Supplementary Table. Summary of studies that assessed association between co-location of services and HIV care continuum outcomes (Publication dates: 2002-2015, 48 findings; 36 studies)

Lead Author Year	Objectives as Described in the Study	Study Location	Setting	Target Population (All HIV-positive)	Services co-located	Outcome Measures & Study Findings (including sample size)	Evidence of whether co-location is associated with outcome	Tier[1]
HIV care co-located with multiple ancillary services (13 findings; 11 studies)								
Craw 2008 (1)	To evaluate the ARTAS[2] linkage case management intervention	US (Anniston, Atlanta, Baltimore Baton Rouge, Chicago, Columbia/Greenville, Jacksonville, Kansas City, Miami, Richmond)	Health departments and Community Based Organizations	Recently diagnosed	HIV care, ARTAS linkage case management intervention	<u>Linkage</u> Received HIV medical care in the past 6 months Patients from the sites that provided service co-location (n=281) were significantly more likely to be linked to HIV care than patients from sites that did not provide service co-location [n=345, reference group] adjOR[3]=3.03 (95% CI: 1.87-4.90, n=627)	Yes	Tier 3
Davila 2013 (2)	To determine the effect of clinic-wide changes in the delivery of	US (Houston)	Free-standing clinic for uninsured or under-insured	Black or Hispanic HIV patients aged 13-23 years	HIV care, case management, support group, educational	<u>Retention</u> (1)≥3 quarters with at least one visit to a HIV primary care clinic during the 12	No	Tier 2

[1] Tier 1=randomized controlled trial (RCT), Tier 2=non-RCT but with a comparison group, Tier 3=observational

[2] ARTAS=Antiretroviral Treatment Access Study

[3] adjOR=adjusted odds ratio

	youth focused services on retention in HIV care		HIV infected persons		activities that focused on youth	months following entry into care (2)No gap in care (<180 days between 2 consecutive HIV primary care visits during the 12 months following entry into care) No significant difference in two retention outcomes was observed between patients entering the clinic prior to the implementation of service co-location (n=36) vs. patients entering the clinic after the implementation of service co-location [n=90, reference group] (1)adjOR=0.42 (0.17-1.03) (2)adjOR=1.37 (0.46-4.17)		
Zaller 2007 (3)	To describe a model of comprehensive and integrated care for individuals diagnosed with HIV, substance use and mental illness	US (Providence)	Hospital-based HIV primary care clinic	Drug user	HIV care, assessment of substance use and mental health treatment needs, referral to substance use and mental health treatment services, social services support (e.g., housing, transportation, and application for state medical and disability assistance) through case management. Also known as Project Vista	<u>Retention</u> Average number of medical visits per year Patients who accessed service co-location via Project Vista (n=116) had significantly better retention than the HIV general clinic population (n=961) 6.84 vs. 4.89 medical visits, p<0.001	Yes	Tier 3

Lamb 2012 (4)	To examine the effect of adherence support and active outreach services on patient attrition following ART initiation	International (10 sub-Saharan African countries)	HIV care and treatment clinics	General	HIV care, directed support services (adherence counseling, support groups, peer education programs), dedicated ART pharmacist, structural services including food rations	<u>Retention</u> Overall loss to follow-up rate defined as "cumulative number of patients not returning to clinic for >6 months since last visit with no known status" over "total person-years observed on ART at that site" Clinics providing more than 2 co-located adherence support services had significantly lower rates of loss to follow-up (i.e., higher retention) than clinics providing 2 or less adherence support services [reference group] AdjRR[4]=0.48 (0.25-0.92, n=349 clinics) Clinics providing co-located one-on-one/group adherence counseling support service had significantly lower rates of loss to follow-up (i.e., higher retention) than clinics providing no such service [reference group] AdjRR=0.55 (0.33-0.89, n=349 clinics)	Mixed	Tier 3

[4] AdjRR=adjusted relative risk

						No significant difference in loss to follow-up rates was observed between clinics providing co-located support groups for HIV-positive patients vs. clinics providing no such program [reference group] AdjRR=1.20 (0.95-1.52, n=349 clinics) No significant difference in loss to follow-up rates was observed between clinics providing co-located peer education programs vs. clinics providing no such programs [reference group] AdjRR=1.08 (0.89-1.32, n=349 clinics) No significant difference in loss to follow-up rates was observed between clinics providing co-located pharmacy services (routine medication pickup review, dedicated or team pharmacist) vs. clinics providing no such services [reference group] AdjRR=0.60 (0.36-1.00, n=349 clinics)		

