Table D10. Medication adherence outcomes 2

| Author, Year  Trial Name | Medication Adherence Outcome 2 | Description of Timing of Measurement of Adherence Outcome 2 | Data Source | N | Results |
| --- | --- | --- | --- | --- | --- |
| Bogner et al., 20084 NA | Hypertension adherence: % of prescribed doses taken; calculated as number of doses taken divided by the number  of doses prescribed during the observation period multiplied by 100%. Dichotomized with 80% threshold | Measured over 6 week study period for entire study period | MEMS | G1: 32 G2: 32 | G1: 25 (78.1) G2: 10 (31.3) 95% CI,  p: <.001 |
| Bogner et al., 20105 NA | >80% adherence to an antidepressant | 4 times, biweekly beginning at baseline and ending at week 6 | MEMS | G1: 29 G2: 29 | **BL** G1: 8 (27.6%) G2: 4 (13.8%)  95% CI, NR p: 0.17  **EP at 6 weeks** G1: 18 (62.1%) G2: 3 (10.3%) 95% CI, NR p: <0.001 |
| Bosworth et al., 20056 V-STITCH | Adherence at 6 months among those adherent at baseline | last 6 months; 2 times (including baseline); 6 months | Self-report | Total: 387 G1: NR G2: NR | G1: 83% G2: 85% 95% CI, NR p: 0.68 |
| Capoccia et al., 20049 na | Adherence to antidepressants - at 6 mo | Defined as use of antidepressants for at least 25 of the past 30 days; measured at 3, 6, 9, 12 mos | Self-report | G1: NR G2: NR | G1: 78% G2: 73% 95% CI, NR NS |
| Choudhry et al., 201012  NA | Odds of being fully adherent (monthly) | Measured monthly over the 24-month study period | Other | Overall N: 52,631  G1: 2051  G2: 779  G3: 38,174  G4: 11,627 | Statin users  Adjusted for comorbidity & demographics: G1: 17.0% increase over G3, with no subsequent change in slope  95% CI, NR  p: <0.05  Matched by first fill date for eligible prescription in study timeframeG1: 15.1% increase over G3, with no subsequent change in slope 95% CI, NR  p: <0.05  Clopidogrel users Adjusted for comorbidity & demographics: G2: 19.9% increase over G4, with no subsequent change in slope 95% CI, NR  p: < 0.05  Matched by first fill date for eligible prescription in study timeframe  G2: 33.9% increase over G4, with no subsequent change in slope  95% CI, NR  p< 0.05 |
| Choudhry et al., 201113 | Full adherence (among all patients) | Having a supply of medications available on at least 80% of days during follow-up. Patients who lost eligibility before randomization or who did not fill a prescription after randomization were considered to be nonadherent. | Prescription claims records | G1: 2845 G2: 3010 | **All 3 medication classes** G1: 12.1 G2: 8.9 OR (95% CI): 1.41 (1.18-1.67) p: <0.001  **ACE inhibitor or ARB** G1: 27.7 G2: 22.9 95% CI, NR OR (95% CI): 1.31 (1.14-1.49) p: <0.001  **Beta-blocker** G1: 30.7 G2: 25.2 95% CI, NR OR (95% CI): 1.32 (1.16-1.49) p: <0.001  **Statin** G1: 38.6 G2: 31.6 95% CI, NR OR (95% CI): 1.37 (1.20-1.56) p: <0.001 |
| Friedman et al., 199614 NA | Change in Antihypertensive medication adherence for baseline nonadherent subjects (Proportion of total number of doses taken divided by the number that should have been taken by each subject) | Change scores were computed using value at 6 months minus value at baseline | Pill count | Overall N: 26 G1: NR G2: NR | G1: 36.0% G2: 26.0% 95% CI, NR p: 0.03 |
