Engaging Veterans Experiencing Homelessness in Primary Care

October 2024

U.S. Department of Veterans Affairs
Veterans Health Administration
Health Systems Research

Recommended citation: Rieke K, Caputo E, Baltich Nelson B, et al. Engaging Veterans Experiencing Homelessness in Primary Care: A Systematic Review. Washington, DC: Evidence Synthesis Program, Health Systems Research, Office of Research and Development, Department of Veterans Affairs. VA ESP Project #22-116; 2024.

Appendix

APPENDIX A. SEARCH STRATEGIES

Search Date: 03/26/2024		Search Statement	Results
Ovid Medline	1	exp Primary Health Care/ or Physicians, Family/ or Physicians, Primary Care/ or General Practitioners/ or Family Practice/ or Community Health Services/ or Community Health Nursing/ or exp Community Health Centers/ or Family Nursing/ or Mobile Health Units/ or ((primary adj3 (care or healthcare)) or ((annual or health or wellness) adj3 (exam* or visit*)) or ((family or general) adj3 (doctor* or medicine or nurse* or physician* or practi*)) or (collaborative adj2 (care or model* or practi?e*)) or (community adj3 (health* or nurs*)) or (mobile adj3 (hospital* or health unit* or health van* or clinic*)) or ((coordinat* or co-locat* or colocat* or integrat*) adj3 (health service* or health care or healthcare)) or (patient-centered adj3 medical home*) or PCMH or (patient aligned adj (care or healthcare) adj team*) or PACT or PACTs).ti,ab,kf.	662562
	2	Veterans/ or Veterans Health/ or Veterans Health Services/ or veteran*.ti,ab,kf.	49894
	3	exp Ill-Housed Persons/ or exp Homeless Persons/ or (homeless* or ill-housed or "no fixed address" or roofless* or rough sleep* or squatter* or ((street or transient*) adj3 (adolescent* or adult* or dweller* or individual* or man or men or people* or person* or population* or teen* or woman or women or youth*)) or ((inequalit* or insecurit* or instabilit* or lack or nonpermanent or non-permanent or precarious or temporary or supportive or unstable* or vulnerab*) adj2 (home* or hous* or accommodation* or apartment* or shelter* or hostel* or dwelling*))).ti,ab,kf.	26748
	4	and/1-3	220
	5	(Compensated Work Therapy or CWT or Domiciliary Care for Homeless Veterans or DCHV or "Grants and Per Diem" or GPD or Health Care for Reentry Veterans or HCRV or Health Care for Homeless Veterans or HCHV or Homeless Veteran Community Employment or HVCES or Homeless Veterans Dental Program or Stand Down* or "Substance Use Disorder Treatment Enhancement Initiative" or Supportive Services for Veteran Families or SSVF or Veterans Affairs Supportive Housing or VA Supportive Housing or HUD-VASH or Veteran Justice Outreach or VJO).ti,ab,kf.	2429
	6	1 and 5	36
	7	(HPACT or HPACTs or Homeless Patient Aligned Care Team*).ti,ab,kf.	22
	8	4 or 6 or 7	247
Cochrane	1	MeSH descriptor: [Primary Health Care] explode all trees	11756
	2	MeSH descriptor: [Physicians, Family] this term only	538
	3	MeSH descriptor: [Physicians, Primary Care] this term only	243
	4	MeSH descriptor: [General Practitioners] this term only	592
	5	MeSH descriptor: [Family Practice] this term only	2373

6	MeSH descriptor: [Community Health Services] this term only	1371
7	MeSH descriptor: [Community Health Nursing] this term only	387
8	MeSH descriptor: [Community Health Centers] explode all trees	715
9	MeSH descriptor: [Family Nursing] this term only	48
10	MeSH descriptor: [Mobile Health Units] this term only	84
11	((primary NEAR/3 (care or healthcare)) or ((annual or health or wellness) NEAR/3 (exam* or visit*)) or ((family or general) NEAR/3 (doctor* or medicine or nurse* or physician* or practi*)) or (collaborative NEAR/2 (care or model* or practi?e*)) or (community NEAR/3 (health* or nurs*)) or (mobile NEAR/3 (hospital* or health unit* or health van* or clinic*)) or ((coordinat* or co-locat* or colocat* or integrat*) NEAR/3 (health service* or health care or healthcare)) or (patient-centered NEAR/3 medical home*) or PCMH or (patient aligned NEAR/1 (care or healthcare) NEAR/1 team*) or PACT or PACTs):ti,ab,kw	67505
12	{or #1-#11}	71931
13	MeSH descriptor: [Veterans] this term only	1665
14	MeSH descriptor: [Veterans Health] this term only	72
15	MeSH descriptor: [Veterans Health Services] this term only	9
16	veteran*:ti,ab,kw	7541
17	{or #13-#16}	7541
18	MeSH descriptor: [Ill-Housed Persons] explode all trees	543
19	(homeless* or ill-housed or "no fixed address" or roofless* or rough sleep* or squatter* or ((street or transient*) NEAR/3 (adolescent* or adult* or dweller* or individual* or man or men or people* or person* or population* or teen* or woman or women or youth*)) or ((inequalit* or insecurit* or instabilit* or lack or nonpermanent or non-permanent or precarious or temporary or supportive or unstable* or vulnerab*) NEAR/2 (home* or hous* or accommodation* or apartment* or shelter* or hostel* or dwelling*))):ti,ab,kw	1923
20	#18 or #19	1923
21	#12 and #17 and #20	40
22	(Compensated Work Therapy or CWT or Domiciliary Care for Homeless Veterans or DCHV or "Grants and Per Diem" or GPD or Health Care for Reentry Veterans or HCRV or Health Care for Homeless Veterans or HCHV or Homeless Veteran Community Employment or HVCES or Homeless Veterans Dental Program or Stand Down* or "Substance Use Disorder Treatment Enhancement Initiative" or Supportive Services for Veteran Families or SSVF or Veterans Affairs Supportive Housing or VA Supportive Housing or HUD-VASH or Veteran Justice Outreach or VJO):ti,ab,kw	919
23	#12 and #22	117
24	(HPACT or HPACTs or Homeless Patient Aligned Care Team*):ti,ab,kw	5
25	#21 or #23 or #24	97

CINAHL	1	((MH “Primary Health Care”) or (MH “Physicians, Family”) or (MH “Family Practice”) or (MH “Community Health Services+”) or (MH “Community Health Nursing+”) or (MH “Community Health Centers+”) or (MH “Family Nurses”) or (MH “Family Nursing”) or (MH “Family Nurse Practitioners”) or (MH “Mobile Health Units”)) OR TI (((primary N3 (care or healthcare)) or ((annual or health or wellness) N3 (exam* or visit*)) or ((family or general) N3 (doctor* or medicine or nurse* or physician* or practi*)) or (collaborative N2 (care or model* or practi?e*)) or (community N3 (health* or nurs*)) or (mobile N3 (hospital* or health unit* or health van* or clinic*)) or ((coordinat* or co-locat* or colocat* or integrat*) N3 (health service* or health care or healthcare)) or (patient-centered N3 medical home*) or PCMH or (patient aligned N1 (care or healthcare) N1 team*) or PACT or PACTs)) OR AB (((primary N3 (care or healthcare)) or ((annual or health or wellness) N3 (exam* or visit*)) or ((family or general) N3 (doctor* or medicine or nurse* or physician* or practi*)) or (collaborative N2 (care or model* or practi?e*)) or (community N3 (health* or nurs*)) or (mobile N3 (hospital* or health unit* or health van* or clinic*)) or ((coordinat* or co-locat* or colocat* or integrat*) N3 (health service* or health care or healthcare)) or (patient-centered N3 medical home*) or PCMH or (patient aligned N1 (care or healthcare) N1 team*) or PACT or PACTs))	819396
	2	(MH "Veterans+") or (MH “Veterans Health Services”) or veteran*	36592
	3	(MH "Homeless Persons") OR TI ((homeless* or ill-housed or "no fixed address" or roofless* or rough sleep* or squatter* or ((street or transient*) N3 (adolescent* or adult* or dweller* or individual* or man or men or people* or person* or population* or teen* or woman or women or youth*)) or ((inequalit* or insecurit* or instabilit* or lack or nonpermanent or non-permanent or precarious or temporary or supportive or unstable* or vulnerab*) N2 (home* or hous* or accommodation* or apartment* or shelter* or hostel* or dwelling*)))) OR AB ((homeless* or ill-housed or "no fixed address" or roofless* or rough sleep* or squatter* or ((street or transient*) N3 (adolescent* or adult* or dweller* or individual* or man or men or people* or person* or population* or teen* or woman or women or youth*)) or ((inequalit* or insecurit* or instabilit* or lack or nonpermanent or non-permanent or precarious or temporary or supportive or unstable* or vulnerab*) N2 (home* or hous* or accommodation* or apartment* or shelter* or hostel* or dwelling*))))	18001
	4	S1 and S2 and S3	187
	5	TI ((Compensated Work Therapy or CWT or Domiciliary Care for Homeless Veterans or DCHV or "Grants and Per Diem" or GPD or Health Care for Reentry Veterans or HCRV or Health Care for Homeless Veterans or HCHV or Homeless Veteran Community Employment or HVCES or Homeless Veterans Dental Program or Stand Down* or "Substance Use Disorder Treatment Enhancement Initiative" or Supportive Services for Veteran Families or SSVF or Veterans Affairs Supportive Housing or VA Supportive Housing or HUD-VASH or Veteran Justice Outreach or VJO)) OR AB ((Compensated Work	346

		Therapy or CWT or Domiciliary Care for Homeless Veterans or DCHV or "Grants and Per Diem" or GPD or Health Care for Reentry Veterans or HCRV or Health Care for Homeless Veterans or HCHV or Homeless Veteran Community Employment or HVCES or Homeless Veterans Dental Program or Stand Down* or "Substance Use Disorder Treatment Enhancement Initiative" or Supportive Services for Veteran Families or SSVF or Veterans Affairs Supportive Housing or VA Supportive Housing or HUD-VASH or Veteran Justice Outreach or VJO))	
	6	S1 and S5	41
	7	(HPACT or HPACTs or Homeless Patient Aligned Care Team*)	14
	8	S4 or S6 or S7	217
PsycInfo	1	exp Primary Health Care/ or Physicians, Family/ or General Practitioners/ or Family Medicine/ or exp Community Mental Health Services/ or Community Mental Health Centers/ or ((primary adj3 (care or healthcare)) or ((annual or health or wellness) adj3 (exam* or visit*)) or ((family or general) adj3 (doctor* or medicine or nurse* or physician* or practi*)) or (collaborative adj2 (care or model* or practi?e*)) or (community adj3 (health* or nurs*)) or (mobile adj3 (hospital* or health unit* or health van* or clinic*)) or ((coordinat* or co-locat* or colocat* or integrat*) adj3 (health service* or health care or healthcare)) or (patient-centered adj3 medical home*) or PCMH or (patient aligned adj (care or healthcare) adj team*) or PACT or PACTs).ti,ab	131367
	2	Military Veterans/ or veteran*.ti,ab	28094
	3	exp Homeless/ or (homeless* or ill-housed or "no fixed address" or roofless* or rough sleep* or squatter* or ((street or transient*) adj3 (adolescent* or adult* or dweller* or individual* or man or men or people* or person* or population* or teen* or woman or women or youth*)) or ((inequalit* or insecurit* or instabilit* or lack or nonpermanent or non-permanent or precarious or temporary or supportive or unstable* or vulnerab*) adj2 (home* or hous* or accommodation* or apartment* or shelter* or hostel* or dwelling*))).ti,ab	18002
	4	and/1-3	89
	5	(Compensated Work Therapy or CWT or Domiciliary Care for Homeless Veterans or DCHV or "Grants and Per Diem" or GPD or Health Care for Reentry Veterans or HCRV or Health Care for Homeless Veterans or HCHV or Homeless Veteran Community Employment or HVCES or Homeless Veterans Dental Program or Stand Down* or "Substance Use Disorder Treatment Enhancement Initiative" or Supportive Services for Veteran Families or SSVF or Veterans Affairs Supportive Housing or VA Supportive Housing or HUD-VASH or Veteran Justice Outreach or VJO).ti,ab	293
	6	1 and 5	8
	7	(HPACT or HPACTs or Homeless Patient Aligned Care Team*).ti,ab	4
	8	4 or 6 or 7	90

Scopus	1	TITLE-ABS-KEY((primary W/3 (care OR healthcare)) OR ((annual OR health OR wellness) W/3 (exam* OR visit*)) OR ((family OR general) W/3 (doctor* OR medicine OR nurse* OR physician* OR practi*)) OR (collaborative W/2 (care OR model* OR practi?e*)) OR (community W/3 (health* OR nurs*)) OR (mobile W/3 (hospital* OR "health unit" OR "health units" OR "health van" OR "health van" OR clinic*)) OR ((coordinat* OR co-locat* OR colocat* OR integrat*) W/3 ("health service" OR "health services" OR "health care" OR healthcare)) OR (patient-centered W/3 ("medical home" OR "medical homes")) OR pcmh OR (patient-aligned W/1 (care OR healthcare) W/1 team*) OR PACT OR PACTs)	896282
	2	TITLE-ABS-KEY(veteran*)	69228
	3	TITLE-ABS-KEY(homeless* or ill-housed or "no fixed address" or roofless* or “rough sleep” or “rough sleeping” or squatter* or ((street or transient*) W/3 (adolescent* or adult* or dweller* or individual* or man or men or people* or person* or population* or teen* or woman or women or youth*)) or ((inequalit* or insecurit* or instabilit* or lack or nonpermanent or non-permanent or precarious or temporary or supportive or unstable* or vulnerab*) W/2 (home* or hous* or accommodation* or apartment* or shelter* or hostel* or dwelling*)))	63849
	4	1 and 2 and 3	263
	5	TITLE-ABS-KEY(“Compensated Work Therapy” or CWT or “Domiciliary Care for Homeless Veterans” or DCHV or "Grants and Per Diem" or GPD or “Health Care for Reentry Veterans” or HCRV or “Health Care for Homeless Veterans” or HCHV or “Homeless Veteran Community Employment” or HVCES or “Homeless Veterans Dental Program” or “Stand Down” or “Stand Downs” or "Substance Use Disorder Treatment Enhancement Initiative" or “Supportive Services for Veteran Families” or SSVF or “Veterans Affairs Supportive Housing” or “VA Supportive Housing” or HUD-VASH or “Veteran Justice Outreach” or VJO)	11118
	6	1 and 5	50
	7	TITLE-ABS-KEY(HPACT or HPACTs or “Homeless Patient Aligned Care”)	25
	8	4 or 6 or 7	309
ClinicalTrials.gov	1	Condition/Disease: Homelessness and Other Terms: VA	
	2	Condition/Disease: Homelessness and Other Terms: veterans	
	3	Condition/Disease: Homelessness and Other Terms: PACT	
	4	Condition/Disease: Homelessness and Other Terms: HPACT	52
		Total	1,012
		Total after deduplication	**654**

APPENDIX B. STUDIES EXCLUDED DURING FULL-TEXT SCREENING

Citation and *Reason for Exclusion*
Bhalla IP, Stefanovics EA, Rosenheck RA. Social determinants of mental health care systems: intensive community based care in the Veterans Health Administration. *BMC Public Health.* 2020;20(1):1311. *Not comparison/outcome of interest.*
Blonigen D, Hyde J, McInnes DK, et al. Integrating data analytics, peer support, and whole health coaching to improve the health outcomes of homeless veterans: study protocol for an effectiveness-implementation trial. *Contemporary Clinical Trials. article (non-systematic), editorial, case report/case series, protocol, or other publication type not of interest.*
Blue-Howells J, McGuire J, Nakashima J. Co-location of health care services for homeless veterans: a case study of innovation in program implementation. *Social Work in Health Care.* 2008;47(3):219-31. *Review article (non-systematic), editorial, case report/case series, protocol, or other publication type not of interest.*
Chang ET, Zulman DM, Nelson KM, et al. Use of general primary care, specialized primary care, and other veterans affairs services among high-risk veterans. *JAMA Network Open.* 2020;3(6):E208120. *Duplicate.*
Chrystal JG, Glover DL, Young AS, et al. Experience of primary care among homeless individuals with mental health conditions. *PloS One.* 2015;10(2):e0117395. *Non-Veteran population.*
Chrystal JG, Glover DL, Young AS, et al. Experience of primary care among homeless individuals with mental health conditions. *PloS One.* 2015;10(2):e0117395. *Duplicate.*
Davis JA, Tsui I, Gelberg L, Gabrielian S, Lee ML, Chang ET. Risk factors for diabetic retinopathy among homeless veterans. *Psychological Services.* 2017;14(2):221-228. *Not comparison/outcome of interest.*
Etchin AG, LaCoursiere-Zucchero T, McDannold SE, McInnes DK. Dual use of Department of Veterans Affairs and community healthcare: homeless veterans' experiences, perspectives, and perceptions. *Journal of the American Association of Nurse Practitioners.* 2021;33(11):991-998. *Wrong study design.*
Gabrielian S, Hamilton AB, Alexandrino A, Hellemann G, Young AS. "They're homeless in a home": retaining homeless-experienced consumers in supported housing. *Psychological Services.* 2017;14(2):154-166. *Wrong study design.*
Gabrielian S, Jones AL, Hoge AE, et al. Enhancing primary care experiences for homeless patients with serious mental illness: results from a national survey. *Journal of Primary Care & Community Health*. 2021;12:2150132721993654. *Duplicate.*
Gabrielian S, Yuan AH, Andersen RM, Rubenstein LV, Gelberg L. VA health service utilization for homeless and low-income veterans: a spotlight on the VA Supportive Housing (VASH) program in greater Los Angeles. *Medical Care.* 2014;52(5):454-61. *Not comparison/outcome of interest.*
Gelberg L, Edwards ST, Hooker ER, et al. Integrating interprofessional trainees into a complex care program for veterans experiencing homelessness: effects on health services utilization. *Journal of General Internal Medicine.* 2021;36(12):3659-3664. *Not intervention of interest.*
Jones AL, Gordon AJ, Gabrielian SE, et al. Perceptions of care coordination among homeless veterans receiving medical care in the veterans health administration and community care settings results from a national survey. *Medical Care.* 2021;59(6):504-512. *Wrong setting.*
Jones AL, Hausmann LRM, Kertesz S, et al. Differences in experiences with care between homeless and nonhomeless patients in Veterans Affairs facilities with tailored and nontailored pimary care teams. *Medical Care.* 2018;56(7):610-618. *Duplicate.*
Jones AL, Hausmann LRM, Kertesz SG, et al. Providing positive primary care experiences for homeless veterans through tailored medical homes: the Veterans Health Administration's Homeless Patient Aligned Care Teams. *Medical Care.* 2019;57(4):270-278. *Duplicate.*
Kertesz SG, deRussy AJ, Kim Y-I, et al. Comparison of patient experience between primary care settings tailored for homeless clientele and mainstream care settings. *Medical Care.* 2021;59(6):495-503. *Duplicate.*