						Clinics providing co-located structural services (food rations to promote ART adherence) had significantly lower rates of loss to follow-up (i.e., higher retention) than clinics providing no such services [reference group] AdjRR=0.65 (0.47-0.88, n=349 clinics)		
Zaller 2007 (3)	To describe a model of comprehensive and integrated care for individuals diagnosed with HIV, substance use and mental illness	US (Providence)	Hospital-based HIV primary care clinic	Drug user	HIV care, assessment of substance use and mental health treatment needs, referral to substance use and mental health treatment services, social services support (e.g., housing, transportation, and application for state medical and disability assistance) through case management. Also known as Project Vista	<u>ART uptake</u> On ART therapy No significant difference in ART uptake was observed between patients who accessed service co-location (n=116) vs. the general HIV clinic population (n=961) 76.7% vs. 77.5% , p=0.16	No	Tier 3
Leon 2011 (5)	To evaluate an internet-based home care model for improving patients' access to the health system without any deleterious effect on their care	International (Barcelona, Spain)	University hospital	General	Internet-based "Virtual Hospital" providing HIV care (including consultation, medical care, tele-pharmacy via courier to provide medication), psychological and social support services	<u>Viral suppression</u> undetectable level not specified No significant difference in viral suppression was observed between patients randomized to access service co-location via "Virtual Hospital" (n=42) vs. patients	No	Tier 1

						receiving standard of care (n=41) p=0.21[5]		
Ma 2010 (6)	To assess the effectiveness of a pharmacist's intervention on pill burden, dosing frequency, medication adherence, CD4 count and HIV viral load	US (Vallejo, CA)	Infectious disease clinics at Kaiser Permanente Medical Center	General	HIV care, ARV regimen modification, education, and adherence counseling by an HIV clinical pharmacist	<u>Viral suppression</u> HIV RNA<75 copies/mL at 6-month assessment period A significantly higher proportion of the 73 patients achieved viral suppression after the clinic implemented service co-location compared to pre-implementation 95% vs. 63%, p<0.0001	Yes	Tier 2
Rogers 2013 (7)	To assess the effect of service integration on client outcomes	US (20 locations in 10 states)	AIDS Service Organization (ASO)	General	HIV care, other HIV services (enhanced case management services, health literacy, risk reduction programs)	<u>Viral suppression</u> Mean differences in viral load (categorical) from baseline to follow-up; categories for viral load are: 1=undetectable (<400 or <40 copies/mL); 2=detectable (<1,000 copies/mL); 3=1000-9999 copies/mL; 4=10,000-55,000 copies/mL; 5= >5,5000 copies/mL At an ASO that made the best use of the co-location model, significant reduction in viral load from baseline to 1st follow-up	Yes	Tier 2

[5] Only p-value was reported in abstract

						-0.59 ($p<0.05$, n=80), and from baseline to 2nd follow-up -0.68 ($p<0.001$, n=91) was observed		
Frick 2006 (8)	To test whether participation in a multidisciplinary intervention improves ART adherence and HIV clinical indicators	US (Seattle)	University-based HIV clinic within a county hospital	ART naive	HIV care (initiation of HAART), one-on-one appointment with a pharmacist, a dietitian, and a social worker. Each discipline provides education, identifies and offers solutions to barriers to adherence to HAART, and makes a recommendation to the provider on whether the patient is ready to begin HAART.	<u>Viral suppression</u> <500 copies/mL at the last measurement during 12 months follow-up period No significant difference in viral suppression was observed between patients receiving care after the implementation of service co-location (n=60) vs. patients receiving care prior to the implementation of service co-location (n=63) among patients who were still on HAART at 12 months 88.3% vs. 84.6%, p=0.545	No	Tier 2
Hoang 2009 (9)	To evaluate the effect of integrated HIV care on viral suppression	US (Southern California, Nevada)	Veterans Affairs healthcare facilities	General	HIV care, on-site pharmacy services, other services including treatment for Hepatitis C, mental health, substance abuse, and social services (housing, transportation, disability benefits, etc.)	<u>Viral suppression</u> HIV-1 RNA<400 copies/mL over the 6-year study period Patients who received higher levels of integrated (co-located) HIV care were more likely to achieve viral suppression than patients who received lower levels of	Yes[7]	Tier 3

