

Health Equity: Permanent Supportive Housing with Housing First

Summary Evidence Tables - Systematic Economic Review

This table outlines information from the studies included in the Community Guide economic review of Permanent Supportive Housing with Housing First. It details study design and economic analysis, population and intervention characteristics, and economic outcomes considered in this review. Complete references for each study can be found in the Included Studies section of the [review summary](#). [URL]

Abbreviations Used in This Document:

- Economic outcomes:
 - DALY: disability-adjusted life year
 - QALY: quality-adjusted life year
 - ROI: return on investment
- Study design:
 - RCT: randomized controlled trial
- Measurement terms:
 - DiD: difference in difference
- Other terms:
 - ACT: assertive community treatment
 - ED: emergency department
 - EMR: electronic medical record
 - EMS: emergency medical service
 - HUD: Housing and Urban Development
 - ICM: intensive case management
 - ICU: intensive care unit
 - NR: not reported
 - PCP: primary care provider
 - QoL: quality of life
 - SSI: supplemental security income
 - SUD: substance use disorder
 - VA: Veterans Administration

Notes:

Quality of economic estimates – Studies are assessed to be of good, fair, or limited quality. This valuation is based on two domains: Quality of Capture [Read more >>](#), and Quality of Measurement. [Read more >>](#)

Race/ethnicity of the study population: The Community Guide only summarizes race/ethnicity for studies conducted in the United States.

Study Information	Study and Population Characteristics	Program Name Intervention & Comparison	Effectiveness Findings	Intervention Cost	Societal Costs Averted Productivity Gained	Economic Summary Measure
<p>Author (Year): Basu et al. (2012)</p> <p>Design: RCT</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: NIMH</p> <p>Monetary Conversions: Index year assumed 2005 in U.S. dollars</p>	<p>Location: Chicago, Illinois, U.S.</p> <p>Eligibility: Persons selected at discharge from 2 Chicago hospitals who were without stable housing for 30 days or more and had one or more of 15 chronic medical illnesses; 18 years and older; eligibility verified by hospital social worker. Those lacking stable housing for more than 24 months classed as chronically homeless.</p> <p>Sample Size: Intervention: 201 Control: 206 Subgroup analysis done for HIV and chronically homeless.</p> <p>Population Characteristics: Mean Age: 47 Females: 26%</p>	<p>Program Name: None</p> <p>Intervention: Housing for those who need not be 'chronically homeless'. Based on Housing First model with intensive case management. Selected persons provided interim housing followed by stable housing. Intensive case management by on-site social worker in interim housing, hospital, and stable housing.</p> <p>Comparison: Eligible persons at discharge assigned to control were referred to hospital social worker who provided discharge planning with no further relationship after discharge. Analysis used matching by propensity score.</p>	<p>Stable Housing Days: In annualized terms, intervention group had 62 more days of stable housing and 12 more days in respite housing than control.</p> <p>Data Source: Follow-up interviews at 1, 3, 6, 9, 12, and 18 months</p> <p>Measure Type: DiD</p>	<p>Intervention Cost: Annualized per person \$3,337 made up of \$3,154 for housing and \$183 for case management.</p> <p>For those who were chronically homeless, housing cost was \$3,030 and case management was \$161.</p> <p>For persons living with HIV, housing cost was \$4,022 and case management was \$199.</p> <p>Data Source: Housing cost from Spellman et al. (2010) and case management from study records and unit cost of encounters.</p> <p>Components Included in Intervention Cost: Housing subsidies, case management for healthcare</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p>Total Cost: Total annual cost reduced by \$9,644 for all, by \$13,004 for those who were chronically homeless, and by \$10,843 for those with HIV.</p> <p>Costs by Component: <u>Healthcare cost</u> reduced \$8,593 for all, by \$12,519 for those who were chronically homeless, and by \$9,408 for those with HIV. <u>Emergency housing</u> included in intervention cost and not reported separately. <u>Judicial costs</u> reduced \$1,051 for all, by \$485 for those who were chronically homeless, and by \$1,435 for those with HIV. <u>Welfare</u> not reported <u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, emergency housing, judicial</p> <p>Components Included in Healthcare Cost:</p>	<p>Benefit-Cost Ratio: All persons: \$9,644/\$3,337=2.89 Chronic homelessness: \$13,004/\$3,191=4.08 Persons with HIV: \$10,843/\$4,221=2.57</p> <p>Quality of Estimate: Fair</p> <p>Limitations: Includes those not chronically homeless</p> <p>Notes: Persons at discharge from hospitals</p>

