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Title: Can High Bill Alerts Help Utility Customers to Save Energy? Evidence from a Large Randomized Experiment

Abstract: **Motivation** Home energy reports (HERs) are a foundation of many utilities' residential energy efficiency portfolios. HER programs are highly scalable, and evaluations show that HERs save 1-3% of energy consumption and lift customer participation in utility energy efficiency programs. While HERs are the best-known behavior-based energy efficiency intervention, utilities are testing others. One such intervention is high bill alerts (HBAs). HBAs notify customers when their monthly consumption is expected to exceed normal levels, giving them an opportunity to make changes. HBAs often include energy-savings tips and a web link to the utility's energy efficiency program offerings. HBAs have the potential to increase utility customer welfare and satisfaction. It is costly for most customers to track their monthly energy consumption, and customers are often inattentive to their consumption as a result. However, when customers receive their monthly bills, some may regret not having paid more attention. HBAs can reduce customer costs of tracking energy consumption and address the issue of inattention by alerting customers when their bills are expected to be above average. **Research Description** We will present findings from an evaluation of a HBA pilot program of a large Midwestern electric and gas utility. Beginning in June 2015, the utility enrolled 50,000 residential customers in a HBA pilot. The pilot sent email alerts to customers whose monthly electricity or gas consumption was on track to exceed normal levels. During the first year of the pilot, the utility sent more than 100,000 HBAs to 30,000 customers. None of the HBA customers was enrolled in the utility's home energy reports program. The utility implemented the pilot as a randomized control trial, which means that the savings estimates are highly credible and can be interpreted as the causal impact of participation in a HBA program. Panel regression analysis of individual customer daily interval consumption data indicates that during the first year HBAs decreased gas consumption by 0.5% and electricity consumption by 0.4%. During the 24 months after the pilot concluded and treatment stopped, the gas and electricity savings persisted. **Significance of Research** HBAs are a new behavior-based "nudge" that can cause residential customers to pay more attention to their energy consumption. This presentation provides credible evidence about the impacts of this nudge for a large Midwestern electric and gas utility. The results of this impact study will be of interest to utility regulators and program administrators who are considering new behavior-based measures.