[7] Also "yes" among a subsample of patients who accessed only one integrated health care setting

						integrated HIV care [reference group] adjHR[6]=1.10 (1.09-1.11, n=1,018)		
Zaller 2007 (3)	To describe a model of comprehensive and integrated care for individuals diagnosed with HIV, substance use and mental illness	US (Providence)	Hospital-based HIV primary care clinic	Drug user	HIV care, assessment of substance use and mental health treatment needs, referral to substance use and mental health treatment services, social services support (e.g., housing, transportation, and application for state medical and disability assistance) through case management. Also known as Project Vista	<u>Viral suppression</u> VL<=75 copies m/L No significant difference in viral suppression was observed between patients who accessed service co-location (n=116) vs. the general HIV population (n=961) 48.3% vs. 51.7% , p=0.17	No	Tier 3
Horberg 2007 (10)	To determine the association of clinical pharmacists with health outcomes and service utilization	US (Northern California)	Kaiser Permanente medical centers	ART naive	HIV care (initiation of HAART), clinical pharmacist conducts regimen counseling, adverse effects management, and case management	<u>Viral suppression</u> HIV RNA level <500 copies/mL at 12 and 24 months No significant difference in viral suppression was observed between patients in clinics that provided service co-location (n=733) vs. patients in clinics that did not provide service co-location [n=838, reference group]	No[8]	Tier 3

[6] HR= hazard ratio, a value greater than 1 indicates positive association (i.e., more likely to achieve viral suppression)

[8] P=0.05 (borderline "yes") for subgroups like MSM and patients with less comorbidity

						At 12 months - adjOR=2.01 (0.92-4.37) At 24 months - adjOR=1.11 (0.46-2.70)		
Horberg 2012 (11)	To determine the optimized composition of a multidisciplinary care team for ART adherence	US (California)	Kaiser Permanente medical centers	General	HIV/ID specialist, with different combinations of HIV nurse case manager, non-nurse care coordinator, clinical pharmacist, social worker, dietitian, health educator, and mental health worker	<u>Viral suppression</u> HIV RNA level <500 copies/mL 1996-2000 and <75 copies/mL after 2000, measured closest to 12 months after ART initiation No significant difference in viral suppression was observed between patients in clinics that provided service co-location vs. patients in clinics that did not provide service co-location [i.e., HIV/ID specialist only, reference group], total n = 9,669 Subgroup analyses: adjOR=1.19 (0.81-1.74)[9] adjOR=1.30 (0.64-2.67)[10] adjOR=0.92 (0.62-1.37)[11] adjOR=0.69 (0.39-1.20)[12] adjOR=0.82 (0.58-1.18)[13]	No	Tier 3

[9] Pharmacist + non-HIV primary care provider vs. HIV/ID specialist only
[10] Pharmacist + non-nurse care coordinator + non-HIV primary care provider vs. HIV/ID specialist only
[11] Nurse + social worker/benefits coordinator + non-HIV primary care provider vs. HIV/ID specialist only
[12] HIV specialist + mental health worker vs. HIV/ID specialist only
[13] Pharmacist + social worker/benefit coordinator + non-HIV primary care provider vs. HIV/ID specialist only

HIV care co-located with TB care (8 findings; 8 studies)								
Huerga 2010 (12)	To evaluate the impact of an integrated TB-HIV management program on patient care and TB treatment outcomes	International (Kenya)	TB clinic	Co-infected with TB	HIV test and care (including ART initiation or continuation), TB care	<u>ART uptake</u> Received ART Among patients requiring ART, a greater proportion of patients who received care when service co-location was implemented for a year (n=325) received ART, and when service co-location was implemented for 2 years (n=332) received ART, compared to patients who received care prior to the implementation of service co-location (n=304) 46%, 44% vs. 9%, p< 0.01	Yes[14]	Tier 2
Ikeda 2014 (13)	To examine the impact of integrated TB/HIV care on clinical and survival outcomes	International (Guatemala)	TB hospital	Co-infected with TB	HIV test & care (including co-located 'ART clinic'), TB care, hepatitis screening, CT scanning, MRI, lung and mass biopsies, STD treatment	<u>ART uptake</u> Received ART Patients receiving care during the implementation of service co-location (n=155) were significantly more likely to receive ART than patients receiving care prior to the implementation of service co-location (n=99) 72% vs. 22%	Yes	Tier 2

[14] Tested among a subsample of HIV-positive TB patients requiring ART

						OR=9.1 (4.8-17.4)		
Kerschberg-er 2012 (14)	To estimate the effect of TB/HIV integration on time to initiation of ART	International (South Africa)	Primary care clinic providing TB treatment	Co-infected with TB	HIV test and integrated HIV and TB care and case management (including the same pharmacist providing ART and TB drugs), management of STDs, family planning and prevention	<u>ART uptake</u> Started ART Patient receiving care after the implementation of service co-location (n=88) were significantly more likely to start ART than patients receiving care prior to the implementation of service co-location [n=100, reference group] adjHR=1.60 (1.11-2.29), p=0.011	Yes[15]	Tier 2
Van Rie 2014 (15)	To evaluate nurse-centered, integrated TB/HIV treatment using a CD4-stratified ART timing strategy	International (Democratic Republic of Congo)	Primary care clinics providing TB treatment	Co-infected with TB	HIV care, TB treatment (received morning ART dose and TB meds under direct observation during week)	<u>ART uptake</u> Initiated ART during TB treatment A significantly higher proportion of patients receiving care during the implementation of service co-location (n=513) initiated ART than patients receiving care prior to the implementation of service co-location (n=373) 69% vs. 17%, p<0.0001	Yes	Tier 2