	<p>Less than high school: 48% Race: African American 81%, White 7%, Hispanic 8%, Other 4%. Veteran 18% Medicaid 37% Medicare 8% Diseases or Disorders: HIV 37%, Depression 40%, Anxiety disorder 40%.</p> <p>Time Horizon: Intervention: September 2003 to December 2007 Intervention length: 18 months</p>				<p>Physical and mental health/SUD. Inpatient, ED, outpatient.</p> <p>Source and Valuation: EMR and healthcare utilization from person reports and hospital records and unit prices from providers. Judicial utilization derived from public records and housing utilization from housing agencies.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Fair</p> <p>Quality of Measurement: Fair</p>	
<p>Author (Year): Byrne et al. (2014)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Healthcare cost</p> <p>Funding Source: NR</p> <p>Monetary Conversions: Index year assumed 2010 in U.S. dollars</p>	<p>Location: National, U.S.</p> <p>Eligibility: Persons selected from among veterans who were placed in HUD-VASH any time in fiscal year 2010 and remained stably housed for 2 years. Persons were those with mental health or substance use disorders.</p>	<p>Program Name: Department of Housing and Urban Development-VA Supportive Housing (HUD-VASH)</p> <p>Intervention: HUD-VASH, permanent housing with supportive services. No other details reported; presumably, permanent housing with healthcare services.</p> <p>Comparison:</p>	<p>No effectiveness outcomes of interest reported.</p>	<p>Intervention cost: No intervention cost reported.</p>	<p>Total Cost: Total reduction over 2 years was \$5,758.</p> <p>Costs by Component: <u>Healthcare cost</u> reduced \$5,758 over 2 years. <u>Emergency housing</u> not reported. <u>Judicial costs</u> not reported <u>Welfare</u> not reported <u>Employment</u> not reported</p>	<p>No summary measures reported</p>

	<p>Sample Size: Intervention size not reported Control size not reported</p> <p>Population Characteristics: No details reported</p> <p>Time Horizon: Existing program. Analysis based on 1-year pre and 2-year post data, fiscal years 2010 through 2012. Intervention length: 18 months</p>	<p>Veterans who received assistance from other VA homelessness programs. Propensity score matched.</p>			<p>Components Included in Total Costs Averted: Healthcare</p> <p>Components Included in Healthcare Cost: Physical and behavioral. Inpatient, ED, outpatient.</p> <p>Source and Valuation: VA decision support systems</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Culhane et al. (2002)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: State of New York and New York City</p> <p>Monetary Conversions:</p>	<p>Location: New York, New York, U.S.</p> <p>Eligibility: Persons with chronic homelessness and severe mental illness placed in NY/NY housing or deemed eligible and placed in community-based housing from 1989 through 1997. Identified through</p>	<p>Program Name: New York/New York</p> <p>Intervention: Housing and psychosocial services in 2 configurations. Supportive Housing: single room scattered housing with site-based or community-based support with separation of housing and treatment. Community Residence</p>	<p>Measured at 24 months</p> <p>Stable Housing Days: Days in shelters reduced 41 days per year. For NY/NY program Lipton et al. (2000) found that after one, two, and five years, 75 percent, 64 percent, and 50 percent of the almost 3,000 persons placed had remained in</p>	<p>Intervention Cost: \$65.8 million per year for 3,615 housing units.</p> <p>Data Source: Administrative records and reports.</p> <p>Components Included in Intervention Cost: Housing construction debt, administration, and support services costs.</p> <p>Quality of Capture: Good</p>	<p>Total Cost: Annual total cost offsets were \$58.9 million.</p> <p>Costs by Component: <u>Healthcare cost</u> reduced \$8,770 per person per year of which \$2,608 was for physical and \$6,162 was for mental health/SUD.</p> <p><u>Emergency housing</u> reduced by 82.9 days per person over 2 years (\$2,819 per year).</p> <p><u>Judicial costs</u> NY State incarcerations reduced by 7.9 days over 2</p>	<p>Benefit-Cost Ratio: \$58.9/\$65.8 = 0.89</p> <p>Quality of Estimate: Good</p>

