**Supplemental Table 2. Strength of Evidence for Outpatient Antimicrobial Stewardship Studies, by Patient Outcome**

| **Study, year** | **Study design** | **Purpose of intervention** | **Risk of bias** | **Outcome** | **Finding versus control or prior to implementation** | **Strength of evidence, by outcome** |
| --- | --- | --- | --- | --- | --- | --- |
| ***A. Provider and/or Patient Education Studies (k=14)*** |
| Butler 201238 | RCT | Reduce antimicrobial dispensing for all causes | Medium | Return clinic visit | Within 31 days (intervention – control): -2.32 [95%CI -4.76, 1.95]; p=0.50 | Low for Return Clinic Visits |
| Metlay 200721 | CRCT | Reduce antimicrobial overuse for ARTIs in the emergency department | Medium | Return clinic visit | Within 2 weeks: site by time interaction p=0.48 |
| Little 200544Moore 200970 | RCT | Effectiveness of 3 prescribing strategies and an information leaflet | Medium | Return clinic visit | Within 1 month (patient leaflet vs. no leaflet): IRR 1.63 [95%CI 1.07, 2.49]; p=0.02 |
| Butler 201238 | RCT | Reduce antimicrobial dispensing for all causes | Medium | Hospitalization | % reduction (intervention relative to control): -1.9 [95%CI -13.2, 8.2]; p=0.72 | Low for Hospitalizations |
| Metlay 200721 | CRCT | Reduce antimicrobial overuse for ARTIs in the emergency department | Medium | Hospitalization | Within 2 weeks: site by time interaction p=0.51 |
| ***D. Delayed Prescribing (k=2)*** |
| Little 201052 | RCT | Effectiveness of management strategies for women with urinary tract infection | Medium | Return clinic visit | Within 1 month (delayed prescribing vs. control [immediate prescribing]): OR 0.44 [95%CI 0.21, 0.95] | Low for Return Clinic Visits |
| Little 200544Moore 200970 | RCT | Effectiveness of 3 prescribing strategies and an information leaflet | Medium | Return clinic visit | Delayed antimicrobials: 0.12 IRR 0.65 [95%CI 0.40, 1.04]Immediate antimicrobials: 0.11, IRR 0.55 [95%CI 0.33, 0.91]p=NS |
| ***E. Communication Skills Training (k=6)*** |
| Légaré 201228 | CRCT | Reduce overuse of antimicrobials for acute RTIs | Medium | Return clinic visit | RR 1.3 [95%CI 0.7, 2.3] | Low for Return Clinic Visits |
| Cals 200954 | CRCT | Effect of skills training on prescribing | High | Return clinic visit | NS |
| Francis 200957 | CRCT | Reduce return clinic visit and antimicrobial use | Medium | Return clinic visit | Within 2 weeks (intervention vs. control): OR 0.75 [95%CI 0.41, 1.38] |
| Little 201353 | CRCT | Effect of internet-based training on prescribing for LRTI and URTI | Medium | Hospitalization | NR (2 patients in usual care group, 6 patients in enhanced communication group) | Low for Hospitalizations |
| Cals 200954 | CRCT | Effect of skills training on prescribing | High | Hospitalization | NS (no hospitalizations reported) |
| ***F. Formulary Restriction (k=2)*** |
| Manns 201230 | ITS | Effect of policy restricting quinolone use | Medium | Return clinic visit | Within 30 days: 55.6% before restriction, 56.5% after restriction (p<0.001) (NOTE: overall n=170,247) | Low for Return Clinic Visits |
| Manns 201230 | ITS | Effect of policy restricting quinolone use | Medium | Hospitalization | All-cause: 4.9% before restriction, 5.2% after restriction (p=0.0001) | Low for Hospitalizations |
| ***G. Decision Support (k=6)*** |
| Gonzales 201332 | CRCT | Reduce use of antimicrobials for acute bronchitis | High | Return clinic visit | NS | Low for Return Clinic Visits |
| Jenkins 201333 | RCT | Decrease prescribing for non-pneumonia ARI | Medium | Return clinic visit | 8 to 30 days after initial visit: significant increase for control sites (p=0.02); non-significant decrease for intervention sites |
| McGinn 201334 | RCT | Effect on management of respiratory tract infections | High | Return clinic visit | Within 2 weeks: NS |
| Linder 200936 | CRCT | Reduce inappropriate prescribing | High | Return clinic visit | Within 30 days: 23% intervention 26% control; p=0.32 |
| Gonzales 201332 | CRCT | Reduce use of antimicrobials for acute bronchitis | High | Hospitalization | NS | Low for Hospitalizations |
| Jenkins 201333 | RCT | Decrease prescribing for non-pneumonia ARI | Medium | Hospitalization | NS |
| ***I. Procalcitonin, Rapid Antigen Detection Tests, Polymerase Chain Reaction Assay, and C-Reactive Protein (k=9)*** |
| Little 201361 | RCT | Effect of rapid streptococcal antigen detection test on prescribing for sore throat | High | Return clinic visit | Within 1 month with sore throat (compared to delayed prescribing control)Clinical score + RADT: RR 0.74 [95%CI 0.36, 1.47]; p=0.40Clinical score: RR 0.91 [95%CI 0.47, 1.72]; p=0.78 | Low for Return Clinic Visits |
| Diederischsen 200063 | RCT | Effect of CRP testing on prescribing for RTI | Medium | Return clinic visit | No differences in contact with health service |
| Takemura 200569 | RCT | Effect of WBC and CRP results on prescribing for ARTI | High | Return clinic visit | 30% intervention, 23% control; p=0.20 |
| Cals 200954 | CRCT | Effect of CRP and communication skills training for lower RTI | High | Return clinic visit | 35% CRP, 30% no CRP; p=ns |
| Cals 201064 | RCT | Effect of CRP testing on prescribing for lower RTI and rhinosinusitis | Medium | Return clinic visit | 26% CRP, 18% Usual care; p=ns |
| Takemura 200569 | RCT | Effect of WBC and CRP results on prescribing for ARTI | High | Hospitalization | 0.7% intervention, 0% control; p=ns | Low for Hospitalizations |
| Cals 200954 | CRCT | Effect of CRP and communication skills training for lower RTI | High | Hospitalization | NS (no hospitalizations reported) |
| Cals 201064 | RCT | Effect of CRP testing on prescribing for lower RTI and rhinosinusitis | Medium | Hospitalization | NS (no hospitalizations reported) |
| Little 201361 | CRCT | Effects of internet-based training for CRP for patients with lower or upper RT | Medium | Hospitalization | CRP group vs. no CRP group: OR 2.92 [95%CI 0.96, 8.85]; p=0.06 |

RCT = randomized controlled trial; CRCT = cluster randomized controlled trial ITS = interrupted time series; CCT = controlled clinical trial; CBA = controlled before and after study; ARI = acute respiratory infection; ARTI = acute respiratory tract infection; LRTI = lower respiratory tract infection; URTI = upper respiratory tract infection; CRP = C-reactive protein; WBC = white blood cell; NS = not statistically significant; OR = odds ratio [95% confidence interval]; RR = rate ratio [95% confidence interval]; IRR = incidence rate ratio [95% confidence interval]; HR = hazard ratio [95% confidence interval]; WMD = weighted mean difference