# EVALUATION OF HEALTH IMPACT IN AN OPEN-PIT MINING AREA IN CATAMARCA, ARGENTINA

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Mining industry in Catamarca (CAT), a province in NW Argentina, has grown over the past decade. As a result, concerns regarding environmental and health impact have risen in the local community. The present work is aiming at assessing the impact on health from mining in Bajos de la Alumbrera, a gold and copper open-pit mine in CAT. This study involved evaluation of on-site safety and health hazards in mine employees; during this work river water quality analysis was performed on, both upstream and downstream water samples. Interviews with hospital staff and neighbors in four towns near the mine were done to analyze effects on health of the population. Comparison of CAT cancer and mortality rates to national levels was also done to assess potential increased risk. We also performed a field study at Amanao, a settlement located 17 km from the mine involving clinical examination and complementary studies of 57 individuals > 15 years old (>90% of the population). No health hazards in mine employees were reported, nor did injuries surpass expected trauma rates. The upstream water quality showed elevated pH, high calcium and sulphate concentrations and contained strontium (indicating natural source from sedimentary rocks). Calcium and sulphate concentrations downstream remained elevated making water unsuitable for drinking. Hospital staff at neighboring towns reported no significant changes in the epidemiologic profile of local communities. Similarly neighbors did not report diseases as a result of contaminated water usage. Incidence rates for breast, prostate, kidney cancers and lymphomas were significantly higher in CAT than national rates. In children lymphoma, central nervous system and liver cancer rates were higher in CAT than average national rates. Both in adults and in children, increased cancer rates corresponded predominantly to the central region of the province, distant from the mining area. Cancer mortality rates in CAT were comparable to rates in other regions in Argentina, cardiovascular diseases were the leading cause of death both in CAT and nationwide. In Amanao infections (hydatidosis, brucellosis, trypanosomiasis) and hypertension were the most common diseases, however lung and skin diseases were not prevalent. Despite contamination claims from anti-mining groups, in this initial surveillance study we found no evidence that mining activities increased risk of disease in the general population.

Keywords: mining, health, impact