[15] Also “yes” in all sensitivity analyses

Lawn 2011 (16)	To determine the timing of ART initiation in integrated vs. separate clinics	International (South Africa)	ART clinic	Co-infected with TB	HIV care ('ART clinic'), TB diagnosis	<u>ART uptake</u> Time from TB diagnosis to start of ART Patients who accessed service co-location (i.e., received TB diagnosis in ART clinic) (n=195) had significantly more rapid initiation of ART than patients who did not access service co-location [n=581, reference group, received TB diagnosis in TB clinic and referred for ART] adjSHR[16]=1.88 (1.51-2.34), p<0.001	Yes[17]	Tier 3
Louwagie 2012 (17)	To compare access to HIV care between settings where ART and TB care were semi-integrated vs. separately provided	International (South Africa)	Public TB treatment facilities and community health centers providing TB & ART	Co-infected with TB	HIV care (ART) and TB treatment	<u>ART uptake</u> Started ART Patients receiving care from facilities that provided service co-location (n=105) were significantly more likely to initiate ART than patients receiving care from facilities that did not provide service co-location (n=233)	Yes[18]	Tier 3

[16] AdjSHR=adjusted sub-hazard ratio. Higher ratios mean more rapid initiation of ART.

[17] Also "yes" among a subsample of patients with CD4 cell count <50 for "starting ART within 8 weeks" and "within 1 month"

[18] Also "yes" in "sensitivity analysis" involving all HIV-positive TB patients regardless of CD4, not on prior ART, or were not transferred in or out

						adjSHR=2.49 (1.06-5.88), p=0.037		
Schwartz 2013 (18)	To determine if patients in TB clinics without co-located HIV clinics have greater delays in accessing ART compared to patients in TB clinics with on-site HIV clinics	International (Botswana)	Primary care clinics	Co-infected with TB	HIV care (including pharmacy providing HAART), TB treatment	<u>ART uptake</u> Median time to HAART (IQR) [interquartile range] No significant difference in median time to ART uptake was observed between patients in clinics that provided service co-location (n=42) vs. patients in clinics that did not provide service co-location (n=143) 66 days vs. 63 days, p=0.53	No[19]	Tier 3
Schulz 2013 (19)	To evaluate the outcomes of patients co-infected with HIV and TB who received different models of TB-HIV care	International (South Africa)	Primary health care clinics	Co-infected with TB	HIV care (ART) and TB treatment	<u>Viral suppression</u> Undetectable viral load at 6 months (undetectable level not specified) No significant difference in viral suppression was observed between patients who accessed service co-location (i.e., received HIV and TB treatment from the same providers) (n=109) vs. patients who did not access service co-location (i.e., received HIV and TB	No[21]	Tier 2

[19] Also "no" in a subsample with baseline CD4<100 cells/mm^3

[21] Tested among a subsample of patients who remained in care at 6 months

						treatment from different providers in the same or different clinics)[20] (n=92) 87% vs. 88.3%, p=0.796		
HIV care co-located with non-HIV primary care (10 findings; 6 studies)								
Turan 2015 (20)	To determine whether integration of HIV services into antenatal care (ANC) settings improves service utilization and health outcomes	International (Kenya)	ANC clinics	Pregnant women	HIV care (HAART), antenatal care including PMTCT	<u>Linkage</u> Enrolled into HIV care and treatment by 12 months of study enrollment Patients in "intervention clinics" that provided integrated services (i.e., ANC clinics that provided all HIV services) (n=569) were significantly more likely to be linked to HIV care than patients in "control clinics" that did not provide integrated services (i.e., ANC clinics that referred HIV-positive pregnant women to a separate HIV clinic within the same facility) (n=603) 69% vs. 36% OR=3.94 (1.14-13.63) Median time (days) from study enrollment to women's enrollment in HIV care	Yes	Tier 1

[20] No significant difference in "unfavorable ART outcome (death, default and treatment stopped)" was observed between patients receiving HIV and TB treatment from two different providers in the same facility vs. patients receiving HIV and TB treatment from two different providers in two geographically separate facilities. Viral suppression was not considered for this comparison.