| Guthrie et al., 200117 First Myocardial Infarction (MI) Risk Reduction Program | Medication compliance survey: missed no doses in past 7 days, % | 7 days; 2 times; 3 months | Self-report | G1: 3635 G2: 913 | At 6 months G1: 64.3 G2: 61.8 95% CI, NR p: NR |
| Hoffman et al., 200318 NA | Percent adherence using medication possession ratios, at 3 months | Measured once at 3 months for previous 30 days; adherence defined as < 10 gap days in 30-day period | PRD | G1: 4899 G2: 4665 | G1: 66.9 G2: 66.5 95% CI, NR p: < 0.01 |
| Hunt et al., 200819  NA | Increase in adherence from baseline to final assessment | At baseline and at end point | Self-report | G1: 142 G2: 130 | G1: 61% at BL, 67% at end point, p=0.08  G2: no significant increase from BL to final (p= 0.52) [BL and EP % not reported] 95% CI, NR p: NR |
| Janson et al., 200921 NA | The odds of maintaining greater than 60% adherence -the OR represents a comparison of T2 vs. T1 within groups; however, I report the p-value for the between-groups comparison | Measured biweekly during 4-week intervention (T0-T1); measured at 4-week intervals for following 14 weeks of observation (T1-T2) | Other | NR | **T0-T1** G1: 9.2 G2: 0.4 p: 0.02  **T1-T2** G1: OR: 0.3 G2: OR: 1.1 p: .31 |
| Janson et al., 200320  NA | ICS adherence (number of puffs recorded daily in the diary divided by the number of puffs prescribed) between group-difference in change from baseline to final visit (95% CI) Source of data was self-report supplemented by medication monitors | Assessed at baseline, and end of week 1, 2, 5, 7; time frame for baseline measurement was one week; time frame for final measurement not reported | Other | G1: 33 G2: 32 | Between group difference: 24 (5 to 43), p= 0.01 |
| Johnson et al., 200623  NR | Pre-action sample only - Reaching Action (A) or M (Maintenance) stage for adherence, %;  Action defined as having improved adherence for < 6 months; Maintenance defined as having improved adherence for >6 months;  [Data source: complete case analysis evaluating Stage of Change] | Last 6 months; 4 times every 6 months (0,6,12, and 18 months) | Self-report | G1: NR G2: NR | **BL** G1: in figure only G2: in figure only 95% CI, NR p:NR  **6 months** G1: in figure only G2: in figure only 95% CI, NR p>0.05  **12 months** G1: 73.1% G2: 57.6% 95% CI, NR p<0.001  **18 months** G1: 69.1% G2: 59.2% 95% CI, NR p<0.01 |
| Johnson et al., 200622 NR | Pre-action sample only Medication Adherence Scale score [Data Source: 4-item scale assessing whether individual has engaged in various forms of non-adherence] | Last 3 months; 4 times; measured every 6 months (0,6,12, and 18 mos) | Self-report | **BL** Overall N: 262 G1: NR G2: NR  **6 months** Overall N: 180 G1: NR G2: NR  **12 months** Overall N: 163 G1: NR G2: NR  **18 months** Overall N: 161 G1: NR G2: NR | **BL** G1: in figure only G2: in figure only OR: NR p:NR  **6 months** G1: in figure only G2: in figure only OR=1.49 p<0.01  **12 months** G1: in figure only G2: in figure only OR=1.62 p<0.001  **18 months** G1: in figure only G2: in figure only OR=1.62 p<0.01 |