Citation and *Reason for Exclusion*
Kertesz SG, Holt CL, Steward JL, et al. Comparing homeless persons' care experiences in tailored versus nontailored primary care programs. *American Journal of Public Health.* 2013;103 Suppl 2:S331-9. *Duplicate.*
McGuire J, Gelberg L, Blue-Howells J, Rosenheck RA. Access to primary care for homeless veterans with serious mental illness or substance abuse: a follow-up evaluation of co-located primary care and homeless social services. *Administration and Policy in Mental Health*. 2009;36(4):255-64. *Not comparison/outcome of interest.*
McGuire J, Rosenheck R. The quality of preventive medical care for homeless veterans with mental illness. Journal for Healthcare Quality: Official Publication of the National Association for Healthcare Quality. 2005;27(6):26-32. *Not comparison/outcome of interest.*
Montgomery AE, Cusack M, Szymkowiak D, Fargo J, O'Toole T. Factors contributing to eviction from permanent supportive housing: lessons from HUD-VASH. *Evaluation and Program Planning.* 2017;61:55-63. *Not comparison/outcome of interest.*
O'Toole TP, Buckel L, Bourgault C, et al. Applying the chronic care model to homeless veterans: effect of a population approach to primary care on utilization and clinical outcomes. *American Journal of Public Health.* 2010;100(12):2493-9. *Duplicate.*
O'Toole TP, Buckel L, Bourgault C, et al. Applying the chronic care model to homeless veterans of a population approach to primary care on utilization and clinical outcomes. *American Journal of Public Health.* 2010;100(12):2493-2499. *Duplicate.*
O'Toole TP, Johnson EE, Borgia ML, Rose J. Tailoring outreach efforts to increase primary care use among homeless veterans: results of a randomized controlled trial. *Journal of General Internal Medicine.* 2015;30(7):886-98. *Not intervention of interest.*
O'Toole TP, Johnson EE, Redihan S, Borgia M, Rose J. Needing primary care but not getting it: the role of trust, stigma and organizational obstacles reported by homeless veterans. *Journal of Health Care for the Poor and Underserved.* 2015;26(3):1019-31. *Not comparison/outcome of interest.*
Simmons MM, Gabrielian S, Byrne T, et al. A Hybrid III stepped wedge cluster randomized trial testing an implementation strategy to facilitate the use of an evidence-based practice in VA Homeless Primary Care Treatment Programs. *Implementation Science*. 2017;12(1):46. *Review article (non-systematic), editorial, case report/case series, protocol, or other publication type not of interest.*
Swankoski KE, Reddy A, Grembowski D, Chang ET, Wong ES. Intensive care management for high-risk veterans in a patient-centered medical home – do some veterans benefit more than others? *Healthcare*. 2023;11(2)100677. *Not specific to individuals at risk of or experiencing homelessness.*
Temblique EKR, Foster K, Fujimoto J, Kopelson K, Borthwick KM, Capone-Newton P. A 1-Year review of a nationally led intervention to improve suicide prevention screening at a large homeless veterans clinic. *Federal Practitioner*. 2022;39(1):12-18. *No intervention of interest.*
Tsai J, Havlik J, Howell BA, Johnson E, Rosenthal D. Primary care for veterans experiencing homelessness: a narrative review of the Homeless Patient Aligned Care Team (HPACT) Model. *Journal of General Internal Medicine.* 2023;38(3):765-783. *Review article (non-systematic), editorial, case report/case series, protocol, or other publication type not of interest.*
Zulman DM, Chee CP, Ezeji-Okoye SC, et al. Effect of an intensive outpatient program to augment primary care for high-need veterans affairs patients a randomized clinical trial. Article. *JAMA Internal Medicine.* 2017;177(2):166-175. Not specific to individuals at risk of or experiencing homelessness.

Notes. Five excluded records were duplicates within this list.

APPENDIX C. RISK OF BIAS ASSESSMENTS

Author, Year, PMID, Design	Random sequence generation (selection bias)	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessor	Incomplete outcome data (attrition bias)	Selective Reporting (reporting bias)	Intention-to-treat analysis	Clear reporting with no discrepancies	Were eligibility criteria clear?	Were interventions adequately described?	Were the outcomes fully defined?	NRCS & Single: Representativeness of the cohort(s)	NRCS: Comparator representativeness	NRCS: Adjustment for confounders	Other bias	Overall RoB
Chang, 2020, 3259799, SG	NA	NA	NA	Unclear	Low	NA	NA	Yes	Yes	Yes	Yes	Low	NA	NA	High[a]	High[a]
Chinchilla,2019, 31297070, NRCS	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Low	Yes (low ROB)	Low[b]	Low	Low
Gabrielian, 2021, 33543675, NRCS	NA	NA	NA	High[c]	Low	NA	NA	Yes	Yes	Yes	Yes	Low	Yes (low ROB)	Low[b]	Low	Moderate
Gundlapalli, 2017, 28806373, NRCS	NA	NA	NA	Low	Low	NA	NA	No[d]	Yes	Yes	Yes	Low	No (high ROB)[e]	Low[b]	Low	High
Johnson, 2017, 28481601, NRCS	NA	NA	NA	Unclear	Low	Low	Low	Yes	Yes	Yes	Yes	Low	Yes (low ROB	High[f]	Low	Moderate
Jones, 2023, 35194740, SG	NA	NA	NA	Low	Unclear	NA	NA	Yes	Yes	Yes	Yes	Low	NA	NA	Lows	Low
Jones, 2018, 29412071, SG	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Low	NA	NA	Low	Low
Jones, 2023, 36810631, NRCS	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Unclear	Yes (low ROB)	Low[b]	Low	Low
Jones, 2017, 28481602, SG	NA	NA	NA	High [c]	Low	NA	NA	Yes	Yes	Yes	Yes	Low	NA	NA	High[a]	High[a]

Author, Year, PMID, Design	Random sequence generation (selection bias)	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessor	Incomplete outcome data (attrition bias)	Selective Reporting (reporting bias)	Intention-to-treat analysis	Clear reporting with no discrepancies	Were eligibility criteria clear?	Were interventions adequately described?	Were the outcomes fully defined?	NRCS & Single: Representativeness of the cohort(s)	NRCS: Comparator representativeness	NRCS: Adjustment for confounders	Other bias	Overall RoB
Jones, 2018, 29762272, NRCS	NA	NA	NA	High [c]	Low	NA	NA	Yes	Yes	Yes	Yes	Low	Yes (low ROB)	Low[b]	Low	Moderate
Jones, 2019, 30789541, NRCS	NA	NA	NA	High [c]	Low	NA	NA	Yes	Yes	Yes	Yes	Low	Yes (low ROB)	Low[b]	Low	Moderate
Kertesz, 2021, 33827104, NRCS	NA	NA	NA	High [c]	Low	NA	NA	Yes	Yes	Yes	Yes	Low	Yes (low ROB	Low[b]	Low	Moderate
Kertesz, 2013, 24148052, NRCS	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Low	Yes (low ROB	High[f]	Low	Moderate
O'Toole, 2010, 20966377, NRCS[g]	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Low	No (High)[h]	Low[b]	Low	Moderate
O'Toole, 2018, 29451116, NRCS	NA	NA	NA	High [c]	Low	NA	NA	Yes	Yes	Yes	Yes	Unclear	Yes (low ROB)	Low[b]	Low	Moderate
O'Toole, 2013, 24148042, SG	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Low	NA	NA	High[a]	High[a]
O'Toole, 2016, 27032987, SG	NA	NA	NA	Low	Low	NA	NA	Yes	Yes	Yes	Yes	Unclear	NA	NA	Low	Low

Author, Year, PMID, Design	Random sequence generation (selection bias)	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessor	Incomplete outcome data (attrition bias)	Selective Reporting (reporting bias)	Intention-to-treat analysis	Clear reporting with no discrepancies	Were eligibility criteria clear?	Were interventions adequately described?	Were the outcomes fully defined?	NRCS & Single: Representativeness of the cohort(s)	NRCS: Comparator representativeness	NRCS: Adjustment for confounders	Other bias	Overall RoB
Riggs, 2020, 32181829 NRCS	NA	NA	NA	Unclear	Unclear	NA	NA	Yes	Yes	Yes	Yes	Low	Unclear	Low[b]	Low	Moderate
Trivedi, 2018, 30151996, SG	NA	NA	NA	Low	Unclear	NA	NA	Yes	Yes	Yes	Yes	Low	NA	NA	High[a]	High[a]

Notes. [a]Single group, no baseline-follow up comparison; [b]Regression adjustment; [c]Self-reported outcomes and participants not blind to assessment; [d]Reported results of comparisons were not clear; [e]Comparison group data taken from a separate facility; [f]Crude analysis (unadjusted comparison between groups); [g]This study was evaluated as both a single group study and NRCS for different questions of interest; [h]Comparison group data was collected at a different time point, data did not surround any care engagement event, and there were baseline differences in mental health and substance use conditions, as well as health care utilization.

Abbreviations. NA=not applicable; NRCS=non-randomized comparative study; SG=single group study.

APPENDIX D. DESIGN DETAILS

Author Year PMID	Setting, Funding	Study Design,[a] Sample Source	Enrollment Dates	Inclusion Criteria	Exclusion Criteria	Supportive Program(s) Enrolled	Primary Care Program(s)
Chang, 2020, 32597993	Community, VA funded research	Single Group,[b] National	2015	Included all VHA patients assigned to primary care (general or specialized) as of September 30, 2015	Patients who had died during this period for the purpose of assigning a CAN (Care Assessment Needs) score.	Not specified	Primary Care (specialized homelessness)
Chinchilla, 2019, 31297070	Community, VA funded research and non-industry funding	NRCS, Medical Center	2014 to 2015	Participants enrolled in HUD-VASH who achieved housing within 1 year of program enrollment	Participants were excluded if they were enrolled in HUD-VASH program for more than 1 year; Participants data was excluded if they had duplicate or conflicting entries, and they did not have any report data on the primary outcomes of interest.	HUD-VASH	Primary Care (not specified)
Gabrielian, 2021, 33543675	Community, VA funded research	NRCS, National	2018	VA patients were eligible if they: (a) received ≥2 primary care visits at a study site; (b) had evidence of homelessness between May 2015 and November 2017 in VA's national electronic medical record and c) were assigned to a single primary care team. Survey respondents had to have at least 1 ICD-9/ICD-10 code for schizophrenia spectrum disorders, bipolar spectrum disorders, or other psychotic disorders in VA's national EMR between May 2015 and November 2017. Data were taken from a previously conducted survey (Riggs, 2020).	Participants were excluded if they had no available contact information or were deceased prior to the start of the survey	Not specified[c]	HPACT, mainstream primary care
Gundlapalli, 2017, 28806373	Community, VA funded research	NRCS, National	2012 to 2013	Veterans were required to have had at least 2 visits with their VHA medical center in the 6 months before enrollment in H-PACT and at least 1 visit in the	VHA sites that did not offer emergency department services were excluded to allow for comparability between comparator groups	Not specified[c,d]	HPACT, Usual care

Author Year PMID	Setting, Funding	Study Design,[a] Sample Source	Enrollment Dates	Inclusion Criteria	Exclusion Criteria	Supportive Program(s) Enrolled	Primary Care Program(s)
				6 months after enrollment; Veterans assigned a V60.0 ICD-9-CM code at least twice between January 1, 2012 and December 31, 2012 and verified to not have had an assignment with a PACT team at their site (for non-HPACT sites); Veterans assigned a V60.0 ICD-9-CM code at least twice between January 1, 2012 and December 31, 2012 and never having any evidence of enrollment in H-PACT or any other primary care team assignment (PACT) during the observation period.			
Johnson, 2017, 28481601	Community, VA funded research	NRCS, National	to 2017	Homeless veterans eligible for VA care (as confirmed by study protocol) who had not received any primary or longitudinal specialty care in the previous 6 months (by self-report and confirmed by review of VA records). Inclusion criteria from parent RCT:[e] The study population was currently homeless Veterans[f] eligible to receive VA services who were cognitively intact as measured by the Short Blessed test. Veterans currently receiving primary/continuity care for a chronic medical condition from a VA-based or non-VA-based provider (defined by any visit to an ambulatory care clinic in the previous 6 months and/or having a self-identified	Participants not planning to stay in the area for the 6 months study period, those whose housing status could not be ascertained, and those with significant cognitive impairment as measured by the Short Blessed Test. Exclusions criteria from parent study:[f] Veterans currently receiving primary/continuity care for a chronic medical condition from a VA-based or non-VA-based provider were excluded.	Not specified[f]	Primary care (not specified)

Author Year PMID	Setting, Funding	Study Design,[a] Sample Source	Enrollment Dates	Inclusion Criteria	Exclusion Criteria	Supportive Program(s) Enrolled	Primary Care Program(s)
				ambulatory care-based source for usual care) were excluded.			
Jones, 2017, 28481602	Community, VA funded research	Single Group,[b] National	2013	Data were taken from the Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP). Parent survey inclusion criteria: Veterans who received VHA outpatient services in the index month, had a primary care visit with an assigned PACT provider during the 10 months prior to index month, and did not participate in the prior year's survey. Inclusion for study: in year prior to the survey, they experienced One inpatient or two outpatient visits with and ICD-9 diagnosis for common MHSUDs.	Patients with missing data on variables of interest.	Not specified[c]	PACT
Jones, 2018, 29412071	Outpatient, VA funded research	Single Group,[g] Medical Center	2012 to 2013	Patients who had an initial clinic visit to the Veterans Affairs Pittsburgh Healthcare System (VAHPS) HPACT	NR	Not specified	HPACT
Jones, 2018, 29762272	Outpatient, VA funded research	NRCS, Other	2014 to 2015	Data were taken from the Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP). Parent survey inclusion criteria: Veterans outpatients who (1) had an outpatient visit with the lead provider of their primary care team in the past 10 months, and (2) did not participate in the prior year's survey.	Patients missing data on study variables	Not specified[c]	HPACT, Non-HPACT

Author Year PMID	Setting, Funding	Study Design,[a] Sample Source	Enrollment Dates	Inclusion Criteria	Exclusion Criteria	Supportive Program(s) Enrolled	Primary Care Program(s)
				Inclusion for study: Eligible veterans who visited a primary care provider at one of 510 VHA medical centers or CBOCs			
Jones, 2019, 30789541	Community, VA funded research	NRCS, National	2014 to 2015	Data were taken from the Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP). Parent survey inclusion criteria: Patients who received VHA outpatient services, had a primary care visit with the lead provider of their assigned primary care team lead in past 10 months, and did not participate in the prior year's survey. Inclusion for study: Had recent administrative evidence of homelessness.[c]	Veterans with missing data on study variables, patients assigned to H-PACT for only part of the year prior to survey, patients with H-PACT enrollment data who primarily received care at VHA facilities without any H-PACT.	Not Provided[c]	HPACT, standard primary care
Jones, 2023, 35194740	Outpatient, VA funded research	Single Group,[g] Medical Center	2018 to 2021	Veterans enrolled in the Vulnerable Veteran Innovative Patient-Aligned Care Team (VIP) Initiative at VA Salt Lake City Health Care System	NR	Not specified[c]	Integrated primary care (IPC)
Jones, 2023, 36810631	Outpatient, VA funded research	NRCS, VISN	2016 to 2019	Patients with positive depression screen and were formally diagnosed with a depressive disorder or prescribed an antidepressant in the 12 months following their positive screen.	Patients receiving depression treatment during the 6 months prior to screening.	Not specified	HPACT, other PACT
Kertesz, 2013, 24148052	Outpatient, VA funded research	NRCS, Medical Center	2011 to March 2012	Presumptive past or current homelessness and receipt of primary care at the site of care 2 or more times in the past 2 years.	NR	Not specified	VA homeless-tailored primary care program, non-tailored primary care

Author Year PMID	Setting, Funding	Study Design,[a] Sample Source	Enrollment Dates	Inclusion Criteria	Exclusion Criteria	Supportive Program(s) Enrolled	Primary Care Program(s)
Kertesz, 2021, 33827104	Community, VA funded research	NRCS, National	2015 to 2017	Evidence of homelessness and had 2 or more primary care visits in 24 months at the same site, assigned to a single mainstream PACT or H-PACT	Excluded homeless-experienced veterans (HEV) if their mainstream PACT care was located at an outlying clinic, remote from the Veterans Affairs Medical Centers that housed the HPACT	Not specified[c]	Mainstream PACT, H-PACT
O'Toole, 2010, 20966377	Outpatient, VA funded research	NRCS, Medical Center	2006 to 2008	Homeless patients who voluntarily enrolled in the Homeless-Oriented Primary Care Clinic at the Providence VA Medical Center or seasonally matched controls from the general internal medicine clinics identified from historic patient registry data	Excluded potential control participants if there was positive documentation that the patient was living in an apartment or house that the patient owned or paid rent for; Or if the patient moved out of the are or was institutionalized during a significant period of the 12-month study period	Not specified[f]	Homeless-Oriented Primary Care Clinic, General internal medicine clinics
O'Toole, 2013, 24148042	Outpatient, VA funded research	Single Group,[b] Medical Center	2008 to 2011	Newly enrolled HPACT patients who had at least 2 visits with their primary care team within the first 6 months of enrollment. HPACT requirements were: Current homelessness, including unsheltered, emergency sheltered, in transitional housing, or doubled-up with family or a friend, and having difficulty accessing care in a traditional clinic setting.	Individuals were excluded if they moved out of the area, were institutionalized, or were incarcerated during the study. Individuals already established in primary care, either within the VA medical center or at another facility, who then became homeless and transferred their care to the homeless PACT clinic were also excluded.	Not specified	HPACT
O'Toole, 2016, 27032987	Outpatient, VA funded research	Single Group,[g] National	2013 to2014	Homeless veterans enrolled in HPACT as of August 1, 2014	NR	HUD-VASH Grants and Per Diem (GPD) Veteran Justice Outreach (VJO) Health Care to Homeless Veterans,	HPACT

Author Year PMID	Setting, Funding	Study Design,[a] Sample Source	Enrollment Dates	Inclusion Criteria	Exclusion Criteria	Supportive Program(s) Enrolled	Primary Care Program(s)
						Veterans courts, and vocational assistance programs	
O'Toole, 2018, 29451116	Outpatient, VA funded research	NRCS, Medical Center	2012 to 2014	Homeless (to include: the unsheltered and those in emergency shelters, transitional housing, or unstable housing with family or friends) veterans enrolled in either PACT or HPACT at the selected study sites	Veterans that have moved into Section 8 housing or HUD-VASH housing units; Veterans enrolled in intensive case management programs	Not specified[f]	PACT, HPACT
Riggs, 2020, 32181829	Community, VA funded research	NRCS, National	2018	Eligible veterans were those who had evidence of having experienced homelessness in the preceding 30 months, used the VA's primary care services at 1 of 26 VA medical centers with HPACT available, including a single active panel assignment and 2 or more visits to a clinic with an administrative code indicating primary care at the same study site in the preceding 24 months.	Participants who had no contact information from VA or other records or had died prior to survey initiation.	Not specified[c]	HPACT, Mainstream Primary Care
Trivedi, 2018, 30151996	Community, VA funded research	Single Group,[h] Other	2013	HPACT enrollees with 12 months of Medicare Fee-for-Service Coverage in 2013	HPACT enrollees not enrolled in Medicare for 12 months in 2013; HPACT enrollees who had one or more months of Medicare Advantage enrollment	No Specified	HPACT

Notes. [a]Design listed is based on it use in this review; [b]Includes only those experiencing homelessness; [c]Peterson R, Gundlapalli AV, Metraux S, et al. Identifying homelessness among veterans using VA administrative data: opportunities to expand detection criteria. PloS One. 2015;10(7):e0132664; [d]US Department of Veterans Affairs Office of Inspector General VA Office of Inspector General. Homeless Incidence and Risk Factors for Becoming Homeless in Veterans. Washington, DC: VA Office of Inspector General; 2012. Available at: https://www.va.gov/oig/pubs/VAOIG-11-03428-173.pdf; [e]O'Toole TP, Johnson EE, Borgia ML, Rose J. Tailoring Outreach Efforts to Increase Primary Care Use Among Homeless Veterans: Results of a Randomized Controlled Trial. *J Gen Intern Med*. 2015;30(7):886-898. doi:10.1007/s11606-015-3193-x; [f]Defined by the Stewart B. McKinney-Vento Homeless Assistance Act; [g]Includes baseline and follow-up data; [h]High reliance group only.