						Patients in “intervention clinics” (n=569) had significantly shorter time to HIV care enrollment than patients in “control clinics” (n=603) 0 vs. 8 days HR=2.20 (1.62-3.01)		
Killam 2010 (21)	To evaluate whether ART integrated in antenatal care clinics increased the proportion of eligible women initiating ART	International (Zambia)	Public sector antenatal clinics	Pregnant women	HIV care including ART, physical exam, WHO staging, and treatment of opportunistic infections, health education, antenatal care, ART counseling	<u>Linkage</u> Enrolled into ART services within 60 days of starting antenatal care and prior to delivery or expected date of delivery Patients receiving care during the period when service co-location was implemented (n=846) were more likely to be linked to HIV care compared to patients receiving care prior to the implementation of service co-location [n=716, reference group] adjOR=2.06 (1.27-3.34)	Yes	Tier 2
Pfeiffer 2010 (22)	To present a case study of the integration of HIV care services into the	International (Mozambique)	Public sector primary health care system (linked hospitals, health centers, and health posts)	General	HIV test and care (ART provision), regular outpatient consults, inpatient treatment, antenatal care including	<u>Linkage</u> Referred from PMTCT/antenatal care and registered for HIV care <30 days post-test	Yes[22]	Tier 3

[22] Tested among women

	primary health care system				PMTCT, TB test, routine syphilis testing and treatment, malaria therapy	Patients in facilities that provided service co-location (sample size not specified) were significantly more likely to be linked to care than patients in facilities that did not provide service co-location [sample size not specified, reference group] RR=2.53 (1.88-3.40), total n=3598		
Turan 2015 (20)	To determine whether integration of HIV services into antenatal care (ANC) settings improves service utilization and health outcomes	International (Kenya)	ANC clinics	Pregnant women	HIV care (HAART), antenatal care including PMTCT	<u>Retention</u> Had at least 2 HIV care follow-up visits in the 1st 6 months of enrollment No significant difference in retention was observed between patients in "intervention clinics" (n=393) vs. patients in "control clinics" (n=218) 48% vs. 56% OR=0.73 (0.47-1.14)	No	Tier 1
Greig 2012 (23)	To assess outcomes of patients treated with ART in integrated vs. vertical HIV programs	International (sub-Saharan Africa)	Médecins Sans Frontières MSF) clinics	General	HIV care, provision of comprehensive health care including general inpatient wards, maternity, and TB services	<u>Retention</u> Missed a scheduled appointment by 2 months or more Patients in clinics that provided service co-location (n=1279) were significantly	Yes	Tier 3

						less likely to miss a scheduled appointment (i.e., higher retention) than patients in clinics that did not provide service co-location [n=14,124, reference group] adjHR=0.71 (0.61-0.83)		
Turan 2015 (20)	To determine whether integration of HIV services into antenatal care (ANC) settings improves service utilization and health outcomes	International (Kenya)	ANC clinics	Pregnant women	HIV care (HAART), antenatal care including PMTCT	<u>ART uptake</u> Initiated HAART among eligible women within 12 months of study enrollment Patients in "intervention clinics" (n=127) were significantly more likely to initiate ART than patients in "control clinics" (n=87) 40% vs. 17% OR=3.22 (1.81-5.72)	Yes	Tier 1
Killam 2010 (21)	To evaluate whether ART integrated in antenatal care clinics increased the proportion of eligible women initiating ART	International (Zambia)	Public sector antenatal clinics	Pregnant women	HIV care including ART, physical exam, WHO staging, and treatment of opportunistic infections, health education, antenatal care, ART counseling	<u>ART uptake</u> Initiated ART within 60 days and before delivery or expected date of delivery Patients receiving care during the period when service co-location was implemented (n=846) were more likely to initiate ART than patients receiving care prior to the implementation of service co-location [n=716, reference group]	Yes	Tier 2

						adjOR=2.01 (1.37-2.95)		
Lambdin 2013 (24)	To determine the effects of integrating ART into primary health care clinics on quality of HIV care	International (Mozambique)	Public-sector clinics	ART naive	HIV care (ART services), non-HIV outpatient services	<u>ART uptake</u> Average number of days between enrolling at the facility and initiating treatment Patients in clinics that provided service co-location (n=5585) had significantly fewer days until initiated treatment than patients in clinics that did not provide service co-location (n=6190) 93 days vs. 180 days, p<0.01	Yes	Tier 3
Pfeiffer 2010 (22)	To present a case study of the integration of HIV care services into the primary health care system	International (Mozambique)	Public sector primary health care system (linked hospitals, health centers, and health posts)	General	HIV test and care (ART provision), regular outpatient consults, inpatient treatment, antenatal care including PMTCT, TB test, routine syphilis testing and treatment, malaria therapy	<u>ART uptake</u> (1)starting ART (2)starting ART <90 days Patients in facilities that provided service co-location (sample size not specified) were significantly more likely to initiate ART than patients in facilities that did not provide service co-location [sample size not specified, reference group] (1)RR=1.29 (1.07-1.56) - staring ART	Yes[23]	Tier 3