| Katon et al., 199524  NA | % receiving adequate dosage of antidepressants for ≥90 days (details NR) | During continuation phase of treatment (3-7 months) | PRD | **Major depression group** N=91  **Minor depression group** N=126 | **Major depression group**  G1: 75.5  G2: 50.0  95% CI, p: <0.01  **Minor depression group**  G1: 79.7  G2: 40.3  95% CI, p: <0.001 |
| Katon et al., 199625  NA | Medication adherence - telephone interview asking if they were still taking antidepressants and considered adherent if they reported taking medication at least 25 out of last 30 days | Measured at 4-month follow up | Other | G1: 76 G2: NR | **Major Depression Group at 4-month follow up (% adherent)**  G1: 89%  G2: 62% p=0.02  **Minor Depression Group at 4-month follow up (% adherent)**  G1: 74%  G2: 44% p=.01 |
| Katon et al., 199926  NA  Katon et al., 200227  NA | Percent receiving adequate dosage of antidepressants for at least 90 days in previous 6 months, as indicated by AHCPR guidelines(Reported in 9123) | Likely measured once at 6-months for the previous 6 months of data | PRD | G1: 114 G2: 114 | G1: 68.8%  G2: 43.8%  Chi-square: 12.60  p: 0.0001 |
| Katon et al., 200128  NA  Ludman et al., 200329  NA  Van Korff et al., 200330  NA | Adequate dosage of antidepressant treatment | Measured at 3, 6, 9, 12 months | PRD | G1: NR  G2: NR | Adjusted OR  G1:  G2, 2.08  95% CI, 1.41 to 3.06  p: < 0.001 |
| Lee et al., 200631 FAME | >/=80% adherence to all medications, % | Last 2 months; 4 times (including baseline at 8 months); 2 months | Pill count | G1: 77 G2: 69 | G1: 97.4 G2: 21.7 95% CI, NR p<0.001 |
| Lin et al., 200632  NA | Adjusted mean difference in percentage of days nonadherent (baseline minus endpoint) | NA | PRD | Oral hypoglycemic agent  **BL**  G1: 103  G2: 103  **EP**  G1: 103  G2: 103  ACE inhibitor **BL**  G1: 54  G2: 65 **EP**  G1: 59  G2: 52  Lipid-lowering agent  **BL**  G1: 50  G2: 52  **EP**  G1: 54  G2: 63 | Oral hypoglycemic agent (%) = -6.3% 95% CI, -11.91 to -0.71  p: NS  ACE inhibitor (%) = -2.5%  95% CI, -8.69 to 3.70 p: NS  Lipid-lowering agent (%) = -0.2  95% CI, -7.23 to 6.76  p: NS |
| Maciejewski et al., 201033 | Percent change in medication possession ratio (MPR) from baseline (adherence differences between G1 and G2)  Matched analysis with covariates | 24 monthly assessments: 12 in the pre-intervention period and 12 in the post-period | Other | Matched pairs, N in G1 and G2 identical for each medication. N's shown below are for each group **Metformin**: 2,201 **Diruetics:** 7,417 **ACE inhibitors**:6,379 **Beta-blockers**: 4,992 **Statins:** 7,757 **Calcium-channel blockers:** 3,209 **Angiotensin-receptor blockers:** 3,259 **Cholesterol absorption inhibitors:** 1,681 | **Metformin**: 3.69% p: <0.001  **Diuretics**: 3.35% p: <0.001  **ACE inhibitors**: 3.10% p: <0.001  **Beta-blockers**: 2.69% p: <0.001  **Statins**: 2.56% p: <0.001  **Calcium-channel blockers**: 1.31% p: <0.05  **ARBS**: -0.02% p: NS  **Cholesterol absorption inhibitors**: -0.80% p: NS |
