Objective Assessing the cost of subsidizing access to household natural gas (HNG) and its impact on the health of about 35,000 poor households (socioeconomic strata 1 and 2) in Colombia, sponsored by a Global Partnership on Output-Based Aid (GPOBA) project. Methods The following studies were combined: an analysis of secondary data and analysis of databases provided by the Promigas foundation, demographic data from the 2005 DANE census and databases regarding Central Bank economic statistical series; an analysis of the burden of disease estimated from parameters identified in previous studies; an analysis of the cost of the burden of illness and the estimated costs which were avoided by implementing the HNG connections program; and an analysis of the cost effectiveness of the program linking homes to HNG services. Results The OBA project led to about 4,000 to 5,000 cases of acute respiratory disease (ARD) and 1,200 to 2,300 outpatient cases of chronic obstructive pulmonary disease (COPD) being avoided during the study period; around 1,200 hospitalizations due to ARD and 500 due to COPD were also avoided. Forty-five to 170 deaths (representing about 45,000 to 90,000 disability-adjusted life years (DALY)) were also avoided. The economic cost of the burden of disease arising from ARI and COPD in such scenario without HNG would have been between 10.7 and 23.6 million dollars, whilst HNG led to costs becoming reduced by about 32%. Conclusions This study was a good estimator of the potential impact of the poorest and most vulnerable households gaining universal access to HNG.

Keywords
Respiratory tract disease, chronic obstructive pulmonary disease, fossil fuel, cost-benefit analysis (source: MeSH, NLM).