Abbreviations. CBOs=community based organizations; HPACT=homeless patient aligned care teams; HUD-VASH=Housing and Urban Development-Veterans Affairs Supportive Housing; ICD=international classification of disease; MHSUDs=mental health and substance use disorders; NR=not reported; NRCS=non-randomized comparative study; PACT=patient aligned care teams; RCT=randomized controlled trial; VHA=Veterans Health Administration.

APPENDIX E. BASELINE CHARACTERISTICS

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
Chang, 2020, 32597993[a]	2775	White: NR Hispanic: NR Black: NR Other: NR	NR	NR	Mental health: NR Substance use: NR Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Chinchilla, 2019, 31297070	560	White: 205 (38.2) Hispanic: 91 (16.6) Black: 307 (57.2) Other: NR	52.9 (12.9)	524 (93.6)	Mental health: 85 (15.2) Substance use: 35 (6.3) Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Gabrielian, 2021, 33543675	969	Non-Hispanic white: 365 (37.7) Hispanic, any race: 119 (12.3) Non-Hispanic black: 322 (33.2) Other: 163 (16.8)	18-54: 291 (30.0) 55-64: 516 (53.2) ≥65: 162 (16.7)	820 (84.6)	*Mental health* Schizophrenia spectrum disorders: 364 (37.6) Bipolar spectrum disorders: 543 (56.0) Other psychotic disorders: 308 (31.8) *Substance use* Alcohol problem: 298 (30.8) Drug problem: 192 (19.8) *Other* Dementia: NR Diabetes: 237 (24.6) Hypertension: 496 (51.4) Hyperlipidemia: NR	NR	NR
Gundlapalli, 2017, 28806373[b]	51886	White: 21020 (40.5) Hispanic: NR Black: 26754 (51.6) Other: 4090 (7.8)	53.0 (11.2)	47327 (91.2)	Mental health: NR Substance use: NR Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	3081 (5.9)	NR

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
Johnson, 2017, 28481601	142	White: 88 (62.0) Hispanic: NR Black: NR Other: NR	48.4 (11.1)	134 (94.4)	*Mental health* Depression 79 (55.6) Anxiety 66 (46.5) PTSD 44 (31.0) *Substance use* Alcohol 96 (67.6) Marijuana 47 (33.1) Cocaine 19 (13.4) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Jones, 2017, 28481602[a,c]	4605	White: (47.15) Hispanic: (8.37) Black: (38.17) Other: (6.31)	18-44= 23.09 45-54= 33.60 55-64= 34.83 65+= 8.47	(87.3)	*Mental health* Depressive disorders (62.71) Post-traumatic stress disorder (30.68) Other anxiety disorders (25.08) Bipolar disorder (17.38) Psychotic disorders (11.87) *Substance use* Alcohol use disorder (36.73) Drug use disorder (36.51) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Jones, 2018, 29412071	179	White: 100 (56.0) Hispanic: 7 (4.0) Black: 72 (40.0) Other: NR	NR	167 (93.0)	Mental health: 74 (41.0) *Substance use treatment* Tobacco: 73 (41.0) Alcohol: 46 (26.0) Opioid: 29 (16.0)	NR	NR

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
					Cocaine: 16 (9.0) Cannabis: 13 (7.0) Polysubstance: 5 (3.0) Sedative/Hypnotic: 3 (2.0) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR		
Jones, 2018, 29762272[a,b]	12170	White: 5600 (46.0) Hispanic: 1011 (8.3) Black: 4761 (39.1) Other: 806 (6.6)	N (%): 18-4: 2636 (21.7) 45-54: 3121 (25.7) 55-64: 4412 (36.3) 65+: 1997 (16.3)	10749 (88.3)	*Mental health* Mood Disorder: 5906 (48.5) Posttraumatic Stress Disorder: 3054 (25.1) Other Anxiety Disorders: 2287 (18.8) Psychotic Disorder: 1043 (8.5) *Substance use* Alcohol Use Disorder: 3275 (26.9) Drug Use Disorder: 3106 (25.5) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Jones, 2019, 30789541[b,c]	11857	White: 5483 (46.2) Hispanic: NR Black: 4611 (38.8) Other: 1758 (14.8)	18-44: 2636 (22.2) 45-54: 3020 (24.4) 55-64: 4279 (36.1) 65+: 1968 (16.4)	10466 (88.3)	*Mental health* Mood disorder: 5746 (48.2) Post-traumatic stress disorder: 2984 (25.0) Other anxiety disorders: 2235 (18.5) Psychotic disorder: 1010 (8.3) *Substance use* Alcohol use disorder: 3163 (26.7) Drug use disorder: 2992 (25.2)	NR	NR

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
					Other Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR		
Jones, 2023, 35194740[a]	123	White: 96 (78.7) Hispanic: 8 (6.6) Black: 12 (9.8) Other: 6 (4.9)	25–44= 42 (34.2) 45–64= 57 (46.3) 65+= 24 (19.5)	114 (92.7)	*Mental health* Depression: 81 (66.9) PTSD: 57 (46.3) Anxiety 50 (40.7) Serious Mental Illness 20 (16.3) Other 32 (26) Any of the above 119 (96.8) *Substance use* Alcohol Use Disorder: 53 (43.1) Opioid Use Disorder: 40 (32.5) Stimulant Use Disorder: 50 (40.7) Cannabis Use Disorder: 31 (35.2) Other Drug Use Disorder: 16 (13) Any of the above: 90 (74.8) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	50-100% service connected: 44(35.8) <50% service connected: 28 (22.8) no service connection: 51(41.5)
Jones, 2023, 36810631	2843	White: 1189 (41.8) Hispanic: 537 (18.9) Black: 743 (26.1) Other: 159 (17.9)	49.1 (15.2)	2509 (88.3)	*Mental health* Anxiety disorder 1207 (42.5%) Post-traumatic stress disorder 1371 (48.2%) Bipolar, schizophrenia, or other psychotic disorders 253 (8.9%) *Substance use* Drug Use: 454 (16.0) Alcohol Use: 643 (22.6) *Other*	NR	NR

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
					Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR		
Kertesz, 2013, 24148052[b,d]	406	White: 107 (26.4) Hispanic: 9 (2.2) Black: 271 (66.7) Other: 27 (6.7%)	53.5 (7.6)	379 (93.4)	Mental health: NR Substance use: NR Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Kertesz, 2021, 33827104	5766	White: 2367 (41.1) Hispanic: 602 (10.7) Black: 2252 (39.1) Other: 1147 (19.9)	58.7 (10.9)	5158 (90.7)	*Mental health* Presence of severe psychological distress, last 2 weeks: 1724 (32.6) Receipt of psychiatric medication in the last 30 days: 1961(34.7) *Substance use* Drug Problem: 782 (13.8) Alcohol problem: 1624 (28.7) Personal overdose experience in last 3 years: 379 (6.7) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR		
O'Toole, 2010, 20966377[b]	177	White: 143 (80.8) Hispanic: Black: Other:	52.4 (4.3)	169 (95.4)	*Mental health* Depression: 98 (55.4) Anxiety: 59 (33.3) Bipolar: 34 (19.2) Schizophrenia: 13 (7.3) *Substance use* Alcohol: 114 (64.4) Cocaine: 51 (28.8) Heroin: 14 (7.9) Marijuana: 23 (12.9)	NR	NR

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
					Other Dementia: NR Diabetes: 21 (11.8) Hypertension: 78 (44.1) Hyperlipidemia: 75 (42.4)		
O'Toole, 2013, 24148042[a, b]	127	White: 97 (76.4) Hispanic: NR Black: NR Other: NR	51.2 (NR)	120 (94.5)	Mental health: 75 (59.1) Substance use: 32 (25.4)[e] Dementia: NR Diabetes: 12 (9.4) Hypertension: 36 (28.3) Hyperlipidemia: NR	NR	NR
O'Toole, 2016, 27032987[f]	14088	White: NR Hispanic: NR Black: NR Other: NR	53.4 (NR)	13524 (95.9)	Mental health: NR Substance use: NR Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
O'Toole, 2018, 29451116	266	White: 120 (45.1) Hispanic: NR Black: NR Other: NR	52.1 (9.2)	251(94.4)	*Mental health*[h] Any mental health condition: 207 (78.1) Depression: 180 (69.2) Anxiety: 165 (63.2) PTSD: 125 (50.8) Bipolar: 47 (19.2) *Substance use*[h] Any drinking past six months: 162 (61.1) Cocaine use in past six months: 60 (22.6) Heroin or nonprescribed opiate use in past six months: 24 (9.0) *Other* Dementia: NR Diabetes: NR Hypertension: 87 (33.1) Hyperlipidemia: NR	NR	NR

Author Year PMID, Study Design	Number	Race/Ethnicity, %	Age (Years); Mean (SD)	Male, %	Comorbidities, %	Served in Combat	Priority Status
Riggs, 2020, 32181829[b]	5694	White: 2345 (40.7) Black: 2225 (38.1) Hispanic: 593 (10.4)	56.4 (18.3)	5100 (91.6)	*Mental health* Receiving medication for mental health: 1947 (34.2) *Substance use* Alcohol problem: 1617 (28.4) Drug problem: 775 (13.6) *Other* Dementia: NR Diabetes: NR Hypertension: NR Hyperlipidemia: NR	NR	NR
Trivedi, 2018, 30151996[b,g]	1211	White: 618 (51) Hispanic: NR Black: 569 (47) Other: 24(2)	59.5 (9.7)	1175 (97)	*Mental health* Psychosis/Schizophrenia: 193 (16.0%) Depression: 109 (9.0%) *Substance use* Substance Abuse Disorder: 169 (14.0%) Alcohol Disorder: 205 (17.0%) *Other* Dementia: NR Diabetes: 96 (8.0) Hypertension: 230 (19.0) Hyperlipidemia: NR	NR	Group 1: 217 (18.0) Group 2: 48 (4.0) Group 3: 121 (10.0) Group 4: 24 (2.0) Group 5: 775 (64.0) Group 6,7,8: 24 (2.0)

Notes. [a]Only includes those experiencing homelessness; [b]Includes estimates calculated by research team based on data provided in the study; [c]Estimates use survey weights; [d]Does not include tailored non-VA care group; [e]Active substance abuse; [f]The demographic data reported in this study were for the August 2014 enrollment of patients, which corresponds with the ambulatory care use outcomes of this study. Demographic details of patients included in the pre-enrollment and post-enrollment acute care use data were not reported. All numbers calculated by the research team from percents provided in the study; [g]Only include high reliance group; [h]Some numbers or percents do not add up to 100%/266 due to missing data.

Abbreviations. NR=not reported; SD=standard deviation.

APPENDIX F. COMPARISONS AND HOMELESS IDENTIFICATION

Author Year PMID, Study Design	Data Source	Primary Care	Comparisons	Homelessness Identification
Chang, 2020, 32597993, Single Group	Electronic medical record data as of 2015	Homeless specialized primary care	None[a]	Those receiving homeless specialized primary care (not specified)
Chinchilla, 2019, 31297070, NRCS	Homeless Operations Management and Evaluation System (HOMES) data from 10/1/14 to 9/30/15	Primary care (Unspecified)	Primary care access, Yes vs No	Not specified (appeared to be based HUD-VASH enrollment)
Gabrielian, 2021, 33543675, NRCS	Data were part of the Primary Care Homeless Services Tailoring study	HPACT, Mainstream PACT	HPACT vs mainstream	Evidence of homelessness between May 2015 and November 2017 (ICD-9/ICD-10 diagnoses of homelessness or VA-specific indicators of receipt of homeless services)[b]
Gundlapalli, 2017, 28806373, NRCS	Medical records from January 2012 and June 2013	HPACT, Non-enrolled at HPACT site, Usual Care at non-HPACT site	Before vs after enrollment (HPACT); first 6 months vs second 6 months (other care) HPACT vs. Those at HPACT sites not enrolled in HPACT vs. Those in usual care sites without HPACT	identified using a combination of administrative codes indicating homelessness (ICD-9-CM code V60.0, lack of housing)[b,c,d]
Johnson, 2017, 28481601, NRCS	Post hoc analysis of a prospective, community-based randomized controlled trial of homeless veterans not receiving any ongoing primary or continuity care	Primary care (Unspecified)	Accessed primary care within 1 month of study enrollment vs not	Homeless veterans eligible for VA care (as confirmed by study protocol)[e,c,d]
Jones, 2017, 28481602, Single Group	2013 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)	PACT (homeless not specified)	None[a]	Past-year ICD-9 codes in VHA administrative records one inpatient or outpatient visit where lack of housing (V60.0), unstable housing (V60.1), or other housing circumstances (V60.89, V60.9) were documented. [b]
Jones, 2018, 29412071, Single Group	Electronic medical records from May 2012 to December 2013.	HPACT	Before vs. After HPACT enrollment	Not specified (though all participants enrolled in HPACT)
Jones,	2014–2015 Patient-Centered	HPACT, Non-HPACT facilities	Receiving primary care at HPACT vs Non-HPACT Facilities	One inpatient or outpatient visit where lack of housing, unstable housing, or other housing circumstances were documented (ICD-9 codes V60.0, V60.1, V60.89,

Author Year PMID, Study Design	Data Source	Primary Care	Comparisons	Homelessness Identification
2018, 29762272, NRCS	Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)			V60.9), or they received VHA homeless services in the year before the PCMH-SHEP [b]
Jones, 2019, 30789541, NRCS	2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients (PCMH-SHEP)	HPACT, Standard primary care with H-PACT Available, PACT	HPACT vs. Standard PC with H-PACT Available vs. PACT	One inpatient or outpatient visit where lack of housing, unstable housing, or other housing circumstances were documented (ICD-9 codes V60.0, V60.1, V60.89, V60.9), or they received VHA homeless services in the year prior to the survey. [b]
Jones, 2023, 35194740, Single Group	Electronic medical records March 1, 2018, and September 30, 2019	Integrated Primary Care (IPC)	Before vs. After IPC enrollment	Homelessness was determined from international classification of disease (ICD) codes related to unstable housing and VA homeless service records. [b]
Jones, 2023, 36810631, NRCS	VA administrative and patient health records from 2016 to 2019.	HPACT, PACT	HPACT vs PACT	Homelessness was designated from international classification of disease (ICD) codes and/or use of VA homeless services in the study year (details not specified)
Kertesz, 2013, 24148052, NRCS	Face-to-face survey from January 2011 through March 2012	Homeless tailored primary care, Mainstream care	Tailored vs. Mainstream	Presumptive past or current homelessness was based on an International Classification of Diseases-9-CM code of V60.0 diagnosis.
Kertesz, 2021, 33827104, NRCS	National patient survey of 26 HPACT sites, dates of survey not specified.	HPACT, Mainstream PACT	HPACT vs. Mainstream PACT	Diagnosis of homelessness (V60.0, V60.1, V60.89 from ICD-9, and Z59.0, Z59.1, Z59.8, Z59.9 from ICD-10) or receipt of VA homeless services (VA administrative stop codes 504, 507, 508, 511, 522, 528-530, 555-556, 590, or 37between May 2015-November 2017. [b]
O'Toole, 2010, 20966377, NRCS	Medical records from 2006-2007 (or 2004–2006 for comparison group)	Homeless Oriented Primary Care (HOPC), General Internal Medicine Clinic care (GIM) (Historic control)	HOPC vs. GIM	For Homeless Orientated Primary Care group: Sheltering criteria of the Stewart B. McKinney Homeless Assistance Act.[d] Sheltering categories: no shelter; emergency shelter in a ''dusk-to-dawn'' shelter; transitional and supportive housing; and doubling up. For comparison group: According to the V.60 codes of the International Classification of Diseases, Ninth Revision (ICD-9)
O'Toole, 2013, 24148042 Single Group	Medical and administrative records from 2008 to 2011	HPACT	None[a]	For HPACT: Current homelessness, including unsheltered, emergency sheltered, in transitional housing, or doubled-up with family or a friend
O'Toole, 2016, 27032987 Single Group	Medical and administrative records to 2014	HPACT	Before vs. After HPACT enrollment	Not specified (though all participants enrolled in HPACT)

Author Year PMID, Study Design	Data Source	Primary Care	Comparisons	Homelessness Identification
O'Toole, 2018, 29451116, NRCS	Medical and administrative records and prospective survey from 2012 to 2014	HPACT, PACT	HPACT vs PACT	Homelessness was defined according to criteria of the McKinney–Vento Act[d] following a sheltering typology that includes unsheltered, staying in an emergency shelter, or staying in transitional housing. We also included veterans in unstable (nonpermanent) doubled-up arrangements with family or friends.
Riggs, 2020, 32181829	Medical and administrative records and prospective survey	HPACT, Mainstream Primary Care	HPACT vs Mainstream Primary Care	Homelessness defined at least 1 ICD-9 or ICD-10 diagnosis of homelessness or VA-specific administrative indicators of receipt of VA homeless services in the preceding 30 months.[b]
Trivedi, 2018, 30151996 Single Group	Registry of all Veterans enrolled in HPACT as of January 1, 2013	HPACT	None[a]	Not specified (though all participants enrolled in HPACT)

Notes. [a]Only includes those from the homeless group; [b]Peterson R, Gundlapalli AV, Metraux S, et al. Identifying homelessness among veterans using VA administrative data: opportunities to expand detection criteria. PloS One. 2015;10(7):e0132664; [c]US Department of Veterans Affairs Office of Inspector General VA Office of Inspector General. Homeless Incidence and Risk Factors for Becoming Homeless in Veterans. Washington, DC: VA Office of Inspector General; 2012. Available at: https://www.va.gov/oig/pubs/VAOIG-11-03428-173.pdf; [d]Defined by the Stewart B. McKinney-Vento Homeless Assistance Act; [e]O'Toole TP, Johnson EE, Borgia ML, Rose J. Tailoring Outreach Efforts to Increase Primary Care Use Among Homeless Veterans: Results of a Randomized Controlled Trial. *J Gen Intern Med*. 2015;30(7):886-898. doi:10.1007/s11606-015-3193-x.

Abbreviations. HPACT=homeless patient aligned care teams; HUD-VASH=Housing and Urban Development-Veterans Affairs Supportive Housing; ICD=international classification of disease; NRCS=non-randomized comparative study; PACT=patient aligned care teams.

APPENDIX G. CATEGORICAL OUTCOMES

G1. Primary Care

Author, Year, PMID	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
Jones, 2018, 29412071	Percentages of patients with any health care visit before and after HPACT- Primary Care Visits	HPACT	7-12 months before enrollment	49/179 (27)	aOR (95% CI): 0–6 months after HPACT enrollment vs 0-6 months before = 4.91 (2.94, 8.20) 7–12 months after HPACT enrollment vs 0-6 months before = 2.30 (1.42, 3.72)
			0-6 months before enrollment	70/179 (39)	
			0-6 months after enrollment	124/179 (69)	
			7-12 months after enrollment	99/179 (55)	

Abbreviations. aOR=adjusted odds ratio; CI=confidence interval; HPACT=homeless patient aligned care teams; N=number.