[23] Tested among women

						(2)RR=1.58 (1.17-2.14) - starting ART< 90 days, total n=11,535		
Stinson 2010 (25)	To assess ART initiation among pregnant women and determine the optimum model for integrating ART services into antenatal care	International (South Africa)	Antenatal clinics	Pregnant women	HIV care (HAART), antenatal care including PMTCT	<u>ART uptake</u> ART initiation by the time of delivery No significant difference in ART uptake was observed between patients in a clinic that provided service co-location (n=227) [reference group] vs. patients in a clinic that did not provide service co-location (i.e., a clinic that referred women to a stand-alone antiretroviral service in a separate building on the same premise) (n =159) adjOR=0.77 (0.48-1.26), p=0.30 No significant difference in ART uptake was observed between patients in a clinic that provided service co-location (n=227) [reference group] vs. patients in clinics that did not provide service co-location (i.e., a clinic that referred women to antiretroviral services within a 5 km radius) (n=130)	No	Tier 3

						adjOR=0.62 (0.37-1.04), p=0.07		
HIV care co-located with drug treatment (9 findings; 6 studies)								
Lucas 2010 (26)	To compare clinic-based BUP[24] vs. case management and referral to an opioid treatment program	US (Baltimore)	University-based HIV clinic	PUD[25]	HIV care, clinic-based BUP induction and dose titration, urine drug testing, unstructured individual counseling	<u>Retention</u> Median number of visits with primary HIV care providers during 12 months (IQR) Patients randomized into a condition that accessed service co-location (n=46) had a significantly better retention outcome than patients randomized into a condition that did not access service co-location (i.e., referred to opioid treatment) (n= 47) 3.5 medical visits vs. 3 medical visits, p=0.047	Yes	Tier 1
Achmad 2009 (27)	To determine the effectiveness of ART among methadone clients and patients who started ART outside the methadone program	International (Indonesia)	Hospital-based MMT[26]	PUD	HIV care (ART), methadone treatment	<u>Retention</u> Not returning for more than 3 months without confirmation of death or transfer during 2-year period No significant difference in retention was observed between patients who accessed service co-location	No	Tier 2

[24] BUP=buprenorphine
[25] PUD=persons who use drugs
[26] MMT=methadone maintenance therapy

						(n= 35) vs. patients who did not access service co-location (i.e., patients who took ART outside MMT) (n=175) 100% vs. 97.1%, p=0.23		
Altice 2011 (28)	To assess the effect of BUP/NX[27] maintenance on HIV treatment outcomes	US (Baltimore, Bronx, Chicago, Miami, New Haven, Oakland, Portland OR, Providence, San Francisco, Tucson)	HIV clinical sites	PUD	HIV care, substance abuse (BUP/NX) treatment	<u>ART uptake</u> Being on ART (confirmed by chart review) Patients receiving care during the implementation of service co-location were significantly more likely to be on ART at 3, 6, 9, and 12 month follow-up periods (n=214, 192, 182, 187, respectively) compared to patients receiving care prior to the implementation of service co-location [n=295, reference group] adjExpB=1.54 (1.15-2.07), p<0.01 at 3 months adjExpB=1.52 (1.13-2.04), p<0.01 at 6 months adjExpB=1.41 (1.01-1.95), p=0.04 at 9 months adjExpB=1.49 (1.07-2.07), p=0.02 at 12 months	Yes	Tier 2
Bachireddy 2014 (29)	To assess integrated/co-located	International (Ukraine)	Unspecified sites	PUD	HIV test and care, onsite daily observed OST[28], psychological	<u>ART uptake</u> Received ART within past 6 months	Yes	Tier 3

[27] BUP/NX=buprenorphine/naloxone
[28] OST=Opioid substitution therapy

	healthcare for HIV-infected persons who inject drugs				counseling, TB screening and treatment	A significantly higher proportion of patients from sites that provided service co-location (n=97) received ART than patients from sites that did not provide service co-location (n=104, only OST and psychological counseling) 49.5% vs. 19.2% p<0.001 A significantly higher proportion of patients from sites that provided service co-location (n=97) received ART than patients from sites that did not provide service co-location (n=95, harm reduction and outreach sites) 49.5% vs. 26.3% p<0.001 Received ART <u>if CD4≤200 within past 6 months</u> A significantly higher proportion of patients from sites that provided service co-location (n=97) received ART than patients from sites that did not provide service co-location (n=104, only OST and psychological counseling) 93.8% vs. 62.5% p<0.001		

