**Figure 1 – Figure Supplement 2.** Sensitivity analyses for Scenario 3 (elimination of all antibiotic use for acute sinusitis).

**A. Use estimates of unnecessary prescribing for acute sinusitis from Fleming-Dutra et al.** Based on Fleming-Dutra et al. (Fleming-Dutra et al., 2016), we estimate that the proportion of unnecessary antibiotic prescriptions for acute sinusitis is 18%, 100%, and 34% for individuals who are 0-19, 20-64, and over 65 years old, respectively (see Figure 1 – Source Data File 2).

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**B. Use estimates of bacterial etiology to approximate necessary antibiotic use for acute sinusitis.** The following upper bound estimates for the proportion of acute sinusitis cases with bacterial etiology were used: 2% for adults and 13% for children (applied to 0-19 year old age group) (Sande & Gwaltney, 2004; Snow, Mottur-Pilson, & Hickner, 2001; Wald, Guerra, & Byers, 1991).

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**C. Use estimates of bacterial etiology among those presenting to primary care clinics to approximate necessary antibiotic use.** Patients visiting the clinic are likely to have more persistent, severe, or worsening symptoms, which may be indications of bacterial etiology. Studies have estimated that approximately 38% of adults and 17% of children (upper bounds) visiting primary care for symptoms of acute upper respiratory tract infection have bacterial rhinosinusitis (Aitken & Taylor, 1998; Benninger, Holzer, & Lau, 2000; Williams, Simel, Roberts, & Samsa, 1992).

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**Abbreviations:** *Antibiotics (y-axis):* AMX-CLAV=amoxicillin-clavulanate, MACR/LINC=macrolides/ lincosamides, TMP-SMX=sulfamethoxazole-trimethoprim; *Organisms (x-axis):* EC=*E. coli*, HI=*H. influenzae*, KP=*K. pneumoniae*, MC=*M. catarrhalis*, PA=*P. aeruginosa*, SA=*S. aureus*, SAg=*S. agalactiae*, SP=*S. pneumoniae*, SPy=*S. pyogenes*; PY=person-years

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