G2. Emergency Department

Author, Year, PMID	Outcome Definition	Sample/Groups, Comparisons	Timepoint	n/N (%)	Effect size, p-value
Jones, 2018, 29412071	Percentages of patients with any health care visit before and after HPACT- Any emergency department visit	HPACT	7-12 months before enrollment	40/179 (22)	aOR (95% CI) 0–6 months after HPACT enrollment vs 0-6 months before = 0.57 (0.34, 0.94) 7–12 months after HPACT enrollment vs 0-6 months before = 0.55 (0.33, 0.91)
			0-6 months before enrollment	77/179 (43)	
			0-6 months after enrollment	60/179 (34	
			7-12 months after enrollment	59/179 (33)	
Gundlapalli, 2017	Emergent emergency department care needed: Not preventable/Avoidable, % of total visits	HPACT Enrolled	6 months before enrollment	nr/NR (8.7)	NR, p=0.01
			6 months after enrollment	nr/NR (10)	
		HPACT Site Nonenrolled	First 6 months of data	nr/NR (5.6)	NR, p=0.39
			Second 6 months of data	nr/NR (5.8)	
		Usual Care Site	First 6 months of data	nr/NR (8.4)	NR, p=0.01
			Second 6 months of data	nr/NR (9.1)	
Gundlapalli, 2017	Emergent emergency department care needed: Preventable/Avoidable, % of total visits	HPACT Enrolled	6 months before enrollment	nr/NR (5.1)	NR, p=0.53
			6 months after enrollment	nr/NR (5.3)	

Author, Year, PMID	Outcome Definition	Sample/Groups, Comparisons	Timepoint	n/N (%)	Effect size, p-value
		HPACT Site Nonenrolled	First 6 months of data	nr/NR (3.7)	NR, p=0.16
			Second 6 months of data	nr/NR (3.9)	
		Usual Care Site	First 6 months of data	nr/NR (4.1)	NR, p=0.75
			Second 6 months of data	nr/NR (4)	
Gundlapalli, 2017	Emergent/Primary care treatable, % of total visits	HPACT Enrolled	6 months before enrollment	nr/NR (12.9)	NR, p=0.92
			6 months after enrollment	nr/NR (12.8)	
		HPACT Site Nonenrolled	First 6 months of data	nr/NR (12)	NR, p=0.002
			Second 6 months of data	nr/NR (12.9)	
		Usual Care Site	First 6 months of data	nr/NR (13.4)	NR, p=0.04
			Second 6 months of data	nr/NR (14.1)	
Gundlapalli, 2017	Nonemergent, % of total visits	HPACT Enrolled	6 months before enrollment	nr/NR (22.3)	NR, p=0.004
			6 months after enrollment	nr/NR (24.4)	
		HPACT Site Nonenrolled	First 6 months of data	nr/NR (24)	NR, p<0.001
			Second 6 months of data	nr/NR (25.9)	
		Usual Care Site	First 6 months of data	nr/NR (26.5)	NR, p=1.00
			Second 6 months of data	nr/NR (26.5)	
Gundlapalli, 2017	Unclassified, % of total visits	HPACT Enrolled	6 months before enrollment	nr/NR (51.1)	NR, p<0.001
			6 months after enrollment	nr/NR (47.5)	
		HPACT Site Nonenrolled	First 6 months of data	nr/NR (54.8)	NR, p<0.001
			Second 6 months of data	nr/NR (51.6)	
		Usual Care Site	First 6 months of data	nr/NR (47.7)	NR, p=0.01
			Second 6 months of data	nr/NR (46.3)	
Gundlapalli, 2017	Emergent emergency department care needed: Not preventable/Avoidable, % of total visits	HPACT Enrolled, High Utilizers	6 months before enrollment	nr/NR (9)	NR, p=0.91
			6 months after enrollment	nr/NR (8.9)	
		HPACT Site Nonenrolled, High utilizers	First 6 months of data	nr/NR (5)	NR, p=0.60
			Second 6 months of data	nr/NR (5.5)	

Author, Year, PMID	Outcome Definition	Sample/Groups, Comparisons	Timepoint	n/N (%)	Effect size, p-value
		Usual Care Site, High utilizers	First 6 months of data	nr/NR (8.5)	NR, p=0.03
			Second 6 months of data	nr/NR (9.5)	
Gundlapalli, 2017	Emergent emergency department care needed: Preventable/Avoidable, % of total visits	HPACT Enrolled, High Utilizers	6 months before enrollment	nr/NR (6.2)	NR, p=0.56
			6 months after enrollment	nr/NR (5.8)	
		HPACT Site Nonenrolled, High utilizers	First 6 months of data	nr/NR (4.2)	NR, p=0.72
			Second 6 months of data	nr/NR (3.9)	
		Usual Care Site, High ED utilizers	First 6 months of data	nr/NR (4.7)	NR, p=0.21
			Second 6 months of data	nr/NR (5.2)	
Gundlapalli, 2017	Emergent/Primary care treatable, % of total visits	HPACT Enrolled, High Utilizers	6 months before enrollment	nr/NR (12.5)	NR, p=0.10
			6 months after enrollment	nr/NR (11.2)	
		HPACT Site Nonenrolled, High utilizers	First 6 months of data	nr/NR (10)	NR, p=0.53
			Second 6 months of data	nr/NR (10.8)	
		Usual Care Site, High utilizers	First 6 months of data	nr/NR (13.7)	NR, p=0.07
			Second 6 months of data	nr/NR (14.8)	
Gundlapalli, 2017	Nonemergent, % of total visits	HPACT Enrolled, High Utilizers	6 months before enrollment	nr/NR (20.6)	NR, p<0.001
			6 months after enrollment	nr/NR (24.4)	
		HPACT Site Nonenrolled, High utilizers	First 6 months of data	nr/NR (21.2)	NR, p=0.80
			Second 6 months of data	nr/NR (21.6)	
		Usual Care Site, High utilizers	First 6 months of data	nr/NR (26.8)	NR, p=0.48
			Second 6 months of data	nr/NR (26.3)	
Gundlapalli, 2017	Unclassified, % of total visits	HPACT Enrolled, High Utilizers	6 months before enrollment	nr/NR (51.7)	NR, p=0.13
			6 months after enrollment	nr/NR (49.8)	
			First 6 months of data	nr/NR (59.6)	NR, p=0.46

Author, Year, PMID	Outcome Definition	Sample/Groups, Comparisons	Timepoint	n/N (%)	Effect size, p-value
		HPACT Site Nonenrolled, High utilizers	Second 6 months of data	nr/NR (58.3)	
		Usual Care Site, High utilizers	First 6 months of data	nr/NR (46.3)	NR, p=0.02
			Second 6 months of data	nr/NR (44.2)	
Jones, 2023, 35194740	Emergency Department- Utilization Before and After Integrated Primary Care Enrollment	Integrated Primary Care	Pre-enrollment slope (rate of utilization in 4 quarters prior to enrollment)	nr/NR	IRR (SE) 1.49 (0.14), p <0.001
		Integrated Primary Care	Level change (change in Q1 after enrollment vs Q prior to enrollment)	nr/NR	IRR (SE) 0.69 (0.18), p= 0.16
		Integrated Primary Care	Post-enrollment slope (rate in utilization in the 4 quarters after enrollment)	nr/NR	IRR (SE) 1.03 (0.04), p= 0.55
		Integrated Primary Care	Trend change (%) (% change in post-enrollment slope vs pre-enrollment slope)	nr/NR	-31%, p <0.001
O'Toole, 2010, 20966377	Access emergency department	HOPC	First 6 months	44[a]/79 (55.3)	HOPC, pre vs post, p <0.01 GIM, pre vs post, p= 0.53 HOPC vs GIM (Second 6 months) OR (95% CI)= 0.84 (0.46, 1.55)[a] p= 0.57
			Second 6 months	29 [a]/79 (36.8)	
		GIM	First 6 months	43 [a]/98 (44.2)	
			Second 6 months	40 [a]/98 (41.1)	
O'Toole, 2010, 20966377	Access emergency department, nonemergency care	HOPC	First 6 months	18 [a]/79 (22.4)	HOPC, pre vs post, p=0.02 GIM, pre vs post, p= 0.62 HOPC vs GIM (Second 6 months) OR (95% CI)= 0.50 (0.22, 1.13)[a] p= 0.13
			Second 6 months	10 [a]/79 (13.2)	
		GIM	First 6 months	24 [a]/98 (24.2)	
			Second 6 months	22 [a]/98 (22.1)	
O'Toole, 2010, 20966377	Proportion of emergency department visits that were non-emergency	HOPC	First 6 months	29/123 (23.6)	HOPC, pre vs post, p=0.39 GIM, pre vs post, p= 0.29 HOPC vs GIM (Second 6 months) OR (95% CI)= 0.46 (0.22, 0.93)[a] P<0.01
			Second 6 months	18/81 (18.5)	
		GIM	First 6 months	40/115 (34.8)	
			Second 6 months	27/70 (38.6)	
O'Toole, 2010, 20966377	Emergency department for a nonacute condition	HOPC	2006-2007	nr/79 (NR)	aOR (95% CI) 0.4 (0.2, 0.8)
		GIM	2004-2006	nr/98 (NR)	
O'Toole, 2018		HPACT	June 2012–January 2014	111/183 (61.0)	

Author, Year, PMID	Outcome Definition	Sample/Groups, Comparisons	Timepoint	n/N (%)	Effect size, p-value
	Percent of participants accessing care- Emergency department (any)	PACT	June 2012–January 2014	54/83 (65.9)	p=0 .45 OR (95% CI)= 0.83 (0.48, 1.42)[a]
O'Toole, 2018	Percent of participants accessing care- Emergency department (mental health-related)	HPACT	June 2012–January 2014	62/183 (34.1)	p=0.04 OR (95% CI)= 0.58 (0.34, 0.98)[a]
		PACT	June 2012–January 2014	39/83 (47.6)	
O'Toole, 2018	Acute care event- All-cause emergency department visits and hospitalizations as well as emergency department visits and hospitalizations for ambulatory care–sensitive conditions	HPACT	June 2012–January 2014	nr/NR	aOR (95% CI) = 0.41 (0.21, 0.80)
		PACT	June 2012–January 2014	nr/NR	

Notes. [a]Calculated by the research team.

Abbreviations. aOR=adjusted odds ratio; CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; IRR=incidence rate ratios; N=number; NR=not reported; OR=odds ratio; PACT=patient aligned care teams; Q=quarter; SE=standard error.

G3. Emergency Department (Non-Comparative)

Author, Year, PMID	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
O'Toole, 2013	Services Utilization During First 6 Months of Primary Care Enrollment- Emergency Department Visits	Homeless PACT	2008–2011	61[a]/127 (48)	

Notes. [a]Calculated by the research team.

Abbreviations. N=number; PACT=patient aligned care teams.

G4. Hospitalizations

Author, Year, PMID	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Size, p-value
Jones, 2018, 29412071	Percentages of patients with any health care visit before and after HPACT- Inpatient stay	HPACT	7-12 months before enrollment	30/179 (17)	aOR (95% CI) 0–6 months after HPACT enrollment vs 0-6 months before = 0.43 (0.25, 0.76) 7–12 months after HPACT enrollment vs 0-6 months before = 0.45 (0.26, 0.80)
			0-6 months before enrollment	56/179 (31)	
			0-6 months after enrollment	35/179 (20)	
			7-12 months after enrollment	36/179 (20)	
Jones, 2023, 35194740	Hospitalizations- Utilization Before and After Integrated Primary Care Enrollment	Integrated Primary Care	Pre-enrollment slope (rate of utilization in 4 quarters prior to enrollment)	nr/NR	IRR (SE) 1.54 (0.18) , p <0.001
			Level change (change in Q1 after enrollment vs Q prior to enrollment)	nr/NR	IRR (SE) 0.33 (0.11) , p <0.001
			Post-enrollment slope (rate in utilization in the 4 quarters after enrollment)	nr/NR	IRR (SE) 1.17 (0.11) , p= 0.08
			Trend change (%) (% change in post-enrollment slope vs pre-enrollment slope)	nr/NR	-34%, p= 0.04
O'Toole, 2010, 20966377	Total number of hospitalizations	HOPC	12 months	72/NR	NR, p=0.02
		GIM	12 months	47/NR	
O'Toole, 2010, 20966377	Proportion of hospitalizations not related to drug or alcohol use or mental health	HOPC	First 6 months	10/35 (28.6)	HOPC, pre vs post, P<0.01 GIM, pre vs post, p= 0.6 HOPC vs GIM (Second 6 months) OR (95% CI)= 0.15 (0.04, 0.61)[a] P<0.01
			Second 6 months	4/37 (10.8)	
		GIM	First 6 months	14/29 (48.2)	
			Second 6 months	8/18 (44.4)	
O'Toole, 2018	Percent of participants accessing care-Hospitalizations	HPACT	June 2012–January 2014	42/183 (23.1)	p=0.04 OR (95% CI)= 0.55 (0.31, 0.98)[a]
		PACT	June 2012–January 2014	29/83 (35.4)	

Note. [a]Calculated by the research team.

Abbreviations. aOR=adjusted odds ratio; CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; IRR=Incidence rate ratios; N=number; NR=not reported; OR=odds ratio; PACT=patient aligned care teams; Q=quarter; SE=standard error.

G5. Specialty Care

Author, Year, PMID	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Sze, p-value
Jones, 2018, 29412071	Percentages of patients with any health care visit before and after HPACT- Medical specialist visit	HPACT	7-12 months before enrollment	39/179 (22)	aOR (95% CI) 0–6 months after HPACT enrollment vs 0-6 months before= 1.38 (0.86, 2.23) 7–12 months after HPACT enrollment vs 0-6 months before = 0.81 (0.49, 1.31)
			0-6 months before enrollment	66/179 (37)	
			0-6 months after enrollment	77/179 (43)	
			7-12 months after enrollment	59/179 (33)	
Jones, 2018, 29412071	Percentages of patients with any health care visit before and after HPACT- Mental health specialist visit	HPACT	7-12 months before enrollment	41/179 (23)	aOR (95% CI) 0–6 months after HPACT enrollment vs 0-6 months before = 0.90 (0.53, 1.51) 7–12 months after HPACT enrollment vs 0-6 months before =0.35 (0.20, 0.60)
			0-6 months before enrollment	85/179 (47)	
			0-6 months after enrollment	82/179 (46)	
			7-12 months after enrollment	56/179 (31)	
Jones, 2018, 29412071	Percentages of patients with any health care visit before and after HPACT- Addiction specialist visit	HPACT	7-12 months before enrollment	14/179 (8)	aOR (95% CI) 0–6 months after HPACT enrollment vs 0-6 months before = 0.51 (0.24, 1.06) 7–12 months after HPACT enrollment vs 0-6 months before = 0.39 (0.18, 0.84)
			0-6 months before enrollment	25/179 (14)	
			0-6 months after enrollment	15/179 (8)	
			7-12 months after enrollment	12/179 (7)	
Jones, 2023, 35194740	Mental health Clinic- Utilization Before and After Integrated Primary Care Enrollment	Integrated Primary Care	Pre-enrollment slope (rate of utilization in 4 quarters prior to enrollment)	nr/NR	IRR (SE) 1.35 (0.06) , p <0.001
			Level change (change in Q1 after enrollment vs Q prior to enrollment)	nr/NR	IRR (SE) 0.46 (0.06) , p <0.001
			Post-enrollment slope (rate in utilization in the 4 quarters after enrollment)	nr/NR	IRR (SE) 0.94 (0.03) , p <0.001
			Trend change (%) (% change in post-enrollment slope vs pre-enrollment slope)	nr/NR	-30%, p= 0.1
Jones, 2023, 35194740	Specialty SUD Clinic - Utilization Before and After Integrated Primary Care Enrollment	Integrated Primary Care	Pre-enrollment slope (rate of utilization in 4 quarters prior to enrollment)	nr/NR	IRR (SE) 1.31 (0.06) , p <0.001

Author, Year, PMID	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Sze, p-value
			Level change (change in Q1 after enrollment vs Q prior to enrollment)	nr/NR	IRR (SE) 0.66 (0.09) , p <0.001
			Post-enrollment slope (rate in utilization in the 4 quarters after enrollment)	nr/NR	IRR (SE) 0.78 (0.03) , p <0.001
			Trend change (%) (% change in post-enrollment slope vs pre-enrollment slope)	nr/NR	-40%, p <0.001
Jones, 2023, 36810631	Rates of Depression Follow-up and Treatment	HPACT	Within 84 days	234[a]/374 (62.6)	aOR (95% CI)= 1.61 (1.21–2.15), p<.001
		PACT	Within 84 days	1133[a]/2469 (45.9)	
		HPACT	Within 180 days	291[a]/374 (77.8)	aOR (95% CI)= 1.51 (1.15–1.99), p<.001
		PACT	Within 180 days	1618[a]/2469 (65.5)	
Jones, 2023, 36810631	Receiving 60+ day supply of antidepressant prescriptions, 4+ mental health specialist visits, or 3+ psychotherapy visits	HPACT	Within 365 days following a positive depression screen	334[a]/374 (89.3)	aOR (95% CI)= 1.58 (1.15–2.16), p<.01
		PACT	Within 365 days following a positive depression screen	2,017[a]/2469 (81.7)	
O'Toole, 2018	Percent of participants accessing care- Psychiatry	HPACT	June 2012–January 2014	102/183 (56.0)	p= 0.26 OR (95% CI)= 0.75 (0.44, 1.28)[a]
		PACT	June 2012–January 2014	52/83 (63.4)	
O'Toole, 2018	Percent of participants accessing care- Psychology	HPACT	June 2012–January 2014	59/183 (32.4)	p=0.30 OR (95% CI)= 0.76 (0.44, 1.30)[a]
		PACT	June 2012–January 2014	32/83 (39.0)	
O'Toole, 2018	Percent of participants accessing care- Group Therapy	HPACT	June 2012–January 2014	73/183 (40.1)	p=0 .04 OR (95% CI)= 0.59 (0.35, 0.99)[a]
		PACT	June 2012–January 2014	44/83 (53.7)	

Notes. [a]Calculated by the research team.

Abbreviations. aOR=adjusted odds ratio; CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; IRR=incidence rate ratios; N=number; NR=not reported; OR=odds ratio; PACT=patient aligned care teams; Q=quarter; SE=standard error.

G6. Specialty Care (Non-Comparative)

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Size, p-value
O'Toole, 2013	Services Utilization During First 6 Months of Primary Care Enrollment- Mental Health Care	Homeless PACT	2008–2011	112[a]/127 (88.2)	-
	Services Utilization During First 6 Months of Primary Care Enrollment- Using substance abuse treatment services	Homeless PACT	2008–2011	48[a]/127 (37.8)	
	Services Utilization During First 6 Months of Primary Care Enrollment- Specialty Care	Homeless PACT	2008–2011	110[a]/127 (86.6)	
Chang 2020	Receipt of any add-on intensive services- Telehealth services	Those receiving homeless specialized primary care	October 2015- September 2016	124/2775 (4.5)	-
	Receipt of any add-on intensive services- Palliative care or hospice services	Those receiving homeless specialized primary care	October 2015- September 2016	47/2775 (1.7)	
	Receipt of any add-on intensive services- Intensive mental health case management services	Those receiving homeless specialized primary care	October 2015- September 2016	79/2775 (2.8)	

Notes. [a]Calculated by the research team.

Abbreviations. N=number; PACT=patient aligned care teams.