						A significantly higher proportion of patients from sites that provided service co-location (n=97) received ART than patients from sites that did not provide service co-location (n=95, harm reduction and outreach sites) 93.8% vs. 54.6% p<0.05		
Lucas 2010 (26)	To compare clinic-based BUP vs. case management and referral to an opioid treatment program	US (Baltimore)	University-based HIV clinic	PUD[29]	HIV care, clinic-based BUP[30] induction and dose titration, urine drug testing, unstructured individual counseling	<u>Viral suppression</u> Changes from baseline to 12 months follow-up in HIV RNA levels No significant difference in viral suppression was observed between patients randomized into a condition that accessed service co-location (n=46) vs. patients randomized into a condition that did not access service co-location (n=47), p=0.31[31]	No[32]	Tier 1
Lucas 2006 (30)	To assess whether DAART [33] in methadone	US (Baltimore)	University and community-	PUD	HIV care (DAART), methadone treatment	<u>Viral suppression</u>	Yes	Tier 2

[29] PUD=persons who use drugs
[30] BUP=buprenorphine
[31] No specific statistics were provided
[32] Measure for viral suppression was not available
[33] DAART=directly administered antiretroviral therapy

	clinics improves HIV treatment outcomes		based methadone clinics			IV RNA level <400 copies/mL during 12 months follow-up time frame IDU[34]patients who accessed service co-location [i.e., DAART and methadone treatment] (n=82) were significantly more likely to achieve viral suppression than IDU patients in the Johns Hopkins HIV Cohort who self-administered ART and did not receive methadone treatment, n=244, reference group]. adjOR=2.0 (1.25, 3.33)		
Sorensen 2012 (31)	To assess the feasibility and effectiveness of providing DAART in a methadone clinic	US (San Francisco)	Hospital-based outpatient methadone program	PUD	HIV care (DAART), methadone treatment, adherence counseling	<u>Viral suppression</u> plasma HIV-1 RNA <75 copies/mL A higher proportion of patients receiving care during the implementation of service co-location achieved viral suppression at 12 weeks, 24 weeks, 36 weeks, and 48 weeks (n=21, 21, 20, 19) than patients receiving care prior to the implementation of service co-location (n=24): BL 0%,	Yes	Tier 2

[34] IDU=injection drug use

						12 weeks 86%, p<0.001 24 weeks 76%, p<0.001 36 weeks 80%, p<0.001 48 weeks 79%, p<0.001 McNemar's test comparing BL vs. each follow-up<0.001		
Altice 2011 (28)	To assess the effect of BUP/NX maintenance on HIV treatment outcomes	US (Baltimore, Bronx, Chicago, Miami, New Haven, Oakland, Portland OR, Providence, San Francisco, Tucson)	HIV clinical sites	PUD	HIV care, substance abuse (BUP/NX) treatment	<u>Viral suppression</u> HIV-1RNA<400 copies m/L No significant difference in viral suppression was observed between patients receiving care during the implementation of service co-location at the 3, 6, 9, and 12 month follow-up periods (n = 171, 156, 150, 150) vs. patients receiving care prior to the implementation of service co-location [n=227, reference group] adjExpB=1.07 (0.64-1.79) at 3 months adjExpB=0.86 (0.50-1.48) at 6 months adjExpB=0.98 (0.54-1.80) at 9 months adjExpB=0.89 (00.48-1.65) at 12 months	No	Tier 2
Achmad 2009 (27)	To determine the effectiveness of ART among	International (Indonesia)	Hospital-based MMT[35]	PUD	HIV care (ART), methadone treatment	<u>Viral suppression</u>	No	Tier 2

[35] MMT=methadone maintenance therapy

	methadone clients and patients who started ART outside the methadone program					HIV RNA <400 copies/mL after a median duration of ART of 418 days No significant difference in viral suppression was observed between patients who accessed service co-location and patients who did not access service co-location 96.3% vs. 89.5%, p=0.27[36]		
HIV care co-located with prevention of mother to child transmission (PMTCT) services (5 findings; 3 studies)								
Adojorlolo-Johnson 2013 (32)	To identify characteristics associated with pediatric HIV service utilization	International (Ivory Coast, Mozambique, South Africa, Tanzania, Zambia)	Clinical facilities providing HIV treatment services	Children	Pediatric HIV care, PMTCT	<u>Linkage</u> % of clinics with ≥100 cumulative number of children in care Clinics with co-located PMTCT (n=186) were significantly more likely to have ≥ 100 children in care than clinics without co-located PMTCT (n=34) 40% vs. 21% AdjOR=3.1 (1.1-11.1)	Yes	Tier 3
Tsague 2010 (33)	To compare sites providing PMTCT and ART vs. sites providing PMTCT as a	International (Rwanda)	District hospitals and health centers	Pregnant women	HIV care (ART), PMTCT	<u>Linkage</u> Enrolled in care and treatment services during pregnancy Patients who accessed service co-location (n= 743) were	Yes	Tier 3