| Mann et al., 201034 The Statin Choice | % of participants with good adherence at 6 months using Morisky | Same as mentioned for 3 months | Self-report | G1: NR G2: NR | G1: NR G2: NR 95% CI,  p: No significant difference reported between groups for overall 80% with "good adherence" for whole group at 6 months |
| Montori et al., 201135 | Adherence: Median (range) proportion of days covered | Measured at 6 months | PRD | G1: 23 G2: 19 | G1: 100 (86.1-100) G2: 98.2 (0-100) 95% CI, NR p: 0.09 |
| Murray et al., 200736  NA | "Taking Adherence": % of prescribed medication doses taken based on physician's prescription | Post-intervention (3 additional mos - months 10-12)  Frequency: continuous daily MEMS monitoringDuration between measures: 12 to 24 hours, depending on med frequency | MEMS | G1: 122 G2: 192 | Proportion (95% CI)  G1: 70.6% (64.9-76.2)  G2: 66.7% (62.3-70.9)  Difference 3.9% (-2.8-10.7)  p=NR |
| Nietert et al., 200937 NA | Filled prescription for any qualified medication in the same chronic disease classification as the index medication, within 30 days of index date | NR | PRD | G1: 1018 G2: 1016 G3: 1014 | Unadjusted G1: N (%) = 207 (20.3%) G2: N (%) = 213 (21.0%) G3: N (%) = 243 (24.0%) 95% CI, NR p: NR  Adjusted G1: Hazard ratio (HR, 98.3% CI) = 0.79 (0.61-1.03) G2: HR, 97.5% CI = 0.83 (0.65 to 1.06) G3: HR, 95.0% CI = 0.96 (0.77 to 1.20) 95% CI, NR p: NR |
| Okeke et al., 200938 NA | Change in adherence rates (unadjusted) | Dosing aids were downloaded after the observational cohort period (capturing data for a 3 month period) and at the end of the RCT (capturing data for a 3 month period) | Other | G1: 35 G2: 31 | G1: change in adherence rate (SD) 0.19 (0.20) G2: change in adherence rate (SD) 0.06 (0.23) 95% CI, NR p: 0.01 |
| Powell et al., 199540  NA | Compliance (MPR > 0.80) | Refill data collected over a 9-month period | PRD | G1: 1993 G2: 2253 | **Overall** (N (%))  G1: 917 (46%)  G2:998 (44%)  95% CI, NR  p: NR  **Benazepril** (N (%))  G1: 78 (45%)  G2: 104 (44%)  95% CI, NR  p: NR  **Transdermal estrogen** (N (%))  G1: 266 (37%)  G2: 209 (35%)  95% CI, NR  p: NR  **Metoprolol** (N (%))  G1: 438 (53%)  G2: 466 (52%)  95% CI, NR  p: NR  **Simvastatin** (N (%))  G1: 135 (50%)  G2: 138 (46%)  95% CI, NR  p: NR |
| Pyne et al., 201141 HIV Translating Initiatives for Depression Into Effective Solutions (HITIDES) | Antidepressant regimen adherence - at 12 months | Each measurement is percentage adherence over previous 4 days (i.e. total number of prescribed pills taken divided by total number of prescribed, transformed to dichotomous outcome with cutpoint at >=80%). 3 measurements taken: baseline, 6-month and 12-months. | Self-report | G1: 59 G2: 60 | G1: 45/59 (76.3) G2: 51/60 (85.0) OR: 0.55 (0.21-1.44)  Adjusted OR: 0.56 (0.20-1.57) Adjusted p: 0.27 |
| Rich et al., 199642 NA | Overall compliance rates by method 2: percentage of pills taken correctly for all current medications (pooled) determined by pill count at home visit by pharmacist or trained pharmacy assistant | 30 days +/- 2 days after discharge; 1 time; NA | Pill count | G1: 80  G2: 76 | Overall: 84.3% +/- 15.0%  G1: 87.5 +/- 12.6%  G2: 80.9 +/- 16.7%  95% CI, NR p: 0.003 |
