


Pathogens transmitted in red blood cell transfusions: An up-to-date table

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KEYWORDS Blood transfusions; pathogens; red blood cells

According to a recent publication, 36,000 units of red blood cells are transfused into patients each day in the United States.¹ Fortunately, with excellent screening techniques now in place, the associated risk of transmitting pathogens is extremely small, even for those of greatest concern—1 in 1.5 million for HIV, 1 in 1.1 million for hepatitis C virus, and 1 in 282,000 for hepatitis B virus.² But if you are the recipient of an infectious unit, your risk is 100%, and you could die as a result.³

Table 1. Pathogens transmitted in red blood cell transfusions^a

Viruses	Bacteria	Protozoa	Prions
Chikungunya virus ⁴	<i>Anaplasma phagocytophilum</i> ²⁵	<i>Babesia microti</i> ³⁵	Variant Creutzfeldt-Jacob ⁴¹
Colorado tick fever virus ⁵	<i>Bartonella</i> species ²⁶	<i>Leishmania donovani</i> ³⁶	
Cytomegalovirus ⁶	<i>Borrelia recurrentis</i> (relapsing fever) ²⁷	Malaria ³⁷	
Dengue virus ⁷	<i>Brucella</i> species ²⁸	<i>Mansonella perstans</i> (microfilaria) ³⁸	
Epstein-Barr virus ⁸	<i>Clostridium perfringens</i> ³	<i>Toxoplasma gondii</i> ³⁹	
Hepatitis A virus ⁹	<i>Enterobacter cloacae</i> ³	<i>Trypanosoma cruzi</i> (Chagas) ⁴⁰	
Hepatitis B virus ^{2,10}	Enterococci ³		
Hepatitis C virus ^{2,11}	<i>Klebsiella pneumoniae</i> ²⁹		
Hepatitis D virus ¹²	<i>Propionibacterium acnes</i> ³		
Hepatitis E virus ¹³	<i>Pseudomonas</i> species ^{3,30}		
Hepatitis G virus ¹⁴	<i>Rickettsia rickettsii</i> ³¹		
Human herpesvirus 8 ¹⁵	<i>Serratia liquefaciens</i> ³²		
Human immunodeficiency virus ²	<i>Staphylococcus aureus</i> ³		
Japanese encephalitis virus ¹⁶	<i>Treponema pallidum</i> (syphilis) ³³		
Parvovirus ¹⁷	<i>Yersinia enterocolitica</i> ^{3,34}		
SEN virus ¹⁸			
Tick-borne encephalitis virus ¹⁹			
Torque-tenovirus ^{20,21}			
West Nile virus ²²			
Yellow fever vaccine virus ²³			
Zika virus ²⁴			

^aExcludes unproved cases and transfusions of platelets and other blood products.

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Received March 14, 2018; Accepted March 16, 2018.

Given these facts, we wondered how many and what kinds of pathogens have been transmitted in red blood cell transfusions. So we launched a painstaking review of the extensive literature on this subject. We then constructed a handy, comprehensive, and up-to-date table of our findings—categorized and alphabetized (*Table 1*). Sharing that information and the supporting references is the purpose of this report.

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