renal Replacement Therapy, Continuous (CRRT)	Electrolyte & Fluids	X			Yes
97	Organ Preservation Solution	Electrolyte & Fluids	X			
98	Enoxaparin	Anticoagulant	X	X	Yes	
99	Heparin	Anticoagulant	X	X	Yes	Yes
100	Argatroban	Anticoagulant	X	X	Yes	
101	Tissue Plasminogen Activator (TPA)	Anticoagulant	X			
102	Warfarin	Anticoagulant	X			
103	Prothrombin complex conc. (Kcentra)	Warfarin Reversal	X			
104	Vitamin K (phytonadione)	Warfarin Reversal	X			

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105	Insulin, Short acting- Regular (aspart)	Insulin & Endocrine	X			
106	Insulin, Long acting (Lantus, NPH)	Insulin & Endocrine	X			
107	Desmopressin Acetate (DDAVP)	Insulin & Endocrine	X		Yes	
108	Glucagon	Insulin & Endocrine	X			
109	Valproate sodium	Anti-epileptic	X		Yes	
110	Carbamazepine	Anti-epileptic	X			
111	Fosphenytoin	Anti-epileptic	X			
112	Levetiracetam	Anti-epileptic	X		Yes	Yes
113	Phenytoin	Anti-epileptic	X		Yes	
114	Antivenom, Snake (CroFab)	Antidote	X			
115	Antivenom, Spider	Antidote	X			
116	Dantrolene	Antidote	X			
117	Diphenhydramine	Antidote	X		Yes	Yes
118	Epinephrine (EpiPen, auto-injector)	Antidote	X		Yes	Yes
119	Levocarnitine	Antidote	X			
120	Lipid emulsion (IV)	Antidote	X			
121	Methylene Blue	Antidote	X			
122	N-acetylcysteine	Antidote	X		Yes	
123	Naloxone	Antidote	X			
124	Neostigmine	Antidote	X			
125	Protamine	Antidote	X			
126	Rabies Vaccine IG	Antidote	X			
127	Sugammadex	Antidote	X			
128	Tetanus toxoid	Antidote	X			
129	Vitamin B12 (hydroxocobalamin)	Antidote	X			
130	Immune globulin (IV)	Immunodeficiency	X		Yes	
131	Epoetin	Blood Modifier	X			
132	Granulocyte-Colony Stimulating Factor (G-CSF)	Blood Modifier	X			
133	Granulocyte-Macrophage Colony- Stimulating Factor	Blood Modifier	X			
134	NPEG-Granulocyte-Colony Stimulating Factor (NPEG-G-CSF)	Blood Modifier	X			
135	Blood Factor IX	Hemophilia	X			
136	Blood Factor VII	Hemophilia	X			
137	Blood Factor VIII	Hemophilia	X			
138	Anti-inhibitor coagulant complex (FEIBA)	Hemophilia	X			
139	Tranexamic Acid	Hemophilia	X		Yes	
140	Mycophenolate Mofetil (MMF)	Immunosuppressant	X		Yes	
141	Tacrolimus	Immunosuppressant	X		Yes	Yes
142	Cyclophosphamide (CHOP regimen)	Lymphoma / Leukemia	X			
143	Doxorubicin (CHOP regimen)	Lymphoma / Leukemia	X		Yes	
144	Mechlorethamine (MOPP regimen)	Lymphoma / Leukemia	X			
145	Procarbazine (MOPP regimen)	Lymphoma / Leukemia	X			
146	Vincristine (CHOP, MOPP regimen)	Lymphoma / Leukemia	X			
147	Ondansetron (oral & inj)	Anti-emetics	X		Yes	Yes
148	Prochlorperazine	Anti-emetics	X		Yes	
149	Metoclopramide	Anti-emetics	X			
150	Methylergonovine	Pregnancy-related Medication	X			
151	Oxytocin	Pregnancy-related Medication	X			Yes
152	Surfactants	Pregnancy-related Medication	X			
153	Terbutaline	Pregnancy-related Medication	X			
154	Fluoxetine	Anti-psychotic	X			
155	Haloperidol	Anti-psychotic	X			
156	Olanzapine	Anti-psychotic	X			

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Additional Critical Drugs for Treatment of COVID-19 Patients						
C1	Remdesivir*	Other Critical COVID-19 Drugs		X	Yes	Yes
C2	Lopinavir-Ritonavir	Other Critical COVID-19 Drugs		X		
C3	Oseltamivir	Other Critical COVID-19 Drugs		X		
C4	Chloroquine	Other Critical COVID-19 Drugs		X	Yes	
C5	Droperidol	Other Critical COVID-19 Drugs		X		
C6	Etomidate	Other Critical COVID-19 Drugs		X	Yes	Yes
C7	Fluconazole	Other Critical COVID-19 Drugs		X	Yes	
C8	Vitamin C	Other Critical COVID-19 Drugs		X		
# of Drugs on Critical List			156	40		
# of Drugs in Shortage (ASHP)			67	29	71	
% of Drugs in Shortage (ASHP)			42.9%	72.5%		
# of Drugs in Shortage (FDA)			40	18		42
% of Drugs in Shortage (FDA)			25.6%	45.0%		

Resilient Drug Supply Project (RDSP)

The Resilient Drug Supply Project is a research program of the University of Minnesota's CIDRAP and PRIME Institute. The RDSP has been funded by a generous gift from the Walton Family Foundation

UMN RDSP List of 156 Critical Acute Drugs

Critical Acute Drugs are drugs that "when medically needed in acute care must be available and used within hours or days of the need or the patient will suffer serious outcomes which may include disability or death. Absence of a Critical Acute Drug, or lack of availability of an effective substitute, may cause serious health outcomes or limited ability to provide humane care."

Source of Critical Acute Drug List: Created by an expert panel convened by the Univ. of Minnesota's RDSP on December 11 & 12, 2018.

Participating experts came from government, academia, and the private sector and represented the fields of pharmacy, medicine, nursing, public health, others in clinical health care, pharmaceutical supply chains, emergency preparedness and response, emergency medical services, and drug distribution.

UMN RDSP List of 40 Critical COVID-19 Drugs

Critical COVID-19 Drugs: drugs used in the active treatment of COVID-19 positive patients or their COVID-19 related symptoms.

Source of Critical COVID-19 Drug List: Created by the Univ. of Minnesota's Resilient Drug Supply Project staff in January of 2020.

"X" means that a drug is on the list named at the top of the column.

"Yes" means that a drug is on the active shortage list named at the top of the column (either ASHP or FDA).

* Limited quantities of remdesivir have been provided by Gilead to the US DHHS for distribution, but the drug is not generally available in the market.

() Information in parentheses after a drug name indicates a specific dosage form, strength or product name that is of interest on the Critical List.

ASHP Drug Shortage List: Drug shortages reported by the American Society of Health Systems can be found at:

<https://www.ashp.org/Drug-Shortages/Current-Shortages/Drug-Shortages-List?page=CurrentShortages&loginreturnUrl=SSOCheckOnly>

FDA Drug Shortage List: Drug shortages reported by the U.S. Food & Drug Administration can be found at:

<https://www.accessdata.fda.gov/scripts/drugshortages/default.cfm>