| Rickles et al., 200543  NA | % omitted antidepressant doses at 6 months | 2 measurements, each for 3 month time period | PRD | G1: 28 G2: 32 | Without ITT: N (Mean ± SD)  G1:28 (30.3 ± 36.4)  G2: 32 (48.6 ± 39.2)  p <0.05 (one tailed)  With ITT, the difference was not significant (data NR) |
| Ross et al., 200444  NR | General adherence score (0-100 score) | NR; 3 times (including baseline); 6 months | Self-report | G1: NR G2: NR | **6 months**  G1: 81  G2: 78  Difference (CI): +2.3 (-3.7 to 8.3)  p: NR  **12 months**  G1: 85  G2: 78  Difference (CI): +6.4 (1.8 to 10.9)  p: 0.01 |
| Rudd et al., 200445 NA | Proportion of medications taken correctly among those on a once-daily dosing regimen | 1 day; daily ; 6 months | MEMS | NR | G1: 82% (28%)  G2: 75% (27%)  95% CI, NR p: NR, not significant per text |
| Rudd et al., 200946 NA | Percent Change at 6 months and 12 months in Medication Adherence Outcome | Measures at 6 months and 12 months; percent change from baseline to 6 months and percent change from base line to 12 months | Self-report | **BL** G1: 51 G2: 63  **6 mos** G1: 49 G2: 57  **12 mos** G1: 48 G2: 57 | Percent Change (Scales show improvement with decreased scores) **BL to 6 months**  G1: -4.76 G2: 0.25 95% CI, NR p: 0.33  **BL to 12 months** G1: -12.21  G2: -3.12  95% CI, NR  p: 0.10 |
| Schaffer et al., 200447 NA | Self-reported adherence: number of doses of preventive medication missed during the 2 weeks prior to each study visit. | Baseline, 3, 6 mo; 2 week timeframe | Self-report | G1: 11 G2: 10 G3:12 G4:13 | Self-report missed: mean (SD) G1: Pre: 1.72 (2.15) 3 mo: 2.40 (3.10) 6 mo: 1.17 (1.53)  G2: Pre: 8.10 (12.63) 3 mo: 7.70 (10.85) 6 mo: 4.68 (27.34)  G3: Pre: 6.58 (9.52) 3 mo: 8.91 (15.25) 6 mo: 1.17 (1.53)  G4 : Pre: 3.61 (7.65) 3 mo: 6.25 (10.49) 6 mo: 3.75 (7.89)  Pre-3 mo G4 vs. G2 p = .9  G4 vs. G1 p = .7  G4 vs. G3 p = .5  Pre-6 mo G4 vs. G3 p = .2 G4 vs. G2 p = .2 G4 vs. G1 p = .5 |
| Schectman et al., 199448 NA | Prescription refill proportion at 2 months | Monthly timeframe; measured 2 times; 1 month between measures | PRD | **Niacin**: G1: 40 G2: 40  **BAS**: G1: 18 G2: 22 | **Niacin**: G1: 90 +/- 2 G2: 84 +/- 3 95% CI, NR p: 0.07  **BAS**:  G1: 88 +/-4 G2: 82 +/- 4 95% CI, NR p: 0.32 |
| Schneider et al., 200849  NA | Medication possession ratio (sum of day's supply for all rxs received during the study divided by the number of days between the dates of the 1st and last rx dispensing) | Calculated for all previous months at 6 month and 12 month follow-ups | PRD | G1: 47 G2: 38 | Mean (SD)  G1: 0.93 (11.4)  G2: 0.87 (14.2)  95% CI, p: 0.039 |
| Schnipper et al., 200650 NA | #/% of patients non-adherent with at least 1 medication | NR | Self-report | G1: 67 G2: 62 | G1: 36 (54%) G2: 33 (53%) 95% CI,  p: >0.99 |
| Smith et al., 200853 NR | Likelihood of having at least 80% proportion of days covered across all 9 months of follow-up | last 30 days; 9 times; 1 month apart | PRD | G1: 426  G2: 410 | G1: 64.8% G2: 58.5% RR: 1.17 95% CI, 1.02-1.29 |
