Salmonella enterica is commonly acquired from contaminated food and is an important cause of illness worldwide. Interventions are needed to control Salmonella; subtyping Salmonella by serotyping is useful for targeting such interventions. We, therefore, analyzed the global distribution of the 15 most frequently identified serovars of Salmonella isolated from humans from 2001 to 2007 in laboratories from 37 countries that participated in World Health Organization Global Foodborne Infections Network and demonstrated serotyping proficiency in the Global Foodborne Infections Network External Quality Assurance System. In all regions throughout the study period, with the exception of the Oceania and North American regions, Salmonella serovars Enteritidis and Typhimurium ranked as the most common and second most common serovar, respectively. In the North American and Oceania (Australia and New Zealand) regions, Salmonella serovar Typhimurium was the most common serovar reported, and Salmonella serovar Enteritidis was the second most common serovar. During the study period, the proportion of Salmonella isolates reported from humans that were Salmonella serovar Enteritidis was 43.5% (range: 40.6% [2007] to 44.9% [2003]), and Salmonella serovar Typhimurium was 17.1% (range: 15% [2007] to 18.9% [2001]). Salmonella serovars Newport (mainly observed in Latin and North American and European countries), Infantis (dominating in all regions), Virchow (mainly observed in Asian, European, and Oceanic countries), Hadar (profound in European countries), and Agona (intense in Latin and North American and European countries) were also frequently isolated with an overall proportion of 3.5%, 1.8%, 1.5%, 1.5%, and 0.8%, respectively. There were large differences in the most commonly isolated serovars between regions, but lesser differences between countries within the same region. The results also highlight the complexity of the global epidemiology of Salmonella and the need and importance for improving monitoring data of those serovars of highest epidemiologic importance.