Dark-state polariton collapses and revivals ODELL COLLINS, STEWART JENKINS, DZMITRY MATSUKEVICH, THIERRY CHANELIERE, SHAU-YU LAN, ALEX KUZMICH, T.A. BRIAN KENNEDY, School of Physics, Georgia Institute of Technology — We investigate the dynamics of dark-state polaritons in an atomic ensemble with ground-state degeneracy. A signal light pulse may be stored and retrieved from the atomic sample by adiabatic variation of the amplitude of a control field. During the storage process, a magnetic field causes a rotation of the atomic hyperfine coherences, leading to collapses and revivals of the dark-state polariton number. These collapses and revivals are observed in measurements of the retrieved signal field, as a function of storage time and magnetic field orientation. We explain the observed reduction of revival amplitudes by accounting for magnetic field gradients within the atomic sample.