INTRODUCTION: In Japan, colorectal cancer is one of the increasing cancer in incidence, so we have the mass screening system for colorectal cancer to fall mortality from 1987 in FUKUI Prefecture. The purpose of this study was to analyze interval cancers in colorectal cancer screening and to consider the effective planning of cancer control.

METHODS: We collated the data from 170,231 individual screenings for colorectal cancer conducted between 1 April 2004 and 31 March 2009 with the FUKUI Cancer Registry, to measure sensitivity and specificity and to identify the colorectal cancers diagnosed outside cases of the screening program with fecal occult blood test. Interval cancers are defined the false negative cases that diagnosed outside of the screening program within two years after screening examination.

RESULTS: The 64 interval cancers and 300 screening cases were detected, so sensitivity and specificity were 0.82 and 0.95, respectively. Mean age of interval cancer; 71.5 years-old is significantly higher than that of screening cases; 67.1. StageIV cancers were 17.2% in interval cancers and 6.6% in screening cases. There were no histological difference between interval cancers and screening cases. The 5-year relative survival rates for colorectal cancer were calculated 91.2% as screening cases and 88.3% as interval cancers. Hazard ratio of interval cancers is 2.47.

CONCLUSIONS: Mortality of colorectal cancer is not significantly decreasing in Fukui prefecture. One reason why that the annual rate of StageIV cancer has remained almost unchanged. Mass screening system seems to be effective for early diagnosis and treatment of colorectal cancer. So we must continue to observe further trends in mortality for colorectal cancer, and to improve public participation in mass screening examinations. Furthermore, we must do the effort to decrease the interval cancers. This data is useful for cancer control planning of local government.