G7. Patient Experience/Satisfaction

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
Gabrielian, 2021	Accessibility and coordination (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Unadjusted)	HPACT	March - October 2018	278/626 (45.3)	-
		Mainstream Primary Care	March - October 2018	94/343 (28.4)	
	Accessibility and coordination (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Adjusted)	HPACT	March - October 2018	nr/NR (46.2)	aOR (95% CI) = 2.2 (1.6, 3.1), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (28.0)	
	Accessibility and coordination (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Unadjusted)	HPACT	March - October 2018	170/626 (27.7)	-
		Mainstream Primary Care	March - October 2018	124/343 (37.5)	
	Accessibility and coordination (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Adjusted)	HPACT	March - October 2018	nr/NR (26.4)	aOR (95% CI) = 0.6 (0.4, 0.8), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (38.4)	
Gabrielian, 2021	Patient-clinician relationship (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Unadjusted)	HPACT	March - October 2018	279/626 (45.2)	-
		Mainstream Primary Care	March - October 2018	114/343 (33.8)	
	Patient-clinician relationship (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Adjusted)	HPACT	March - October 2018	nr/NR (46.8)	aOR (95% CI)= 1.9 (1.4, 2.6), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (31.7)	
	Patient-clinician relationship (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Unadjusted)	HPACT	March - October 2018	178/626 (28.9)	-
		Mainstream Primary Care	March - October 2018	131/343 (38.9)	
	Patient-clinician relationship(Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Adjusted)	HPACT	March - October 2018	nr/NR (26.5)	aOR (95% CI) =0.5 (0.3, 0.6), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (42.4)	
Gabrielian, 2021	Perceived cooperation among clinician (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Unadjusted)	HPACT	March - October 2018	211/626 (38.0)	-
		Mainstream Primary Care	March - October 2018	96/343 (30.9)	
	Perceived cooperation among clinician (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Adjusted)	HPACT	March - October 2018	nr/NR (40.1)	aOR (95% CI) = 1.9 (1.4, 2.6), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (28.6)	
	Perceived cooperation among clinician (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Unadjusted)	HPACT	March - October 2018	155/626 (27.9)	-
		Mainstream Primary Care	March - October 2018	116/343 (37.3)	
		HPACT	March - October 2018	nr/NR (25.6)	aOR (95% CI) =0.5 (0.3, 0.6), p<0.05

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	Perceived cooperation among clinician (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Adjusted)	Mainstream Primary Care	March - October 2018	nr/NR (38.8)	
Gabrielian, 2021	Homeless-specific needs (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Unadjusted)	HPACT	March - October 2018	236/626 (39.9)	-
		Mainstream Primary Care	March - October 2018	77/343 (25.1)	
	Homeless-specific needs (Primary Care Quality-Homeless [PCQ-H] questionnaire), Favorable (Adjusted)	HPACT	March - October 2018	nr/NR (40.2)	aOR (95% CI) = 2.1 (1.5, 2.9), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (24.5)	
	Homeless-specific needs (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Unadjusted)	HPACT	March - October 2018	253/626 (42.7)	-
		Mainstream Primary Care	March - October 2018	182/343 (59.3)	
	Homeless-specific needs (Primary Care Quality-Homeless [PCQ-H] questionnaire), Unfavorable (Adjusted)	HPACT	March - October 2018	nr/NR (41.9)	aOR (95% CI) =0.5 (0.4, 0.7), p<0.05
		Mainstream Primary Care	March - October 2018	nr/NR (59.1)	
Jones, 2018 29762272	Access (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 9.3 vs 9.9
		Non-HPACT Facilities	2014–2015	nr/10148	
	Access (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 45.5 vs 42.2
		Non-HPACT Facilities	2014–2015	nr/10148	
Jones, 2018 29762272	Communication (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 10.8 vs 14.1
		Non-HPACT Facilities	2014–2015	nr/10148	
	Communication (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 65.8 vs 58.9
		Non-HPACT Facilities	2014–2015	nr/10148	
Jones, 2018 29762272	Office Staff Helpfulness/Courtesy (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 10.7 vs 12.3
		Non-HPACT Facilities	2014–2015	nr/10148	
	Office Staff Helpfulness/Courtesy (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 60.0 vs 58.8
		Non-HPACT Facilities	2014–2015	nr/10148	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
Jones, 2018 29762272	Overall Provider Rating (2014–2015 Patient-Centered Medical Home-Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 9.9 vs 12.5
		Non-HPACT Facilities	2014–2015	nr/10148	
	Overall Provider Rating (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 53.7 vs48.0
		Non-HPACT Facilities	2014–2015	nr/10148	
Jones, 2018 29762272	Comprehensiveness (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 17.1 vs 21.6
		Non-HPACT Facilities	2014–2015	nr/10148	
	Comprehensiveness (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 48.4 vs 44.0
		Non-HPACT Facilities	2014–2015	nr/10148	
Jones, 2018 29762272	Care Coordination (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 7.7 vs 10.4
		Non-HPACT Facilities	2014–2015	nr/10148	
	Care Coordination (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 59.9 vs 55.6
		Non-HPACT Facilities	2014–2015	nr/10148	
Jones, 2018 29762272	Shared Decision-Making (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 9.8 vs15.2
		Non-HPACT Facilities	2014–2015	nr/10148	
	Shared Decision-Making (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 42.3 vs 37.9
		Non-HPACT Facilities	2014–2015	nr/10148	
Jones, 2018 29762272	Self-Management Support (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Negative experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 25.1 vs 30.0
		Non-HPACT Facilities	2014–2015	nr/10148	
	Self-Management Support (2014–2015 Patient-Centered Medical Home-Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive experiences	HPACT Facilities	2014–2015	nr/2022	HPACT vs Non-HPACT, Adjusted %= 52.6 vs 45.0
		Non-HPACT Facilities	2014–2015	nr/10148	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
Jones, 2019	Access (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), (% [SE])	HPACT	2014–2015	140[a]/251 (55.7 [4.5])	-
		Standard PC with H-PACT Available	2014–2015	534[a]/1,527 (35.0 [1.8])	
		Standard PC (HPACT unavailable)	2014–2015	3497[a]/10,079 (34.7 [0.8])	
	Access (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	95[a]/251 (37.9 [4.3])	-
		Standard PC with H-PACT Available	2014–2015	785[a]/1,527 (51.4 [1.9])	
		Standard PC (HPACT unavailable)	2014–2015	5150[a]/10,079 (51.1 [0.8])	
	Access (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	16[a]/251 (6.4 [2.7])	-
		Standard PC with H-PACT Available	2014–2015	208[a]/1,527 (13.6 [1.5])	
		Standard PC (HPACT unavailable)	2014–2015	1441[a]/10,079 (14.3 [0.6])	
	Access (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	129[a]/251 (51.5)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT = 17.4 (8.1, 26.7), p<.001 Standard PC in facility with H-PACT versus facility without H-PACT = −0.9 (−4.6, 2.9), p= NS
		Standard PC with H-PACT Available	2014–2015	521[a]/1,527 (34.1)	
		Standard PC (HPACT unavailable)	2014–2015	3528[a]/10,079 (35.0)	
	Access (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariate	HPACT	2014–2015	141[a]/251 (56.2)	aRD (95% CI) : 21.1 (11.2, 31.0), p<.001
		Standard PC with H-PACT Available	2014–2015	534[a]/1527 (35.0)	
Jones, 2019	Communication (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	189[a]/251 (75.1 [3.9])	-
		Standard PC with H-PACT Available	2014–2015	889[a]/1,527 (58.2 [1.8])	
		Standard PC (HPACT unavailable)	2014–2015	5241[a]/10,079 (52.0 [0.8])	
		HPACT	2014–2015	48[a]/251 (19.2 [3.4])	-

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	Communication (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	Standard PC with H-PACT Available	2014–2015	391[a]/1,527 (25.6 [1.5])	
		Standard PC (HPACT unavailable)	2014–2015	2812[a]/10,079 (27.9 [0.7])	
	Communication (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	14[a]/251 (5.7 [2.4])	-
		Standard PC with H-PACT Available	2014–2015	247[a]/1,527 (16.2 [1.5])	
		Standard PC (HPACT unavailable)	2014–2015	2026[a]/10,079 (20.1 [0.6])	
	Communication (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	178[a]/251 (71.0)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT= 13.9 (5.2, 22.6), p<.01 Standard PC in facility with H-PACT versus facility without H-PACT= 4.7 (0.9, 8.4), p<.05
		Standard PC with H-PACT Available	2014–2015	872[a]/1,527 (57.1)	
		Standard PC (HPACT unavailable)	2014–2015	5291[a]/10,079 (52.5)	
	Communication (2014-2015 Patient Centered Medical Home Survey of Health care Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariate	HPACT	2014–2015	180[a]/251 (71.8)	aRD (95% CI) 13.1 (4.5, 21.7), p<.01
		Standard PC with H-PACT Available	2014–2015	896[a]/1,527 (58.7)	
Jones, 2019	Office staff helpfulness/courtesy (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	168[a]/251 (66.8 [4.2])	-
		Standard PC with H-PACT Available	2014–2015	776[a]/1,527 (50.8 [1.8])	
		Standard PC (HPACT unavailable)	2014–2015	5423[a]/10,079 (53.8 [0.8])	
	Office staff helpfulness/courtesy (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	52[a]/251 (20.9 [3.6])	-
		Standard PC with H-PACT Available	2014–2015	505[a]/1,527 (33.1 [1.7])	
		Standard PC (HPACT unavailable)	2014–2015	2993[a]/10,079 (29.7 [0.7])	
	Office staff helpfulness/courtesy (2014-2015 Patient Centered Medical Home Survey of	HPACT	2014–2015	31[a]/251 (12.3 [3.1])	-
		Standard PC with H-PACT Available	2014–2015	246[a]/1,527 (16.1 [1.3])	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	Healthcare Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	Standard PC (HPACT unavailable)	2014–2015	1663[a]/10,079 (16.5 [0.7])	
	Office staff helpfulness/courtesy (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	159[a]/251 (63.5)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT= 13.1 (4.1, 22.2), p<.01 Standard PC in facility with H-PACT versus facility without H-PACT= −3.6 (−7.5, 0.3), p=NS
		Standard PC with H-PACT Available	2014–2015	770[a]/1,527 (50.4)	
		Standard PC (HPACT unavailable)	2014–2015	5443[a]/10,079 (54.0)	
	Office staff helpfulness/courtesy (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariates	HPACT	2014–2015	160[a]/251 (63.6)	aRD (95% CI): 12.3 (3.5, 21.0), p<.01
		Standard PC with H-PACT Available	2014–2015	783[a]/1,527 (51.3)	
Jones, 2019	Provider rating (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	163[a]/251 (65.1 [4.2])	-
		Standard PC with H-PACT Available	2014–2015	770[a]/1,527 (50.4 [1.8])	
		Standard PC (HPACT unavailable)	2014–2015	4364[a]/10,079 (43.3 [0.8])	
	Provider rating (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	75[a]/251 (29.8 [3.9])	-
		Standard PC with H-PACT Available	2014–2015	542[a]/1,527 (35.5 [1.7])	
		Standard PC (HPACT unavailable)	2014–2015	3971[a]/10,079 (39.4 [0.8])	
	Provider rating (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	13[a]/251 (5.1 [2.4])	-
		Standard PC with H-PACT Available	2014–2015	215[a]/1,527 (14.1 [1.4])	
		Standard PC (HPACT unavailable)	2014–2015	1744[a]/10,079 (17.3 [0.6])	
	Provider rating (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]),	HPACT	2014–2015	148[a]/251 (58.9)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT= 11.0 (1.9, 20.1), p<.05
		Standard PC with H-PACT Available	2014–2015	730[a]/1,527 (47.8)	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	Adjusted probability of reporting a positive experience	Standard PC (HPACT unavailable)	2014–2015	445[a]/10,079 (44.1)	Standard PC in facility with H-PACT versus facility without H-PACT= 3.8 (−0.1, 7.6), p= NS
	Provider rating (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariates	HPACT	2014–2015	157[a]/251 (62.6)	aRD (95% CI): 11.9 (2.4, 21.4), p<.05
		Standard PC with H-PACT Available	2014–2015	774[a]/1,527 (50.7)	
Jones, 2019	Comprehensiveness (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	165[a]/251 (65.6 [4.0])	-
		Standard PC with H-PACT Available	2014–2015	825 [a]/1,527 (54.0 [1.8])	
		Standard PC (HPACT unavailable)	2014–2015	5241[a]/10,079 (52.0 [0.8])	
	Comprehensiveness (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	61[a]/251 (24.4 [3.7])	-
		Standard PC with H-PACT Available	2014–2015	441[a]/1,527 (28.9 [1.7])	
		Standard PC (HPACT unavailable)	2014–2015	2883[a]/10,079 (28.6 [0.7])	
	Comprehensiveness (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	25[a]/251 (10.0 [2.2])	-
		Standard PC with H-PACT Available	2014–2015	260[a]/1,527 (17.0 [1.3])	
		Standard PC (HPACT unavailable)	2014–2015	1965[a]/10,079 (19.5 [0.6])	
	Comprehensiveness (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	157[a]/251 (62.6)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT= 9.3 (0.8, 17.9), p<.05
		Standard PC with H-PACT Available	2014–2015	814[a]/1,527 (53.3)	
		Standard PC (HPACT unavailable)	2014–2015	5271[a]/10,079 (52.3)	Standard PC in facility with H-PACT versus facility without H-PACT= 1.0 (−3.0, 5.0), p= NS
	Comprehensiveness (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive	HPACT	2014–2015	156[a]/251 (62.0)	aRD (95% CI): 7.5 (−1.6, 16.6), p= NS
		Standard PC with H-PACT Available	2014–2015	832[a]/1,527 (54.5)	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	experience, Controlling for Site and Patient Covariates				
Jones, 2019	Coordination (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	170[a]/251 (67.9 [5.3])	-
		Standard PC with H-PACT Available	2014–2015	869[a]/1,527 (56.9 [2.1])	
		Standard PC (HPACT unavailable)	2014–2015	5261[a]/10,079 (52.2 [0.9])	
	Coordination (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	71[a]/251 (28.3 [4.9])	-
		Standard PC with H-PACT Available	2014–2015	519[a]/1,527 (34.0 [2.0])	
		Standard PC (HPACT unavailable)	2014–2015	3528[a]/10,079 (35.0 [0.9])	
	Coordination (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	9[a]/251 (3.7 [3.2])	-
		Standard PC with H-PACT Available	2014–2015	139[a]/1,527 (9.1 [1.4])	
		Standard PC (HPACT unavailable)	2014–2015	1300[a]/10,079 (12.9 [0.7])	
	Coordination (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	160[a]/251 (63.7)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT= 8.9 (−1.0, 21.0), p= NS Standard PC in facility with H-PACT versus facility without H-PACT= 2.0 (−1.8, 7.1), p= NS
		Standard PC with H-PACT Available	2014–2015	837[a]/1,527 (54.8)	
		Standard PC (HPACT unavailable)	2014–2015	5322[a]/10,079 (52.8)	
	Coordination (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariates	HPACT	2014–2015	165[a]/251 (65.8)	aRD (95% CI): 8.6 (−2.9, 20.1), p= NS
		Standard PC with H-PACT Available	2014–2015	873[a]/1,527 (57.2)	
Jones, 2019	Self-management support (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	163[a]/251 (64.8 [4.2])	-
		Standard PC with H-PACT Available	2014–2015	806[a]/1,527 (52.8 [1.8])	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
		Standard PC (HPACT unavailable)	2014–2015	4667[a]/10,079 (46.3 [0.8])	
	Self-management support (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	55[a]/251 (22.1 [3.7])	-
		Standard PC with H-PACT Available	2014–2015	324[a]/1,527 (21.2 [1.4])	
		Standard PC (HPACT unavailable)	2014–2015	2339[a]/10,079 (23.8 [0.7])	
	Self-management support (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	33[a]/251 (13.0 [3.0])	-
		Standard PC with H-PACT Available	2014–2015	389[a]/1,527 (25.5 [1.6])	
		Standard PC (HPACT unavailable)	2014–2015	3014[a]/10,079 (29.9 [0.7])	
	Self-management support (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	149[a]/251 (59.5)	aRD (95% CI): H-PACT versus standard PC in facility with H-PACT= 8.0 (−1.3, 17.4), p= NS Standard PC in facility with H-PACT versus facility without H-PACT= 4.6 (0.7, 8.5), p<.05
		Standard PC with H-PACT Available	2014–2015	785[a]/1,527 (51.4)	
		Standard PC (HPACT unavailable)	2014–2015	4717[a]/10,079 (46.8)	
	Self-management support (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariates	HPACT	2014–2015	151[a]/251 (60.3)	aRD (95% CI): 6.9 (−2.7, 16.6), p= NS
		Standard PC with H-PACT Available	2014–2015	815[a]/1,527 (53.4)	
Jones, 2019	Shared decision-making (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Positive (Unadjusted), % (SE)	HPACT	2014–2015	135[a]/251 (53.6 [5.2])	-
		Standard PC with H-PACT Available	2014–2015	634[a]/1,527 (41.5 [2.1])	
		Standard PC (HPACT unavailable)	2014–2015	3719[a]/10,079 (36.9 [0.9])	
	Shared decision-making (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Moderate (Unadjusted), % (SE)	HPACT	2014–2015	99[a]/251 (39.6 [5.1])	-
		Standard PC with H-PACT Available	2014–2015	719[a]/1,527 (47.1 [2.1])	
		Standard PC (HPACT unavailable)	2014–2015	4505[a]/10,079 (44.7 [1.0])	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	Shared decision-making (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Negative (Unadjusted), % (SE)	HPACT	2014–2015	17[a]/251 (6.8 [3.2])	-
		Standard PC with H-PACT Available	2014–2015	176[a]/1,527 (11.5 [1.3])	
		Standard PC (HPACT unavailable)	2014–2015	1855[a]/10,079 (18.4 [0.8])	
	Shared decision-making (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience	HPACT	2014–2015	120[a]/251 (48.0)	aRD (95% CI) H-PACT versus standard PC in facility with H-PACT= 8.4 (−2.3, 6.6), p= NS Standard PC in facility with H-PACT versus facility without H-PACT= 2.1 (−2.9, 19.7), p= NS
		Standard PC with H-PACT Available	2014–2015	605[a]/1,527 (39.6)	
		Standard PC (HPACT unavailable)	2014–2015	3780[a]/10,079 (37.5)	
	Shared decision-making (2014-2015 Patient Centered Medical Home Survey of Healthcare Experiences of Patients [PCMH-SHEP]), Adjusted probability of reporting a positive experience, Controlling for Site and Patient Covariates	HPACT	2014–2015	130[a]/251 (51.8)	aRD (95% CI): 10.2 (−2.0, 22.3), p= NS
		Standard PC with H-PACT Available	2014–2015	637[a]/1,527 (41.7)	
Kertesz, 2021	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Relationship (Unadjusted), N(%)	HPACT	2015–2017	894/3323[a] (26.9)	p<.001
		Mainstream PACT	2015–2017	767/2303[a] (33.3)	
	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Relationship (Weighted and Adjusted), Predicted Percentage (95% CI)	HPACT	2015–2017	nr/NR	26.2% (22.6%–29.7%) vs 38.0% (33.7%–42.3%), p<.001
		Mainstream PACT	2015–2017	nr/NR	
Kertesz, 2021	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Cooperation (Unadjusted), N(%)	HPACT	2015–2017	828/2947[a] (28.1)	p<.001
		Mainstream PACT	2015–2017	747/2041[a] (36.6)	
	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Cooperation (Weighted and Adjusted), Predicted Percentage (95% CI)	HPACT	2015–2017	nr/NR	27.9% (24.1%–31.6%) vs 39.3% (34.9%–43.7%), p<.001
		Mainstream PACT	2015–2017	nr/NR	
Kertesz, 2021	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Access/Coordination (Unadjusted), N(%)	HPACT	2015–2017	881/3300[a] (26.7)	p<.001
		Mainstream PACT	2015–2017	802/2284[a] (35.1)	

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Access/Coordination (Weighted and Adjusted), Predicted Percentage (95% CI)	HPACT	2015–2017	nr/NR	25.0% (21.4%–28.6%) vs 36.7% (32.3%–41.0%), p<.001
		Mainstream PACT	2015–2017	nr/NR	
Kertesz, 2021	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Homeless-specific needs (Unadjusted), N(%)	HPACT	2015–2017	1362/3123[a] (43.6)	p<.001
		Mainstream PACT	2015–2017	1046/1,940[a] (53.9)	
	Unfavorable Experience, Primary Care Quality-Homeless (PCQ-H) Scores-Homeless-specific needs (Weighted and Adjusted), Predicted Percentage (95% CI)	HPACT	2015–2017	nr/NR	48.3% (43.7%–52.9%) vs 60.9% (56.5%–65.4%), p<.001
		Mainstream PACT	2015–2017	nr/NR	

Notes. [a]Calculated by the research team.

