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ABSTRACT There is still an abundance of infected disease in the world despite the widespread availability of the measles vaccination since 1963. Even though it was declared eradicated in the U.S. in 2000, secondary infections have continued to occur since 2008 as a result of importation. Since it spreads so quickly and causes so many deaths among those who have been hospitalized or are seeking medical attention, measles is both a health and economic problem. The disease is endemic in some countries, with an annual incidence of 1% 18.2 per 100,000 children in 2008, with a 1.2 percent death rate. As a result, there is a need of a mathematical model to treat measles has reduced the disease's prevalence in society, and reducing its incidence through preventative measures will aid in its eradication. So we use Singular type Caputo fractional order derivative that is used to examine the overall number of people who have recovered from measles sickness either naturally or as a result of therapy in this study's non-integers-order model. To arrive at the system of fractional differential equations, we use the Caputo fractional derivative operator of order X (0,1).