OBJECTIVES: To compare the cost-effectiveness of dual treatment (pegylated interferon-α2b/polyethylene glycol-interferon-α2b, Peg-IFN/PEG-INF) for Hepatitis C virus chronic infection against three two-treatments with boceprevir (PEG-INF/IFN/RBV/BOC) and telaprevir (PEG-INF/IFN/RBV/TVR). METHODS: We developed a Markov model from the perspective of the Peruvian Ministry of Health. We considered a 10 year time horizon, one-year Markov cycles, and a one-dollar discount rate and quality adjusted life years (QALYs) as a measure of effectiveness. Costs were calculated in 2015 Peruvian Soles (S/.) and converted to U.S. Dollars (USD). We calculated incremental cost-effectiveness ratios (ICER) to assess model uncer