



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-being<sup>1</sup>.

### Health care providers:

Apply these guidelines to coordinate test orders and to 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 period<sup>1</sup>

Note: The blood volume for children is approximately 75-80 mL/kg, and is higher in newborns; and approximately 65-70 mL/kg for adults<sup>1</sup>.

### Phlebotomists:

Use the following table as a guide for maximum volume limit for a single blood collection.

A patient's clinical condition may require a volume exceeding maximum volume. A request exceeding the maximum blood volume requires physician, nurse or authorized health care provider's review and authorization before proceeding with blood collection. When permission is granted to exceed maximum volume, document the authorization, including authorizing name and date and time.

#### Maximum Volume for a Single Blood Collection on Patients Weighing Less than 45 kg (100 lb)

- Volumes indicated are lower than the recommended 5% within a 24 hour period to allow for potential multiple collections.
- As an exception, when blood cultures are requested the volume collected for the blood cultures can be in addition to the maximum volume allowed for a single blood collection.

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

Patient weight Pounds Range	Patient weight Kilograms Range	Maximum Blood Draw (mL)
22	10.0	12
23 – 25	10.5 – 11.4	13
26 – 27	11.8 – 12.3	14
28 – 30	12.7 – 13.6	15
31 – 33	14.1 – 15.0	16
34 – 35	15.5 – 15.9	17
36 – 38	16.4 – 17.3	18
39 – 41	17.7 – 18.6	19
42 – 43	19.1 – 19.5	20
44 – 46	20.0 – 20.9	21
47 – 49	21.4 – 22.3	22
50 – 52	22.7 – 23.6	23
53 – 54	24.1 – 24.6	24
55 – 57	25.0 – 25.9	25
58 – 60	26.4 – 27.3	26
61 – 62	27.7 – 28.2	27
63 – 65	28.6 – 29.5	28
66 – 99	30.0 – 45.0	30

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