Abbreviations. aOR=adjusted odds ratio; aRD=adjusted risk difference; CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; N=number; NR=not reported; OR=odds ratio; PACT=patient aligned care teams.

G8. Patient Experience/Satisfaction (Non-Comparative)

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Access, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (18.88)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Access, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (20.60)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Access, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (15.98)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Access, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (22.72)	-
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Communication, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (15.17)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Communication, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (53.43)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Communication, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (13.00)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Communication, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (56.81)	-
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Office staff helpfulness/courtesy, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (11.10)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Office staff helpfulness/courtesy, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (53.48)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Office staff helpfulness/courtesy, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (10.10)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-	PACT (homeless only)	October 2012- September 2013	nr/NR (55.00)	-

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	SHEP)- Office staff helpfulness/courtesy, Positive (Adjusted), %				
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Overall provider rating, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (12.51)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Overall provider rating, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (42.47)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Overall provider rating, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (10.42)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Overall provider rating, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (45.56)	-
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Comprehensiveness, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (19.03)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Comprehensiveness, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (53.20)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Comprehensiveness, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (18.80)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Comprehensiveness, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (53.11)	-
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Care coordination, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (13.08)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Care coordination, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (51.69)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-	PACT	October 2012- September 2013	nr/NR (12.59)	-

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect size, p-value
	SHEP)- Care coordination, Negative (Adjusted), %	(homeless only)			
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Care coordination, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (53.32)	-
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Medication decision making, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (13.32)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Medication decision making, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (39.18)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Medication decision making, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (12.06)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Medication decision making, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (41.27)	-
Jones, 2017	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Self-management support, Negative (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (30.78)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Self-management support, Positive (Unadjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (44.98)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Self-management support, Negative (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (31.44)	-
	Patient- Centered Medical Home-Survey of Healthcare Experiences of Patients (PCMH-SHEP)- Self-management support, Positive (Adjusted), %	PACT (homeless only)	October 2012- September 2013	nr/NR (45.71)	-

Abbreviations. NR=not reported; PACT=patient aligned care teams.

G9. Housing and Community Integration

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Size, p-value
Chinchilla	Community Adjustment based on primary care status (N=418)	Primary Care Access, Yes	1 year after housing	nr/NR	aOR (95% CI)= 1.01 (0.98, 1.04), p= 0.47
		Primary Care Access, No	1 year after housing	nr/NR	
	Housing Stability based on primary care status (N=426)	Primary Care Access, Yes	1 year after housing	nr/NR	aOR (95% CI)= 1.00 (0.95, 1.05), p= 0.87
		Primary Care Access, No	1 year after housing	nr/NR	
	Employment based on primary care status (N=144)	Primary Care Access, Yes	1 year after housing	nr/NR	aOR (95% CI)= 0.96 (0.88, 1.06), p= 0.44
		Primary Care Access, No	1 year after housing	nr/NR	
Johnson, 2017	Housing status change during the study- Remained in or moved to unstable housing	Accessed primary care within 1 month of study enrollment	6 months	9/81 (11)	OR (95% CI)= 0.38 (0.16, 0.95), p= 0.038[a]
		Did not access primary care within 1 month of study enrollment	6 months	15/61 (24.6)	
	Housing status change during the study- Began in unstable housing & moved to stable housing	Accessed primary care within 1 month of study enrollment	6 months	25/81 (30.9)	OR (95% CI)= 2.03 (0.91, 4.54), p= 0.085[a]
		Did not access primary care within 1 month of study enrollment	6 months	11/61 (18)	
	Housing status change during the study- Remained in stable housing	Accessed primary care within 1 month of study enrollment	6 months	47/81 (58)	OR (95% CI)= 1.03 (0.52, 2.01), p= 0.938[a]
		Did not access primary care within 1 month of study enrollment	6 months	35/61 (57.4)	

Notes. [a]Calculated by the research team.

Abbreviations. aOR=adjusted odds ratio; CI=confidence interval; N=number; NR=not reported; OR=odds ratio.

G10. Housing and Community Integration (Non-Comparative)

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Size, p-value
Chang 2020	Receipt of any add-on intensive services-Housing services	Those receiving homeless specialized primary care	October 2015-September 2016	1484/2775 (53.5)	-

Abbreviations. N=number.

G11. Disease-Specific Outcomes

Study	Outcome Definition	Sample/Groups	Timepoint	n/N (%)	Effect Size, p-value
O'Toole 2010	Patients at target goal- Blood Pressure under 140/90 mm Hg	HOPC	6 months	26[a]/33 (78.8)	p= 0.45 OR (95% CI)= 1.24 (0.41, 3.72)[a]
		GIM	6 months	30[a]/40 (75.0)	
O'Toole 2010	Patients at target goal- Diabetes Care, HbA1c under 7.0	HOPC	6 months	4[a]/7 (57.1)	p= 0.76 OR (95% CI)= 1.14 (0.18, 7.28)[a]
		GIM	6 months	7[a]/13 (53.8)	
O'Toole 2010	Patients at target goal- Lipid Management, LDL under 100 mg/dL for patients with comorbid diabetes and coronary artery disease and under 130 mg/dL for all others	HOPC	6 months	17[a]/26 (65.4)	p<0.01 OR (95% CI)= 2.27 (0.83, 6.18)[a]
		GIM	6 months	20[a]/44 (45.5)	
Riggs, 2020, 32181829	Overdose (any) in the last 3 years	HPACT	2018	nr/NR	aOR= 1.09 (0.92, 1.28)
		Mainstream Primary Care	2018	nr/NR	
Riggs, 2020, 32181829	Overdose (drug-related) in the last 3 years	HPACT	2018	nr/NR	aOR= 1.12 (0.91, 1.38)
		Mainstream Primary Care	2018	nr/NR	
Riggs, 2020, 32181829	Overdose (alcohol-related) in the last 3 years	HPACT	2018	nr/NR	aOR= 1.21 (0.96, 1.53)
		Mainstream Primary Care	2018	nr/NR	

Notes. [a]Calculated by the research team.

Abbreviations. aOR=adjusted odds ratio; CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; N=number; NR=not reported; OR=odds ratio.

APPENDIX H. CONTINUOUS OUTCOMES

H1. Primary Care

Author, Year, PMID	Outcome Details	Sample/Groups	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Jones, 2018, 29412071	Primary care	HPACT	0-12 months before enrollment	179	1.56 (2.56)	MD (95% CI) 1.13 (0.57; 1.69), p=0.0001[a]
			0-12 months after enrollment	179	2.69 (2.80)	
Gundlapalli, 2017, 28806373	Medicine primary	HPACT, High utilizers	6 months before enrollment	511	0.1 (NR)	MD = -0.012[a] p=0.015
			6 months after enrollment	511	0.088 (NR)	
		HPACT site Nonenrolled, High utilizers	First 6 months of data	2787	0.063 (NR)	MD = -0.014[a] p=NR
			Second 6 months of data	2787	0.049 (NR)	Difference-in-differences HPACT versus nonenrolled 0.002[a], p<0.001
		Usual care, High utilizers	First 6 months of data	1689	0.034 (NR)	MD = 0.012[a] p=NR
			Second 6 months of data	1689	0.046 (NR)	Difference-in-differences HPACT versus usual care -0.02[a], p=0.23
O'Toole, 2010, 20966377	Primary care visits	HOPC	First 6 months of data	79	5.96 (4.13)	MD = -3.95[a] p<0.01
			Second 6 months of data	79	2.01 (3.56)	
		GIM	First 6 months of data	98	1.63 (1.26)	MD = -0.32[a] p=0.1
			Second 6 months of data	98	1.31 (1.17)	
		HOPC	Second 6 months of data	79	2.01 (3.56)	MD (95% CI) 0.7 (-0.01 ; 1.46)[a] P=0.05
		GIM	Second 6 months of data	98	1.31 (1.17)	
O'Toole, 2018, 29451116	Primary care provider-specific visits	HPACT	June 2012–January 2014	183	5.1(4.1)	p=0.001 MD (95% CI)[a] 1.5 (0.5; 2.5)
		PACT	June 2012–January 2014	83	3.6 (2.8)	

Author, Year, PMID	Outcome Details	Sample/Groups	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2018, 29451116	Primary care provider and nursing visits	HPACT	June 2012–January 2014	183	8.8 (7.1)	p=0.06 MD (95% CI)[a] 1.7 (-0.10 ; 3.5)
		PACT	June 2012–January 2014	83	7.1 (6.4)	

Notes. [a]Calculated by the research team.

Abbreviations. CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; MD=mean difference; N=number; NR=not reported; PACT=patient aligned care teams; SD=standard deviation.

H2. Primary Care (Non-Comparative)

Author, Year, PMID	Outcome Details	Sample/Groups	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2013, 24148042	Primary care visits	Homeless PACT	First 6 months	127	8.4 (5.0)	NA
O'Toole, 2016, 27032987	Primary care visits	HPACT	October 2013 – March 2014	3,543	3.4 (NR)	NA
Chang, 2020, 32597993	Any primary care visit	Those receiving homeless specialized primary care	October 2015- September 2016	2,746	7.7 (8.1)	NA

Abbreviations. HPACT=homeless patient aligned care teams; N=number; NA=not applicable; NR=not reported; SD=standard deviation.

H3. Emergency Department

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Jones, 2018, 29412071	Any emergency department visit	HPACT	0-12 months before enrollment	179	1.13 (1.99)	MD (95% CI) 0.15(-0.28; 0.58) p=0.4938[a]
			0-12 months after enrollment	179	1.28 (2.15)	
Jones, 2018, 29412071	Inappropriate emergency department visit	HPACT	0-12 months before enrollment	179	0.55 (1.41)	MD (95% CI) -0.08 (-0.32; 0.16), p=0.5294[a]
			0-12 months after enrollment	179	0.47 (0.95)	
O'Toole, 2016, 27032987	Emergency department visits	HPACT	6 months before enrollment	3,543	3,022 (NR)	Change in emergency department visits from pre to post -19%
			6 months after enrollment	3,543	2,477 (NR)	
Gundlapalli, 2017, 28806373	Emergency department visits- mean per veteran; HPACT compared with usual care	Usual care – 0 visits	6 months before enrollment	23,542	0.57 (NR)	Pre-post difference = -0.30
			6 months after enrollment	23,542	0.27 (NR)	
		HPACT - 0 visits	6 months before	3,987	0.34 (NR)	Pre-post difference = 0.14
			6 months after enrollment	3,987	0.48 (NR)	Adj Difference-in-differences Usual care versus HPACT 0.44, p < 0.05
		Usual care – 1 visit	6 months before	23,542	1.04 (NR)	Pre-post difference = 0.56
			6 months after enrollment	23,542	1.60 (NR)	
		HPACT - 1 visit	6 months before	3,987	1.47 (NR)	Pre-post difference = -0.58
			6 months after enrollment	3,987	0.89 (NR)	Adj Difference-in-differences Usual care versus HPACT -1.13, p < 0.05
		Usual care – 2 or more visits	6 months before	23,542	2.10 (NR)	Pre-post difference = 2.09
			6 months after enrollment	23,542	4.19 (NR)	
		HPACT – 2 or more visits	6 months before	3,987	1.47 (NR)	Pre-post difference = -2.34
			6 months after enrollment	3,987	0.89 (NR)	Adj Difference-in-differences Usual care versus HPACT -4.43, p < 0.05

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Gundlapalli, 2017, 28806373	Emergency department visits mean per veteran; H-PACT compared with nonenrolled	HPACT - 0 visits	6 months before	3,987	0.32 (NR)	Pre-post difference = 0.13
			6 months after enrollment	3,987	0.46 (NR)	
		Nonenrolled – 0 visits	6 months before	24,363	0.19 (NR)	Pre-post difference = 0.42
			6 months after enrollment	24,363	0.62 (NR)	Adj Difference-in-differences Usual care versus HPACT nonenrolled 0.29, p < 0.05
		HPACT - 1 visit	6 months before	3,987	1.40 (NR)	Pre-post difference = -0.55
			6 months after enrollment	3,987	0.85 (NR)	
		Nonenrolled – 1 visit	6 months before	24,363	1.31 (NR)	Pre-post difference = -0.35
			6 months after enrollment	24,363	0.96 (NR)	Adj Difference-in-differences Usual care versus HPACT -0.20, p < 0.05
		HPACT – 2 or more visits	6 months before	3,987	4.51 (NR)	Pre-post difference = -2.24
			6 months after enrollment	3,987	2.28 (NR)	
		Nonenrolled – 2 or more visits	6 months before	24,363	3.81 (NR)	Pre-post difference = -1.95
			6 months after enrollment	24,363	1.86 (NR)	Adj Difference-in-differences Usual care versus HPACT -0.29, p < 0.05
Gundlapalli, 2017, 28806373	Emergency and urgent care visits mean per veteran per month	HPACT, High utilizers	6 months before	511	0.12 (NR)	MD = -0.061[a] p<0.001
			6 months after enrollment	511	0.059 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.083 (NR)	MD = -0.042[a] p = NR
			Second 6 months of data	2,787	0.041 (NR)	Difference-in-differences HPACT versus nonenrolled -0.02[a], p=0.27
		Usual care, High utilizers	First 6 months of data	1,689	0.029 (NR)	MD = 0.029 p = NR
			Second 6 months of data	1,689	0.058 (NR)	Difference-in-differences

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
						HPACT versus usual care -0.09[a], p=0.89
O'Toole, 2010, 20966377	Emergency department visits	HOPC	First 6 months of data	79	1.62 (2.53)	MD (95% CI) -0.55 (-0.1.32; 0.22)[a] p=0.06
			Second 6 months of data	79	1.07 (2.35)	
		GIM	First 6 months of data	98	1.21 (1.91)	MD (95% CI) -0.46 (-0.91; -0.01)[a] p=0.05
			Second 6 months of data	98	0.75 (1.17)	
		HOPC	Second 6 months of data	79	1.07 (2.35)	MD (95% CI) 0.32 (-0.22; 0.86)[a] P=0.27
		GIM	Second 6 months of data	98	0.75 (1.17)	
O'Toole, 2010, 20966377	Emergency Department Visits (Non-Emergency Care)	HOPC	First 6 months of data	79	0.38 (1.13)	MD (95% CI) -0.18 (-0.46; 0.10)[a] p=0.22
			Second 6 months of data	79	0.20 (0.60)	
		GIM	First 6 months of data	98	0.42 (1.00)	MD (95% CI) -0.13 (-0.36; 0.10)[a] p=0.26
			Second 6 months of data	98	0.29 (0.59)	
		HOPC	Second 6 months of data	79	0.20 (0.60)	MD (95% CI) -0.09 (-0.27; 0.09)[a] P=0.29
		GIM	Second 6 months of data	98	0.29 (0.59)	
O'Toole, 2010, 20966377	Emergency Department Visits (Substance Abuse-Related)	HOPC	First 6 months of data	79	0.46 (1.15)	MD (95C%) -0.03 (-0.49; 0.43)[a] p<.99
			Second 6 months of data	79	0.43 (1.74)	
		GIM	First 6 months of data	98	0.21 (0.64)	MD (95% CI) -0.10 (-0.25; 0.05)[a] p=0.13
			Second 6 months of data	98	0.11 (0.42)	
		HOPC	Second 6 months of data	79	0.43 (1.74)	MD (95% CI) 0.32 (-0.04 ; 0.68)[a] p=0.06
		GIM	Second 6 months of data	98	0.11 (0.42)	
O'Toole, 2018, 29451116	Emergency department visits	HPACT	June 2012–January 2014	183	2.6 (4.4)	MD (95% CI) -0.3 (-1.4; 0.8)[a] p=0.57
		PACT	June 2012–January 2014	83	2.9 (3.9)	
		HPACT	June 2012–January 2014	183	0 (0.2)	MD (95% CI)

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2018, 29451116	Emergency department visits for ambulatory-care-sensitive conditions	PACT	June 2012–January 2014	83	0.2 (0.6),	-0.2 (-0.3 ; -0.1)[a] p=0.04

Notes. [a]Calculated by the research team.

Abbreviations. CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; MD=mean difference; N=number; NR=not reported; PACT=patient aligned care teams; SD=standard deviation.

H4. Emergency Department (Non-Comparative)

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Chang, 2020, 32597993	Emergency room visit	Those receiving homeless specialized primary care	October 2015-September 2016	2,746	2.2 (4.2)	NA
O'Toole, 2013, 24148042	Emergency department visits	Homeless PACT	First 6 months	127	1.0	NA

Abbreviations. N=number; NA=not applicable; PACT=patient aligned care teams; SD=standard deviation.

H5. Hospitalization/Inpatient

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Jones, 2018, 29412071	Inpatient stay	HPACT	0-12 months before enrollment	179	0.74 (1.43)	MD (95% CI) -0.04 (-0.35; 028) p=0.8032[a]
			0-12 months after enrollment	179	0.70 (1.60)	
O'Toole, 2016, 27032987	Hospitalizations	HPACT	6 months before enrollment	3,543	812 (NR)	Change in hospitalizations from pre to post -34.7%
			6 months after enrollment	3,543	530 (NR)	
			Second 6 months of data	1,689	0.004 (NR)	
O'Toole, 2010, 20966377	Hospitalization admissions/person	HOPC	First 6 months of data	79	0.46 (0.85)	MD (95% CI) 0.01 (0.32; 0.34)[a] 0.02 p=0.94
			Second 6 months of data	79	0.47 (1.21)	
		GIM	First 6 months of data	86	0.30 (0.72)	MD (95% CI) -0.15 (-0.32; 0.02)[a] p=0.11
			Second 6 months of data	86	0.15 (0.48)	
		HOPC	Second 6 months of data	79	0.47 (1.21)	MD (95% CI) 0.32 (0.04 ; 0.60)[a] p = 0.0247
		GIM	Second 6 months of data	86	0.15 (0.48)	
O'Toole, 2018, 29451116	Hospitalizations	HPACT	June 2012–January 2014	183	0.4 (0.8)	MD (95% CI)[a] -0.2 (-0.5; 0.1) p=0.06
		PACT	June 2012–January 2014	83	0.6 (1.2)	
O'Toole, 2018, 29451116	Hospitalizations (not a VA Hospital)	HPACT	June 2012–January 2014	183	0 (0.1)	MD (95% CI)[a] -0.1 (-1.5; 1.3) p=0.29
		PACT	June 2012–January 2014	83	0.1 (9.7)	

Notes. [a]Calculated by the research team.

Abbreviations. CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; HPACT=homeless patient aligned care teams; MD=mean difference; N=number; NR=not reported; PACT=patient aligned care teams; SD=standard deviation.

