

## 255770 Comprehensive Cancer Assessment in Hinkley, California: Did Erin Brockovich get it right?

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Background: Hinkley is a desert community known for the “Erin Brockovich” Film that alleged a cancer excess from groundwater contaminated with chromium 6 [Cr(VI)]. The carcinogenic role for aqueous Cr(VI) is unclear. Methods: We assessed observed and expected counts of cancer in Hinkley (1996-2008). Indirect standardization yielded expected counts adjusted for age, sex, race/ethnicity, population size, and size change. Observed cancers divided by adjusted expected counts defined standardized incidence ratios (SIR) with 95 percent confidence intervals (CI). Results: Adjusting for demographic characteristics, the observed number for all cancers combined (SIR; 95% CI=0.91; 0.78, 1.04) and each of 15 specific cancers did not differ significantly from expected. Observed counts for digestive (SIR; 95% CI=0.72; 0.48, 1.03) and prostate (SIR; 95% CI=0.65; 0.40, 0.98) cancers were below expected, while no cases of pancreatic or nasopharyngeal cancers occurred. The colorectal cancer (CRC) count was not elevated, although 33% of Hinkley CRC cases were diagnosed at advanced stage compared to 18% in the county, region, and statewide. Conclusions: Findings identify an excess observed count for cervix cancer in Hinkley (SIR=2.83; 95% CI=1.12-5.86) and lower than expected counts for digestive (SIR=0.72; 95% CI=0.48-1.72), prostate (SIR=0.65; 95% CI=0.40-0.98), and pancreatic cancers (observed=zero & expected=5.00). Like previous studies covering 1988-1998 and 1996-2008, no generalized cancer excess was identified. Absence of any nasopharyngeal carcinoma cases, nominal lung and bronchus and all cancer findings, and lower than expected count of digestive cancers challenge the hypothesis that aqueous Cr(VI) contributes to cancer occurrence. The unique cervix, prostate, and colorectal cancer findings are consistent with underutilization of cancer screening in this remote desert community.

### Learning Areas:

Basic medical science applied in public health  
Epidemiology  
Public health or related research

### Learning Objectives:

This presentation will demonstrate how population-based cancer registry data can be used to answer questions about whether exposure to a potential carcinogen in groundwater is associated with an excess cancer occurrence. This presentation will identify the disconnect that exists between a popular movie and outcomes-based evidence of cancer occurrence in Hinkley, California. This presentation will evaluate cancer occurrence and stage at diagnosis outcomes in Hinkley, seeking to distinguish between an etiologic cancer excess and inadequate screening.

**Keywords:** Cancer Prevention, Cancer Screening