

Excessive blood collection can lead to complications such as phlebotomy-induced (iatrogenic) anemia. Monitoring the volume of blood collected from patients susceptible to phlebotomy-induced anemia is critical to ensure that frequent diagnostic sampling does not complicate patient care and/or threaten their well-being¹.

Health care providers: Apply these guidelines to coordinate test orders and authorize blood collection to minimize patient safety risks: The total volume of blood collected must be limited based on the patient's weight and the volume of blood requested over a specified time period:

- 5% of total blood volume within a 24 hour period
- 10% of total blood volume over an 8 week period¹

Note: The blood volume for children is approximately 75-80 mL/kg, and is higher in newborns; and approximately 65-70 mL/kg for adults¹.

Phlebotomists: Use the following table as a guide for maximum volume limit for a single blood collection. Requests exceeding these volumes require physician, nurse or authorized health care provider review and authorization before proceeding with blood collection.

Maximum Volume for a Single Blood Collection

On Patients Weighing Less than 45 kg (100 lb)

Volumes indicated are lower than the recommended 5% to allow for potential multiple collections.

Patient weight Pounds	Patient weight Kilograms	Maximum Blood Volume (mL)
4	1.8	1
5	2.3	1
6	2.7	2
7	3.2	3
8	3.6	4
9	4.1	4
10	4.5	5
11	5.0	6
12	5.5	7
13	5.9	8
14	6.4	8
15	6.8	9
16	7.3	10
17	7.7	10
18	8.2	11
19	8.6	11
20	9.1	12
21	9.5	12
22	10.0	12
23	10.5	13
24	10.9	13
25	11.4	13
26	11.8	14
27	12.3	14
28	12.7	15
29	13.2	15
30	13.6	15
31	14.1	16
32	14.5	16
33	15.0	16
34	15.5	17
35	15.9	17
36	16.4	18
37	16.8	18
38	17.3	18
39	17.7	19
40	18.2	19
41	18.6	19
42	19.1	20
43	19.5	20
44	20.0	21
45	20.5	21
46	20.9	21
47	21.4	22
48	21.8	22
49	22.3	22
50	22.7	23

Patient weight Pounds	Patient weight Kilograms	Maximum Blood Draw (mL)
51	23.2	23
52	23.6	23
53	24.1	24
54	24.5	24
55	25.0	25
56	25.5	25
57	25.9	25
58	26.4	26
59	26.8	26
60	27.3	26
61	27.7	27
62	28.2	27
63	28.6	28
64	29.1	28
65	29.5	28
66	30.0	29
67	30.5	30
68	30.9	30
69	31.4	30
70	31.8	30
71	32.3	30
72	32.7	30
73	33.2	30
74	33.6	30
75	34.1	30
76	34.5	30
77	35.0	30
78	35.5	30
79	35.9	30
80	36.4	30
81	36.8	30
82	37.3	30
83	37.7	30
84	38.2	30
85	38.6	30
86	39.1	30
87	39.5	30
88	40.0	30
89	40.5	30
90	40.9	30
91	41.4	30
92	41.8	30
93	42.3	30
94	42.7	30
95	43.2	30
96	43.6	30
97	44.1	30
98	44.5	30
99	45.0	30

Data calculated by Dr. Leland Baskin, CLS, July 2007; based on Garza D, Becan-McBride K. Phlebotomy Handbook. Stamford, Connecticut: Appleton & Lange, 1999: 258.

1. CLSI. *Collection of Diagnostic Venous Blood Specimens*. 7th ed. CLSI standard GP41 Wayne, PA: Clinical and Laboratory Standards Institute; 2017