Objectives: This clinical study compared direct-to-consumer and professionally-dispensed hydrogen peroxide strip tooth whitening systems. Methods: 51 subjects were randomized to either Oral-B® Rembrandt Professional Whitening Strips (hydrogen peroxide tab strips worn once daily for 7 days) or Crest® Whitestrips® Premium Plus (10% hydrogen peroxide strips applied twice daily for 10 days). Treatment followed the manufacturer’s written instructions which included 30 minutes wear per strip application. Safety was measured from interview and examination, while efficacy was assessed objectively from CIELAB digital measurements of the maxillary anterior teeth. Groups were compared at Day 8 and end-of-treatment (Day 8 for the professional strip and Day 11 for the retail strip) using the analysis of covariance method. Results: The predominantly Hispanic study population averaged 40 years of age. Adjusting for baseline tooth color and age, groups were significantly different (p < 0.02) for the head-to-head comparison at Day 8 for both $\Delta b^*$ and $\Delta L^*$. At end-of-treatment, adjusted means (SE) for $\Delta b^*$ were –0.7 (0.16) for the professional strip at Day 8 compared to –2.2 (0.16) for the retail strip at Day 11. For $\Delta L^*$ at end-of-treatment, adjusted means (SE) were 1.3 (0.20) for the professional strip compared to 2.3 (0.21) for the retail strip. Groups differed significantly (p < 0.002) at end-of-treatment for both $\Delta b^*$ and $\Delta L^*$. Overall occurrence of oral irritation (15%) and tooth sensitivity (12%) was low in this study. Conclusion: Use of a direct-to-consumer 10% hydrogen peroxide whitening strip provided superior efficacy relative to a professionally dispensed whitening tab strip.