H6. Hospitalization/Inpatient (Non-Comparative)

Author, Year, PMID	Outcome Details	Group/Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Trivedi, 2018, 30151996	Total VA-and Medicare -financed acute care hospitalizations	Veterans with higher reliance	12 months	1,211	1.49 (1.26; 1.71)	NA
Trivedi, 2018, 30151996	VA-financed acute care hospitalizations	Veterans with higher reliance	12 months	1,211	0.63 (0.48; 0.78)	NA
Trivedi, 2018, 30151996	Medicare-financed acute care hospitalizations	Veterans with higher reliance	12 months	1,211	0.85 (0.72; 0.98)	NA
Trivedi, 2018, 30151996	Medicare acute hospitalizations	Veterans with higher reliance- Overall	12 months	1,211	0.71 (0.60; 0.82)[a]	NA
Trivedi, 2018, 30151996	VA acute hospitalizations	Veterans with higher reliance-Overall	12 months	1,211	0.55 (0.39; 0.71)[a]	NA
Trivedi, 2018, 30151996	Medicare acute hospitalizations	Veterans with higher reliance-Low intensity (0–22 visits)	12 months	1,211	0.21 (0.12; 0.31)[a]	NA
Trivedi, 2018, 30151996	VA acute hospitalizations	Veterans with higher reliance-Low intensity (0–22 visits)	12 months	1,211	0.27 (0.11; 0.43)[a]	NA
Trivedi, 2018, 30151996	Medicare acute hospitalizations	Veterans with higher reliance- Medium intensity (23–55 visits)	12 months	1,211	0.64 (0.51; 0.78)[a]	NA
Trivedi, 2018, 30151996	VA acute hospitalizations	Veterans with higher reliance- Medium intensity (23–55 visits)	12 months	1,211	0.50 (0.26; 0.73)[a]	NA
Trivedi, 2018, 30151996	Medicare acute hospitalizations	Veterans with higher reliance- High intensity (>55 visits)	12 months	1,211	1.31 (1.04; 1.58)[a]	NA
Trivedi, 2018, 30151996	VA acute hospitalizations	Veterans with higher reliance- High intensity (>55 visits)	12 months	1,211	1.17 (0.70; 1.63)[a]	NA

Notes. [a]Adjusted mean annual hospitalizations.

Abbreviations. N=number; NA=not applicable; SD=standard deviation.

H7. Specialized Care/Other

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Jones, 2018, 29412071	Medical specialist	HPACT	0-12 months before enrollment	179	1.28 (2.18)	MD (95% CI) 1.44 (0.31; 2.56), p=0.0122[a]
			0-12 months after enrollment	179	2.72 (7.33)	
Jones, 2018, 29412071	Mental health specialist	HPACT	0-12 months before enrollment	179	2.97 (5.25)	MD (95% CI) 0.14 (-0.98; 1.25), p=0.8054[a]
			0-12 months after enrollment	179	3.11 (5.49)	
Jones, 2018, 29412071	Addiction specialist visit	HPACT	0-12 months before enrollment	179	0.31 (0.71)	MD (95% CI) -0.07 (-0.22; 0.08), p=0.3550[a]
			0-12 months after enrollment	179	0.24 (0.72)	
Gundlapalli, 2017, 28806373	Dental service	HPACT, High utilizers	6 months before enrollment	511	0.013 (NR)	MD = 0.001[a] p = 0.97
			6 months after enrollment	511	0.014 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.013 (NR)	MD = -0.001[a] p = NR Difference-in-differences HPACT versus nonenrolled 0.002[a], p=0.0059
			Second 6 months of data	2,787	0.012 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.0037 (NR)	MD = 0.0015[a] p = NR Difference-in-differences HPACT versus usual care -0.0004[a], p=0.056
			Second 6 months of data	1,689	0.0052 (NR)	
Gundlapalli, 2017, 28806373	Diagnostic (laboratory and imaging)	HPACT, High utilizers	6 months before enrollment	511	0.19 (NR)	MD = -0.05[a] p=0.039
			6 months after enrollment	511	0.14 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.15 (NR)	MD = -0.05[a] p = NR Difference-in-differences
			Second 6 months of data	2,787	0.10 (NR)	

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
						HPACT versus nonenrolled 0[a], p=0.016
		Usual care, High utilizers	First 6 months of data	1,689	0.063 (NR)	MD = 0.028 p = NR Difference-in-differences HPACT versus usual care -0.078[a], p=0.64
			Second 6 months of data	1,689	0.091 (NR)	
Gundlapalli, 2017, 28806373	Medical specialty	HPACT, High utilizers	6 months before enrollment	511	0.059 (NR)	MD = -0.007[a] p=0.24
			6 months after enrollment	511	0.052 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.058 (NR)	MD = -0.009[a] p = NR Difference-in-differences HPACT versus nonenrolled 0.002[a], p=0.0022
			Second 6 months of data	2,787	0.049 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.027 (NR)	MD = 0.009[a] p = NR Difference-in-differences HPACT versus usual care -0.016[a], p=0.42
			Second 6 months of data	1,689	0.036 (NR)	
Gundlapalli, 2017, 28806373	Mental health	HPACT, High utilizers	6 months before enrollment	511	0.2 (NR)	MD = -0.04[a] p=0.0031
			6 months after enrollment	511	0.16 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.16 (NR)	MD = -0.04[a] p=NR Difference-in-differences HPACT versus nonenrolled 0[a], p=0.22
			Second 6 months of data	2,787	0.12 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.084 (NR)	MD = 0.026[a] p=NR Difference-in-differences
			Second 6 months of data	1,689	0.11 (NR)	

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
						HPACT versus usual care -0.066[a], p=0.88
Gundlapalli, 2017, 28806373	Rehabilitation	HPACT, High utilizers	6 months before enrollment	511	0.062 (NR)	MD = -0.014[a] p=0.0068
			6 months after enrollment	511	0.048 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.062 (NR)	MD = -0.014[a] p=NR Difference-in-differences HPACT versus nonenrolled 0[a], p=0.014
			Second 6 months of data	2,787	0.048 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.037 (NR)	MD = 0.012[a] p=NR Difference-in-differences HPACT versus usual care -0.026[a], p=0.049
			Second 6 months of data	1,689	0.049 (NR)	
Gundlapalli, 2017, 28806373	Social work	HPACT, High utilizers	6 months before enrollment	511	0.038 (NR)	MD = -0.012[a] p=0.008
			6 months after enrollment	511	0.026 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.033 (NR)	MD = -0.013[a] p=NR Difference-in-differences HPACT versus nonenrolled 0.001[a], p=0.062
			Second 6 months of data	2,787	0.02 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.0094 (NR)	MD = 0.0066[a] p=NR Difference-in-differences HPACT versus usual care -0.0186[a], p=0.24
			Second 6 months of data	1,689	0.016 (NR)	
Gundlapalli, 2017, 28806373	Homeless Care	HPACT, High utilizers	6 months before enrollment	511	0.18 (NR)	MD = 0.02[a] p<0.001
			6 months after enrollment	511	0.20 (NR)	

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.12 (NR)	MD = -0.01[a] p = NR Difference-in-differences HPACT versus nonenrolled 0.03[a], p<0.001
			Second 6 months of data	2,787	0.11 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.046 (NR)	MD = 0.024[a] p = NR Difference-in-differences HPACT versus usual care -0.004[a], p<0.001
			Second 6 months of data	1,689	0.07	
Gundlapalli, 2017, 28806373	Substance abuse	HPACT, High utilizers	6 months before enrollment	511	0.2 (NR)	MD = -0.05[a] p=0.72
			6 months after enrollment	511	0.15 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.16 (NR)	MD = -0.05[a] p=NR Difference-in-differences HPACT versus nonenrolled 0[a], p=0.47
			Second 6 months of data	2,787	0.11 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.05 (NR)	MD = 0.018[a] p=NR Difference-in-differences HPACT versus usual care -0.068[a], p=0.14
			Second 6 months of data	1,689	0.068 (NR)	
Gundlapalli, 2017, 28806373	Surgery	HPACT, High utilizers	6 months before enrollment	511	0.0084 (NR)	MD = -0.0032 [a] p=0.019
			6 months after enrollment	511	0.0052 (NR),	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.0059 (NR)	MD =-0.0019[a] p=NR Difference-in-differences HPACT versus nonenrolled -0.001[a], p=0.32
			Second 6 months of data	2,787	0.004 (NR)	

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
		Usual care, High utilizers	First 6 months of data	1,689	0.003 (NR)	MD = 0.001[a] p=NR Difference-in-differences HPACT versus usual care -0.004[a], p=0.83
Gundlapalli, 2017, 28806373	Surgical specialty	HPACT, High utilizers	6 months before enrollment	511	0.031 (NR)	MD = -0.009[a] p=0.76
			6 months after enrollment	511	0.022 (NR)	
		HPACT nonenrolled, High utilizers	First 6 months of data	2,787	0.024 (NR)	MD = -0.006[a] p=NR Difference-in-differences HPACT versus nonenrolled -0.003[a], p=0.6
			Second 6 months of data	2,787	0.018 (NR)	
		Usual care, High utilizers	First 6 months of data	1,689	0.01 (NR)	MD = 0.005[a] p=NR Difference-in-differences HPACT versus usual care -0.01[a], p=0.17
			Second 6 months of data	1,689	0.015 (NR)	
O'Toole, 2018, 29451116	Specialty care visits	HPACT	June 2012–January 2014	183	3.1 (5.0)	MD (95% CI)[a] -0.5 (-1.8 ; 0.8) p=0.41
		PACT	June 2012–January 2014	83	3.6 (4.5)	
O'Toole, 2018, 29451116	Social work visits	HPACT	June 2012–January 2014	183	4.6 (3.7)	MD (95% CI)[a] 1.9 (1.0 ; 2.8) p=0.001
		PACT	June 2012–January 2014	83	2.7 (2.1)	
O'Toole, 2018, 29451116	Mental health care visits	HPACT	June 2012–January 2014	183	8.8 (11.8)	MD (95% CI)[a] -4.6 (-7.9 ; -1.3) p=0.01
		PACT	June 2012–January 2014	83	13.4 (14.3)	
O'Toole, 2018, 29451116	30-day prescription drug fills	HPACT	June 2012–January 2014	183	40.5 (39.5)	MD (95% CI)[a] -18.3 (-29.9 ; -6.7) p=0.001
		PACT	June 2012–January 2014	83	58.8 (53.9)	

Notes. [a]Calculated by the research team.

Abbreviations. CI=confidence interval; GIM=general internal medicine; HOPC=homeless oriented primary care; MD=mean difference; N=number; NR=not reported; SD=standard deviation.

H8. Specialized Care/Other (Non-Comparative)

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2013, 24148042	Mental health care	Homeless PACT	First 6 months	127	12.0	NA
O'Toole, 2013, 24148042	Specialty care	Homeless PACT	First 6 months	127	6.9	NA
O'Toole, 2016, 27032987	Specialty clinic visits	HPACT	October 2013 – March 2014	3,543	1.5 (NR)	NA
O'Toole, 2016, 27032987	HPACT member visits (excluding PCP visits)	HPACT	October 2013 – March 2014	3,543	5.9 (NR)	NA
Chang, 2020, 32597993	Mental health care visit	Those receiving homeless specialized primary care	October 2015-September 2016	2,746	34.9 (39.1)	NA
Chang, 2020, 32597993	Specialty care visit	Those receiving homeless specialized primary care	October 2015-September 2016	2,746	2.6 (4.0)	NA
Chang, 2020, 32597993	Other visits	Those receiving homeless specialized primary care	October 2015-September 2016	2,746	15.4 (18.9)	NA

Abbreviations. N=number; NA=not applicable; PACT=patient aligned care teams; PCP=primary care provider; SD=standard deviation.

H9. Patient Experience/Satisfaction

Author, Year, PMID	Outcome Details	Group/ Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2018, 29451116	Staff are respectful	HPACT	June 2012–January 2014	183	1.5 (0.7)	MD (95% CI)[a] 0.1 (-0.1; 0.3) p=0.66
		PACT	June 2012–January 2014	83	1.4 (0.6)	
O'Toole, 2018, 29451116	Staff are sensitive do needs	HPACT	June 2012–January 2014	183	1.6 (0.9)	MD (95% CI)[a] 0 (-0.2; 0.2) p=0.84
		PACT	June 2012–January 2014	83	1.6 (0.9)	
O'Toole, 2018, 29451116	Staff not as competent as staff in non-VA care	HPACT	June 2012–January 2014	183	4.3 (1.1)	MD (95% CI)[a] 0.3 (0.01; 0.6) p=0.07
		PACT	June 2012–January 2014	83	4.0 (1.2)	
O'Toole, 2018, 29451116	Care is helpful	HPACT	June 2012–January 2014	183	1.3 (0.7)	MD (95% CI)[a] -0.1 (-0.3; 0.1) p=0.20
		PACT	June 2012–January 2014	83	1.4 (0.9)	
O'Toole, 2018, 29451116	Care is better than elsewhere	HPACT	June 2012–January 2014	183	1.4 (0.8)	MD (95% CI)[a] -0.2 (-0.4; 0.02) p=0.36
		PACT	June 2012–January 2014	83	1.6 (0.9)	
O'Toole, 2018, 29451116	Long wait	HPACT	June 2012–January 2014	183	3.6 (1.3)	MD (95% CI)[a] 0.2 (-0.1; 0.5) p=0.31
		PACT	June 2012–January 2014	83	3.4 (1.3)	
O'Toole, 2018, 29451116	More affordable that non-VA care	HPACT	June 2012–January 2014	183	1.2 (0.7)	MD (95% CI)[a] 0.1 (-0.1; 0.3) p=0.54
		PACT	June 2012–January 2014	83	1.1 (0.4),	
O'Toole, 2018, 29451116	All questions answered	HPACT	June 2012–January 2014	183	1.6 (1.0)	MD (95% CI)[a] -0.2 (-0.5; 0.1) p=0.36
		PACT	June 2012–January 2014	83	1.8 (1.0)	
O'Toole, 2018, 29451116	Included in care decisions	HPACT	June 2012–January 2014	183	1.6 (1.0)	MD (95% CI)[a] -0.1 (-0.4; 0.2) p=0.85
		PACT	June 2012–January 2014	83	1.7 (1.0)	
O'Toole, 2018, 29451116	Provider listens to you	HPACT	June 2012–January 2014	183	1.5 (0.9)	MD (95% CI)[a] -0.1 (-0.3; 0.1) p=0.31
		PACT	June 2012–January 2014	83	1.6 (1.0)	
O'Toole, 2018, 29451116	Get everything you need without being sent elsewhere	HPACT	June 2012–January 2014	183	1.8 (1.1)	MD (95% CI)[a] -0.2 (-0.5; 0.1) p=0.26
		PACT	June 2012–January 2014	83	2.0 (1.2)	
O'Toole, 2018, 29451116	Treated better because homeless	HPACT	June 2012–January 2014	183	3.5 (1.6)	MD (95% CI)[a] -0.1 (-0.5; 0.3)
		PACT	June 2012–January 2014	83	3.6 (1.4)	

Author, Year, PMID	Outcome Details	Group/ Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
						p=0.66
O'Toole, 2018, 29451116	Treated worse because homeless	HPACT	June 2012–January 2014	183	4.2 (1.3)	MD (95% CI)[a] -0.1 (-0.4; 0.2) p=0.65
		PACT	June 2012–January 2014	83	4.3 (1.2)	
O'Toole, 2018, 29451116	Hard time getting there	HPACT	June 2012–January 2014	183	3.6 (1.5)	MD (95% CI)[a] -0.2 (-0.6; 0.2) p=0.44
		PACT	June 2012–January 2014	83	3.8 (1.4)	
O'Toole, 2018, 29451116	Too much bureaucracy	HPACT	June 2012–January 2014	183	3.5 (1.5)	MD (95% CI)[a] 0.2 (-0.2; 0.6) p=0.34
		PACT	June 2012–January 2014	83	3.3 (1.5)	
Kertesz, 2021, 33827104	Primary Care Quality-Homeless (PCQ-H) Scores and Unfavorable experiences - Relationship	HPACT	2015–2017	3394	3.20 (0.56)	MD (95% CI)[a] 0.11 (0.08; 0.14) p<0.001
		Mainstream PACT	2015–2017	2372	3.09 (0.60)	
Kertesz, 2021, 33827104	Primary Care Quality-Homeless (PCQ-H) Scores and Unfavorable experiences - Cooperation	HPACT	2015–2017	3394	2.79 (0.74)	MD (95% CI)[a] 0.14 (0.10; 0.18) p<0.001
		Mainstream PACT	2015–2017	2372	2.65 (0.79)	
Kertesz, 2021, 33827104	Primary Care Quality-Homeless (PCQ-H) Scores and Unfavorable experiences – Access/Coordination	HPACT	2015–2017	3394	3.07 (0.52)	MD (95% CI)[a] 0.12 (0.09; 0.15) p<0.001
		Mainstream PACT	2015–2017	2372	2.95 (0.55)	
Kertesz, 2021, 33827104	Primary Care Quality-Homeless (PCQ-H) Scores and Unfavorable experiences – Specific needs	HPACT	2015–2017	3394	3.02 (0.61)	MD (95% CI)[a] 0.2 (0.17; 0.23) p<0.001
		Mainstream PACT	2015–2017	2372	2.82 (0.67)	
Kertesz, 2021, 33827104	Primary Care Quality-Homeless (PCQ-H) Scores -Relationship, Weighted and Adjusted Estimate (SE)	HPACT	2015–2017	3394	3.21 (0.03)	p<.001
		Mainstream PACT	2015–2017	2372	3.05 (0.03)	
Kertesz, 2021 33827104	Primary Care Quality-Homeless (PCQ-H) Scores -Cooperation, Weighted and Adjusted Estimate (SE)	HPACT	2015–2017	3394	2.82 (0.04)	p<.001
		Mainstream PACT	2015–2017	2372	2.64 (0.04)	
Kertesz, 2021 33827104	Primary Care Quality-Homeless (PCQ-H) Scores - Access/Coordination, Adjusted Estimate (SE)	HPACT	2015–2017	3394	3.07 (0.03)	p<.001
		Mainstream PACT	2015–2017	2372	2.92 (0.03)	
Kertesz, 2021 33827104	Primary Care Quality-Homeless (PCQ-H) Scores - Homeless-specific needs, Adjusted Estimate (SE)	HPACT	2015–2017	3394	3.01 (0.03)	p<.001
		Mainstream PACT	2015–2017	2372	2.79 (0.03)	
Kertesz, 2013, 24148052	Primary Care Quality Homeless Scores - Relationship	Tailored	January 2011–March 2012	94	3.38 (0.97)	MD (95% CI) -0.13 (-0.44; 0.18), p=0.4123[a]
		Mainstream VA	January 2011–March 2012	312	3.25 (1.44)[a]	

Author, Year, PMID	Outcome Details	Group/ Comparators	Timepoint	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
Kertesz, 2013, 24148052	Primary Care Quality-Homeless Scores - Cooperation	Tailored	January 2011–March 2012	94	2.96 (1.45)	MD (95% CI) -0.10 (-0.46; 0.26), p=0.5840[a]
		Mainstream VA	January 2011–March 2012	312	2.86 (1.58)[a]	
Kertesz, 2013, 24148052	Primary Care Quality-Homeless Scores - Access/coordination	Tailored	January 2011–March 2012	94	3.19 (0.97)	MD (95% CI) -0.04 (-0.34; 0.26), p=0.7959[a]
		Mainstream VA	January 2011–March 2012	312	3.15 (1.40)[a]	
Kertesz, 2013, 24148052	Primary Care Quality-Homeless Scores - Homeless-specific	Tailored	January 2011–March 2012	94	3.38 (1.07)	MD (95% CI) -0.19 (-0.45 ; 0.07), p=0.1488[a]
		Mainstream VA	January 2011–March 2012	312	3.19 (1.13)[a]	

Notes. [a]Calculated by the research team.

Abbreviations. CI=confidence interval; HPACT=homeless patient aligned care teams; MD=mean difference; N=number; NR=not reported; PACT=patient aligned care teams; SE=standard error; SD=standard deviation.

