In this paper, we consider confidential multicasting in multi-hop multi-antenna decode-and-forward (DF) relay networks, where a source sends a secure common message to multiple destinations in the presence of multiple eavesdroppers with the help of a multi-antenna DF relay located at each hop. Under an overall power constraint, we first show that the optimization problem for relay beamformer design and power allocation to maximize the achievable multicast secrecy rate in a two-hop multi-antenna relay network can be solved by using semidefinite relaxation and bisection technique. Further, we also propose a suboptimal iterative sequential update scheme for a multi-hop relay network including more than two hops. At each iteration, the relay beamformer at each hop is updated sequentially by solving an extended generalized eigenvector problem for a multiple-destination multiple-eavesdropper case, and the power allocation is updated by using the bisection technique with the feasibility problem of linear programming. Numerical results are presented to verify the multicast secrecy rates achieved by the proposed schemes in multi-hop multi-antenna DF relay networks.