[36] HIV-RNA measurements were available for 140 patients. Sample size for each group was not reported.

	stand-alone service					significantly more likely to be linked to HIV care than patients who did not access service co-location (n = 195, where the only service provided was PMTCT) 67% vs.35% RR=1.9 (1.5-2.3)		
Adjorlolo-Johnson 2013 (32)	To identify site characteristics associated with pediatric HIV service utilization	International (Ivory Coast, Mozambique, South Africa, Tanzania, Zambia)	Clinical facilities providing HIV treatment services	Children	Pediatric HIV care, PMTCT	<u>ART uptake</u> % of clinics with ≥10% of children on ART who are <2 years old Clinics with co-located PMTCT service (n=188) were significantly more likely to have children on ART than clinics without co-located PMTCT service (n=43) 53% vs. 21% AdjOR=2.9 (1.1-8.1)	Yes	Tier 3
Tsague 2010 (33)	To compare sites providing PMTCT and ART vs. sites providing PMTCT as a stand-alone service	International (Rwanda)	District hospitals and health centers	Pregnant women	HIV care (ART), PMTCT	<u>ART uptake</u> Initiated HAART among women with CD4 count <350 cells/mm3 Among women with CD4 count <350 copies, no significant difference in ART uptake was observed between patients who accessed service co-location (n=135) and patients who did not access	No	Tier 3

						service co-location (n=26, where the only service provided was PMTCT) 78% vs. 85% RR=0.9 (0.7-1.1)		
Lahuerta 2012 (34)	To identify individual and clinic-level factors associated with late ART initiation	International (Mozambique)	HIV care and treatment clinics	ART naive	HIV care (including provision of ART), PMTCT	<u>ART uptake</u> Late ART initiation defined as having CD4<100 cells/uL or WHO stage IV at any time prior to or up to one month after ART initiation Patients in clinics providing co-located PMTCT (n=23,587) were significantly less likely to have late ART initiation (i.e., more ART uptake) than patients in clinics not providing co-located PMTCT [n = 12,824, reference group] AdjOR=0.85 (0.77-0.93)	Yes	Tier 3
HIV care co-located with mental health care (3 findings; 2 studies)								
Sullivan 2006 (35)	To examine the effect of co-location of mental health and HIV care on satisfaction, service utilization, and appropriateness of care	US (Los Angeles)	Publicly funded mental health agencies including freestanding mental health clinics, jails, hospitals, and other facilities	Mental illness	HIV care, mental health care	<u>Retention</u> ≥ 2 HIV visits in the last 6 months No significant difference in retention was observed between patients who accessed service co-location (n=34) vs. patients who received mental health care at	No	Tier 3

						different locations and there was evidence of communication between HIV and mental health care providers (n=22) vs. patients who received mental health care at different locations and there was no evidence of communication between HIV and mental health care providers (n=61) 94% vs.100% vs. 89% , p=0.2		
Sullivan 2006 (35)	To examine the effect of co-location of mental health and HIV care on satisfaction, service utilization, and appropriateness of care	US (Los Angeles)	Publicly funded mental health agencies including freestanding mental health clinics, jails, hospitals, and other facilities	Mental illness	HIV care, mental health care	<u>ART uptake</u> Ever taken ART No significant difference in ART uptake was observed between who accessed service co-location (n=34) vs. patients who received mental health care at different locations and there was evidence of communication between HIV and mental health care providers (n=23) vs. patients who received mental health care at different locations and there was no evidence of communication between HIV and mental health care providers (n=61) 94% vs. 96% vs. 92%, p=0.798	No	Tier 3

Coleman 2012 (36)	To assess the effectiveness of integrated and measurement-based depression care on depression and HIV virologic and immunologic outcomes	US (Boston)	HIV clinic of tertiary hospital	Mental illness	HIV care, outpatient psychiatric consultation service including the use of psychopharmacological agents, psychological therapy, and active case management	<u>Viral suppression</u> Mean HIV RNA levels A significant reduction in HIV RNA levels was observed between pre- vs. post-co-located psychiatric treatment 14,112 (SD=35,412) vs. 4003 (SD=14,500) p=0.003, n=124	Yes[37]	Tier 2

[37] Measure of viral suppression was not available