H10. Cost

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2018, 29451116	Costs – Overall	HPACT	June 2012–January 2014	183	28,036 (27,036)	MD (95% CI)[a] -9,352 (-17,281; -1,422) p=0.04
		PACT	June 2012–January 2014	83	37,415 (36,872)	
O'Toole, 2018, 29451116	Costs – Specialty care	HPACT	June 2012–January 2014	183	1,824 (3,838)	MD (95% CI)[a] -56 (-1.002; 890) p=0.90
		PACT	June 2012–January 2014	83	1,880 (3,131)	
O'Toole, 2018, 29451116	Costs – Mental Health-related substance abuse treatment	HPACT	June 2012–January 2014	183	3,378 (4,759)	MD (95% CI)[a] -1,392 (-2,658; -125) p=0.03
		PACT	June 2012–January 2014	83	4,770 (5,084)	
O'Toole, 2018, 29451116	Costs – Non VA-based care	HPACT	June 2012–January 2014	183	19 (252)	MD (95% CI)[a] -1,016 (-2,222; 190) p=0.27
		PACT	June 2012–January 2014	83	1,035 (8,298)	

Author, Year, PMID	Outcome Details	Group/Comparators	Follow-up	N	Mean (SD) or Median [25th , 75th percentiles]	Effect Size, p-value
O'Toole, 2018, 29451116	Costs – Prescription drugs	HPACT	June 2012–January 2014	183	1,698 (2,441)	MD (95% CI)[a] -1,483 (-3,232; 266) p=0.25
		PACT	June 2012–January 2014	83	3,181 (11,483)	
O'Toole, 2018, 29451116	Costs – Hospitalizations	HPACT	June 2012–January 2014	183	5,530 (18,138)	MD (95% CI)[a] -4,899 (-10,188 ; 390) p=0.10
		PACT	June 2012–January 2014	83	10,429 (24,427)	
O'Toole, 2018, 29451116	Costs- Emergency department	HPACT	June 2012–January 2014	183	1,978 (3,627)	MD (95% CI) -257 (-1,239 ; 725)[a] p=0.6071
		PACT	June 2012–January 2014	83	2,235 (4,076)	
O'Toole, 2018, 29451116	Costs- Emergency department for ambulatory care-sensitive conditions	HPACT	June 2012–January 2014	183	19 (165)	MD (95% CI) -86 (-169 ; -2)[a] p=0.04
		PACT	June 2012–January 2014	83	105 (517)	
O'Toole, 2018, 29451116	Costs – Primary Care	HPACT	June 2012–January 2014	183	2,947 (2,511)	p=0.03 MD (95% CI)[a] 681 (45 ; 1,316)
		PACT	June 2012–January 2014	83	2,266 (2,266)	

Notes. [a]Calculated by the research team.

Abbreviations. CI=confidence interval; HPACT=homeless patient aligned care teams; MD=mean difference; N=number; PACT=patient aligned care teams; SD=standard deviation.

PEER REVIEW COMMENTS AND RESPONSES

Comment Number	Reviewer Number	Reviewer Comment	Response
Are the objectives, scope, and methods for this review clearly described?			
1	1	Yes	Thank you.
2	2	Yes	Thank you.
3	3	Yes	Thank you.
4	5	Yes	Thank you.
5	7	Yes	Thank you.
Is there any indication of bias in our synthesis of the evidence?			
6	1	No	Thank you.
7	2	No	Thank you.
8	3	No	Thank you.
9	5	No	Thank you.
10	7	No	Thank you.
Are you aware of any published or unpublished studies that we may have overlooked?			
11	1	No	Thank you.
12	2	No	Thank you.
13	3	No	Thank you.
14	5	No	Thank you.
15	7	No	Thank you.
Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.			
16	1	Overall, I think this was a good review and I appreciated that the GRADE approach was used to gauge the level of confidence in different findings. A few minor comments	Thank you.
17	1	I think Key Question #1 could perhaps be stated a bit simpler? The question is posed with a several of names of different programs, perhaps come up with a simpler way to phrase the Key Question for readers to quickly understand the scope and not be drowned in the abbreviations and program names?	Thank you. We revised Key Question 1 per the reviewer's suggestion. *Among Veterans enrolled in VA programs for those experiencing housing insecurity[a], what is the effect of receiving primary care through PACT and/or HPACT on Veteran-reported, clinical, health service use, and housing outcomes?*

Comment Number	Reviewer Number	Reviewer Comment	Response
			Footnote [a] states the specific VA homeless programs.
18	1	This work was described as a systematic review but were certain review guidelines used such as Cochrane, Campbell, PRISMA, and if not, that's okay but should be stated either way.	Thank you. We have added the following statement to the Methods section: *The review followed the PRISMA guidelines.*
19	1	Since there are new adaptations developed in HPACT with the deployment of Mobile Medical Units (MMUs), it may be worth mentioning they are new so new no research has been conducted on them although they hold potential as new ways to provide primary care in communities.	Thank you. We have added the following text to the Future Research section of the discussion: *Additionally, there have also been several adaptations to HPACT, including the use of Mobile Medical Units, which may increase access to care for underserved communities. Future studies should explore the impact of these HPACT adaptations.*
20	1	In the Implications for VA Policy and Practice, it's not clear how the findings are relevant to MISSION Act and of course, there is a lot of concern/scrutiny around community care right now in VA but not sure the relation or implications of the findings that speak to that.	Thank you. We agree with this comment and have removed the sentence about the Mission Act in this report.
21	1	The Conclusions paragraph seemed to state findings with a bit more confidence then the evidence warrants, e.g., cost savings. There is also some redundancy so suggest revising the Conclusions to succinctly state the conclusions accurately.	Thank you. We revised the Conclusion per this comment.
22	2	The report is thorough, well-written and objective. The team working on this needs to be commended as they clearly met and exceeded the goals of the project.	Thank you.
23	2	My only concern (less specific to this review as to the literature overall) is that less discernible factors such as degree of treatment readiness and treatment engagement, history of stigmatization, contributing impacts of other social drivers of health and co-occurring conditions which may manifest in whether the veteran is new patient or already established patient when being compared, all likely impact the primary outcomes of these studies and, when not measured, also introduce inherent biases to any comparison group included in this research review. While this is implied as a bias, I feel it needs to be more explicitly stated as an inherent reason why some conclusions can not be drawn. Additionally, the ethical considerations inherent in this work do introduce challenges to truly having an matched comparator group or being able to manage an intervention objectively. These are upfront limitations to all of this research are addressed to some degree in the limitations section on page 37 - however, I feel could be better acknowledged and/or explicitly noted as the basis for	Thank you and we agree. We edited the text to call out the challenges noted by the reviewer. Examples of our edits are below. *Factors such as degree of treatment readiness and treatment engagement, history of stigmatization, contributing impacts of other social drivers of health and co-occurring conditions can impact Veterans' engagement in primary care. Because of this, it may be challenging to draw conclusion from the current evidence without the need for several caveats to these results*.

Comment Number	Reviewer Number	Reviewer Comment	Response
		no conclusions being drawn as opposed to negative results (if and when that was the case).	
24	2	The specific description of reference 21 (Gundlapalli et al on emergency department utilization) was difficult to follow in the text. Albeit I had challenges when it first was published as well and had to meet with the authors to explain it better to me but some simplification/clarity on outcomes and subgroup qualifiers may help with readability.	Thank you and we agree. We have edited the description of ref 21 for clarity.
25	2	There are some typos on page 21 (line 59) and page 5 (lines 55 and 58).	Thank you. We have fixed these typos.
26	3	I appreciate this comprehensive evidence synthesis report regarding the impacts of engaging housing insecure Veterans in primary care - housing is so often considered the key outcome in VA's homeless program, the report nicely highlights the importance of primary care in VA's whole health approach to vulnerable Veterans, and makes clear the value of strengthening linkages between VA's homeless programs and medical services. Overall, I found the report to be well-written and comprehensive. I appreciated the comment in the discussion about the need to move towards consistent language to describe the population named as housing insecure in the report.	Thank you.
27	3	I did think the authors made the assumption that the readers had some fundamental knowledge of the topic at play (probably not an unreasonable assumption), and that some of the assumed knowledge might benefit from being described in the background introduction. More specifically, a variety of outcomes are discussed throughout the report, including service use (inpatient and outpatient), housing, food insecurity, experience / satisfaction, community integration - a conceptual framework that shows how these domains all fit together, and why they are relevant, would have anchored the report for the reader from the get go. In addition, there is a significant focus on comparing PACT versus HPACT - a worthy comparison. However, though there is a relatively simple description of HPACT, more details about HPACT as a model would be helpful.	Thank you. We revised the Introduction to note the relationship between housing and health / social outcomes. *Conceptually, housing security and health are interrelated. Housing insecurity may lead to increased risk of poor social and health outcomes due to stress, poor access to clean water and proper hygiene, and exposure to the elements. Simultaneously, poor health, financial difficulties, untreated substance misuse can lead to housing insecurity.* The Introduction now includes more details about HPACT. *HPACT functions in a similar way to traditional PACT but incorporate additional team members such as social workers, substance use counselors, and homeless program staff who offer services that can help lead to permanent supportive housing. In addition, HPACT may also include walk-in clinics or*

Comment Number	Reviewer Number	Reviewer Comment	Response
			extended hours, integrated services such mental health services, continuity of care across the VA and community agencies through team-based care, and staff with specialized training in homeless care.
28	3	The title of the report refers more broadly to engaging housing insecure Veterans in VHA health care - but, the focus is primary care. Might it be helpful to make that clear in the title?	Thank you. We have updated the title to state: *Engaging Veterans Experiencing Homelessness in Primary Care: A Systematic Review*
29	3	KQ1 is interested in that it is specific to a range of VA homeless program participants - I believe that the list of programs of interest is nearly all encompassing of homeless programs. Are any left out? It might be helpful to have clarity that the KQ1 is focused on Veterans engaged in VA homeless services, across the breadth of services, and then listing out the individual programs included	Thank you. We edited Key Question 1 for clarity. *Among Veterans enrolled in VA programs for those experiencing housing insecurity[a], what is the effect of PACT and/or HPACT on Veteran-reported clinical, health service use and housing outcomes?* Footnote [a] states the specific VA homeless programs.
30	3	Throughout the report, one of the more salient findings is that primary care engagement decreases hospitalizations - is this all hospitalizations? Med/surg hospitalizations? Psychiatry hospitalizations? Perhaps this distinction isn't made in the literature but it would be helpful to define hospitalizations for the reader	Thank you. In the results section we note when findings are related to a cause specific hospitalization or all cause hospitalization. In addition, we revised the discussion to note that some studies did not clearly report whether acute care utilization was for a specific cause or represented all causes. *The studies did not consistently indicate the reason for hospitalization.*
31	3	A temporal change in primary care use is described at several points in the report, specifically with regards to Veterans in homeless programs initially perhaps using primary care in higher rates at first, and then this decreasing, which is consistent with my experience. It would be helpful for the authors to speculate why this may be happening, and also to talk about the potential relevance of temporal trends in primary care use as it isn't intuitive that this is aligned with either of the KQs	Thank you. We edited the text in the discussion section to address this point: *Although the study did not provide an explanation for this result, this finding may point to a high number of unmet health care needs in the population. These needs may be addressed during the initial primary care visits and then stabilize over time.*
32	3	At several points, the report discusses "appropriate ED utilization" - on page 20, line 34, there is no definition of appropriateness that I could find. There was a comment about substance abuse related visits but unclear how that relates to appropriateness. Later on, on page 26, line 54, the	Thank you. The studies reported different measures of appropriate emergency department use or alternatively inappropriate emergency department use. Sometimes studies used well known measures

Comment Number	Reviewer Number	Reviewer Comment	Response
		authors refer to ACSC conditions, which is how I thought this would be defined from the get go. Then, on page 27, line 23, appropriate comes up again but I'm not sure if the reference is still to ACSC conditions, or some other definition	and other times studies did not clearly report the measure used to define appropriate use. In the results section we describe how each study defines appropriate or inappropriate emergency use.
33	3	Page 25, line 7, talks about physician primary care encounters. At first pass, I thought the reference was physicians versus physician extenders (e.g., NPs, PAs) but the rest of the sentence made it sound like the term physician was a term used to encompass all prescribing providers as opposed to nurse visits	Thank you. This study reported data from primary care provider (PCP)-specific visits and PCP and nursing visits combined. We have updated the text for clarification: *One NRCS found significantly more primary care physician encounters…* *The overall number of combined primary care physician and nursing visits …*
34	3	At several points, the notion of a "general internal medicine" comparison group is raised (page 25, line 24; page 28, line 57; page 29, line 29) - is this prior to PACT implementation? How does general internal medicine differ from HPACT.	Thank you. Studies used different terms to describe primary care. For clarity we have added the specification of “non-tailored” general internal medicine throughout.
35	3	There is a sense in the executive summary as well as implications of the main report that with the one-stop shop model of HPACT, with embedded mental health, less specialty MH care was needed than in traditional PACT. But later, page 30, line 59, it sounds like psychiatry/psychology visit rates were similar and really the HPACT patients had fewer group therapy visits (these can account for an enormous amount of visits and might explain the finding). It seems that the conclusion from the way it is written is that actually it's not that HPACT has embedded mental health, but rather that in HPACT Veterans are not getting referred to group therapy. You can skew the valence of this in several ways, depending on how you want to think about it.	Thank you. We agree that there are several possible interpretations of why Veterans in HPACT have fewer mental health care. We revised the text to comment on the proposed alternative explanation. *One explanation for reduced mental health and substance use care is that homeless-tailored primary care includes these services as part of their model of care. However, an alternative explanation is that those in HPACT may not receive the same referrals for services as non-HPACT Veterans.*
36	3	The report talks about satisfaction / experience. But, in the discussion section, the notion of "feeling engaged in care" is seemingly made equivalent to satisfaction / experience. I would just check that parallel nomenclature is used throughout.	Thank you. We revised the text for consistency and the sentence now states: *In addition, Veterans enrolled in a homeless-tailored primary care felt more “satisfied” or had more positive experiences with their care.*
37	5	Thank you for the opportunity to review this manuscript. Minor comments: Page 10, line 45 - consider adding emphasis on HPACT model reducing barriers to care for homeless veterans while incorporating additional team members	Thank you, we have added the following text to the background section to further describe HPACT:

Comment Number	Reviewer Number	Reviewer Comment	Response
			HPACT functions in a similar way to traditional PACT but incorporate additional team members such as social workers, substance use counselors, and homeless program staff who offer services that can help lead to permanent supportive housing. In addition, HPACT may also include walk-in clinics or extended hours, integrated services such mental health services, continuity of care across the VA and community agencies through team-based care, and staff with specialized training in homeless care.
38	5	Page 21, line 59 - "HAPCT" should be HPACT.	Thank you. We have corrected this typo.
39	5	Page 36, line 7 - "...associated with less use of acute..." acute what? (care?)	Thank you. We have added “care” to the end of this sentence.
40	5	Page 38, lines 20-26 - For awareness, there is a question in the formal HOMES assessment (intake form, entry for VA homeless programs) asking about healthcare and if referral for care needed.	Thank you. We have updated this sentence to include this information: *VA decision makers should consider developing a formal protocol that facilitates transitions between homeless program staff and primary care staff. Any formal protocol should be evaluated using rigorous implementation science methods.*
41	7	This paper did a nice job describing the literature related to primary care use among Veterans experiencing housing instability. Although I noted that I am not aware of existing literature that looks specifically at this issue, it is important to note that much of the published literature related to health services use among Veterans with experience of housing instability does include primary care (and other services) utilization as correlates of a variety of outcomes including housing, mortality, etc.	Thank you for this comment. We edited the text to note the challenges with examining the association of receiving primary care on outcomes, and that many studies among Veterans experiencing housing insecurity include primary care use as a covariate rather than the primary exposure of focus. We also note in the Limitations that we may have missed studies that only included primary care as a covariate in a regression model. *Related, we may have missed some studies where the effect of primary care for Veterans experiencing housing insecurity was not the aim of the study and instead the study only used primary care as a covariate in a regression model.*
42	7	Throughout: This is simply semantics, but I would recommend a term other than “housing insecure Veterans” for several reasons: (1) person-first language is preferred (i.e., Veterans experiencing housing insecurity), and (2) placing “housing” as a unit modifier is sometimes confusing as it is also a verb. In the discussion, the authors mention inconsistent language	Thank you. We have updated the terminology in the text to “Veterans experiencing housing insecurity” throughout.

Comment Number	Reviewer Number	Reviewer Comment	Response
		across the papers reviewed for this report; however, the authors have chosen an additional way to refer to Veterans experiencing housing instability. Perhaps pick one of the options that occurs frequently and use that consistently throughout. In addition, it may be useful to address this issue up front as I had several questions about who this population really was as I read through the background, results, etc. (including on page 10, line 22).	
43	7	In the Key Findings (page 1) and Background (page 10) sections, the authors hint at Housing First, which prioritizes housing, and then states that quality health care for Veterans experiencing housing instability is also warranted. This seems unnecessary and unnuanced. Part of Housing First is to make available all of these needed services but not necessarily require them. I think that including these broad statements, and briefly focusing on permanent supportive housing (including on page 35, line 53), confuses the issue a bit.	Thank you and we agree. We revised the text throughout to reflect this comment.
44	7	The Background (page 10) seems a bit naive. Again, I don't think it's accurate to state that the VA was "guided by Housing First" to invest in homeless services. Rather, these investments were guided by leadership declaring homelessness a priority and specific enhancements to VA homeless services were influenced by Housing First. I think that the authors can mention the reduction in homelessness as reported in the Annual Homeless Assessment Report to Congress, but we do not have the data make a causal link; there is very likely an association, but we cannot say with total confidence.	Thank you. We have edited the Background to reflect this and previous comment. We now specifically note that VA investments in homeless services may have contributed to a decrease in the number of Veterans experiencing homelessness.
45	7	Page 1, line 11: Define "at first." Is this after becoming homeless or being identified as homeless or following recent/new engagement in primary care?	Thank you. We have edited this text, which now states: *Among Veterans experiencing housing insecurity, primary care visits may be high after initial engagement in primary care and then decrease over time (low confidence).*
46	7	Page 2, line 39: Adding assessment items to HOMES may actually require quite a bit of burden.	Thank you. We have removed this part of the sentence.
47	7	Page 11, sentence beginning on line 9: I think that a word is missing on line 13 ("Veteran-reported" what?).	Thank you. This was referencing Veteran-reported outcomes. We revised the text for clarity.
48	7	Page 16, line 20: What is the difference between services to address social determinants of health and social services?	Thank you. We edited the sentence for clarity. *Homeless-tailored primary care was labeled differently in the literature (eg, HPACT, homeless oriented primary care, and integrated primary care)*

Comment Number	Reviewer Number	Reviewer Comment	Response
			but typically consisted of a combination of physical health care, mental health care, substance use treatment, and social services for Veterans experiencing housing insecurity.
49	7	Page 17, line 39: Studies evaluate the Veterans or their care?	Thank you. We have specified "care" in this sentence.
50	7	Page 22, line 35: I'm not sure I understand this statement. Does this mean that there was not a difference in the amount of utilization? Or Veterans' utilization of regular primary care vs tailored primary was not associated with improvement in outcomes? Maybe there is a word missing? Similar issue on page 35, lines35-36.	Thank you. The referenced statements note the available studies provided insufficient evidence (meaning we could not make a conclusion) for the specified outcomes. We revised the text for clarity.
51	7	Page 35, line 6: What was the comparator?	Thank you. The text now states: *We identified 4 studies that examined the effect of receiving primary care compared with not receiving primary care…*
52	7	Page 35, line 17: In any primary care? Tailored or otherwise?	Thank you. We have specified "any" primary care as this included, but was not specific to, tailored care.