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Results of REACH Mass: a 16-Community Trial to Promote Judicious Antibiotic Use

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Background: The CDC and others have promoted judicious antibiotic use, aimed at reducing resistance. But, few community-level campaigns have been tested in randomized trials.

Objective: To determine the impact of a campaign to decrease unnecessary antibiotic use among children.

Design/Methods: We conducted a randomized trial of a 3-year community-level intervention (2000-2003). Physicians in 8 of 16 communities received educational sessions, informational faxes, and waiting-room materials targeting specific prescribing behaviors. Parents received 6 newsletters. Dispensing data from 3 commercial health plans and Medicaid were used to calculate rates of antibiotic use per person-year (abx/py) in intervention (I) and control (C) communities. We used mixed effects Poisson regression to assess adjusted intervention effect accounting for clustering by community, and controlling for potential confounders. We analyzed data for children overall and those Medicaid-insured, in two age groups: 3-36 mos. and 36-72 mos.

Results: 223,497 person-years over 5 years (2 baseline, 3 intervention) were analyzed. Among all children 3-36 mos., antibiotic use decreased from baseline values of 2.49 abx/py (I) and 2.48 abx/py (C) by 20.6% and 19.2% abx/py in I and C towns, respectively (int. effect=1.4%, p=.20). Medicaid-insured children 3-36 mos., who started at 2.63 (I) and 2.65 (C) abx/py, decreased by 21.7% (I) and 16.5% (C) (int. effect=5.2%, p=.001). Among all children 36-72 mos., initial rates of 1.42 abx/py (I and C) decreased by 9.6% (I) and 3.4% (C) (int. effect 6.1%, p<.001); Medicaid-insured children 36-72 months, with baseline rates of 1.46 (I) and 1.47 (C), decreased 11.0% (I) and 3.9% (C) (int. effect=7.1%, p=.001).

Conclusions: Community level intervention resulted in a real, but modest decrease in antibiotic use, even in the presence of very strong secular trends. Impact was concentrated in older preschool children and in those insured by Medicaid.