| Solomon et al., 199854 na  Gourley et al., 199855 NA | Self-report of compliance comparing Visit 1 between Intervention and Control group in HTN group | At baseline | Self-report | G1: 62 G2: 70 | G1: 0.60 (0.087) G2: 0.63 (0.111) 95% CI, NR p: 0.75 |
| Stacy et al., 200956 NA | Continuous Persistence: having any statin prescription dispensed at least every 30 days after the end date of a previous prescription for a statin | 6 months from baseline; 1 time; NA | PRD | G1: 253 G2: 244 | G1: 52.2% G2: 44.3%  Unadjusted OR (90% CI): 1.37 (1.02-1.85)  Adjusted OR (90%CI): 1.41 (1.05-1.94) p: <0.10 |
| Vivian et al., 200258  NA | Compliance survey at 6 months: How often do you stop taking your medication when you are feeling better? (>=once/wk) | Varied b/t groups; compliance measured in G1 at monthly visits, only measured at baseline and study end for G2 | Self-report | G1: 26 G2: 27 | G1: 32% G2: 20% 95% CI, NR  p: 0.520 |
| Weinberger et al., 200261 NA | Morisky 4-item scale range from 0 (low) to 4 (high) - 12 month outcome | Assessed at baseline, 6 and 12 months; time frame is previous 2 months | Self-report | Overall N: 898 G1: 356 G2: 296 G3: 246 | G1: 0.87 (0.05) G2: 0.85 (0.05) G3: 0.92 (0.06)   p=0.57 |
| Weymiller et al., 200762 Statin Choice Randomized Trial  Jones et al., 200963 Statin Choice Randomized Trial | Post intervention adherence at 3 months (Adherence stratified by mode of delivery) | Not missing any doses in the past week | Self-report | NS | There were no statistically significant effects of mode of delivery on adherence to statins at 3 months (OR 0.8, CI 0.3, 2.6). |
| Wilson et al., 201065  Better Outcomes of Asthma Treatment (BOAT) | Medication acquisition - ICS; Fill/reﬁll adherence was measured using a continuousmedication acquisition (CMA) index for each year, calculated as the total days’ supply acquired in a given year divided by 365 days | Follow-up year 1, continuous measure for entire year | PRD | G1: NR  G2: NR  G3: NR | G1: 0.59  G3: 0.37;  p: 0.0001  G1: 0.59  G2: 0.52;  p: .017  G2: 0.52  G3: 0.37  p: .0001 |
| Zhang et al., 201067 NA | Medication Possession Ratio >0.80 (likelihood of being adherent) | Pre and post Part D | Other | **Hyperlipidemia** G1: 418 G2: 647 G3: 5093 G4: 3027  **Diabetes** G1: 247 G2: 304 G3: 2214 G4: 1253  **Hypertension**: G1: 980 G2: 1234 G3: 8380 G4: 4141 | **Hyperlipidemia** Unadjusted G1 Pre: 27.5; Post: 43.9 G2 Pre: 39.2; Post: 48.2 G3 Pre: 42.1; Post: 49.3 G4 Pre: 57.4; Post: 61.3   Multivariate 2-Year Part D Effect, estimate (95% CI) G1: 1.67 (1.35, 2.07) G2: 1.22 (1.04, 1.43) G3: 1.14 (1.06, 1.24) G4: 1.00  **Diabetes** Unadjusted G1 Pre: 39.7; Post: 57.2 G2 Pre: 68.0; Post: 67.1 G3 Pre: 62.0; Post: 61.9 G4 Pre: 70.6; Post 66.6   Multivariate 2-Year Part D Effect, estimate (95% CI) G1: 2.36 (1.81, 3.08) G2: 1.17 (0.9, 1.51) G3: 1.21 (1.06, 1.39) G4: 1.00  **Hypertension** Unadjusted G1 Pre: 47; Post: 66.6 G2 Pre: 73.3; Post: 76.6 G3 Pre: 74.9; Post: 77.4 G4 Pre: 78.4; Post: 78.5  Multivariate 2-Year Part D Effect, estimate (95% CI G1: 2.09 (1.82, 2.40) G2: 1.13 (0.99, 1.29) G3: 1.14 (1.05, 1.23) G4: 1.00 |