<p>Index year assumed 1999 in U.S. dollars</p>	<p>administrative records.</p> <p>Sample Size: Intervention: 4679 persons and 3615 housing units Control: Matched to each program for which averted costs are computed.</p> <p>Population Characteristics: None reported</p> <p>Time Horizon: Existing program. 2-year pre and 2-year post analysis. Analyzed those accepted into housing program from 1989 to 1997.</p>	<p>Facilities: group residences with housing and mandated treatment integrated. Both have access to physical, mental health and substance use treatment.</p> <p>Comparison: Different comparison groups used for each of 7 service providers/ systems.</p>	<p>the program across all types of NY/NY housing configurations.</p> <p>Data Source: Housing agency records and Lipton et al (2000).</p> <p>Measure Type: DiD</p>	<p>Quality of Measurement: Good</p>	<p>years (\$312 per year). NY City incarcerations reduced by 3.8 days over 2 years (\$245 per year).</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Emergency housing, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. Inpatient, ED, outpatient, ambulance.</p> <p>Source and Valuation: Administrative databases from each agency for utilization along with per unit price.</p> <p>Measure Type: Post only intervention versus control</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Flaming et al. (2009)</p>	<p>Location: Los Angeles, California, U.S.</p>	<p>Program Name: Skid Row Housing Trust (SRHT)</p>	<p>Stable Housing Days: 17% leave housing within 6</p>	<p>Intervention cost: Total is \$1,102 per unit per month.</p>	<p>Total Cost: Total offsets \$2,291 per unit per month.</p>	<p>Benefit-Cost Ratio: All persons \$2,291/\$1,102 = 2.08</p>

<p>Design: Retrospective with matched control</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Conrad Hilton</p> <p>Monetary Conversions: Index year assumed 2008 in U.S. dollars</p>	<p>Eligibility: Persons who were current and former residents in supportive housing provided by Skid Row Housing Trust (SRHT) with history of mental illness and substance abuse who received housing and comprehensive case management services.</p> <p>Sample Size: Intervention: 279 Control: 279 Matched from database of 9186 persons who were homeless during the period.</p> <p>Population Characteristics: Age: 46 or older 70%; 30-45 25%; 18-29 5% Females: 30% Race: African American 65%, White 15%, Hispanic 10%, Other 10%. Veterans 12% Unemployed 78% Diseases or Disorders: Substance use</p>	<p>Supportive Permanent Housing</p> <p>Intervention Permanent housing first with support services. Two group housing units have on-site primary medical care and psychiatric services. Other units receive care from community-based services. Both have case managers who meet regularly with residents, make progress assessments, coordinate care, offer life-skills training, group interest activities, and socialization.</p> <p>Subgroup analysis for persons with: mental health disorders (Group A), SUD (Group B), HIV (Group C)</p> <p>Comparison: Individuals who are homeless and not receiving housing first and support</p>	<p>months, 26% leave housing after 6 to 11 months. Half of departures due to unfavorable life events.</p>	<p>By Subgroup: Group A \$1,096 Group B \$1,117 Group C \$1,124</p> <p>Data Source: Agency and program records</p> <p>Components Included in Intervention Cost: Rent subsidies plus administrative plus capital costs.</p> <p>Quality of Capture: Fair</p> <p>Quality of Measurement: Good</p>	<p>By Subgroup: Group A Reduced \$2,522 Group B Reduced \$2,420 Group C Reduced \$3,125</p> <p>Costs by Component for all persons: <u>Healthcare cost</u> reduced \$2,082 per person per month of which \$1,885 was for physical and \$197 was for mental health.</p> <p><u>Emergency housing Cost</u> is in total and not reported separately.</p> <p><u>Judicial costs</u> Reduced by \$120 per person per month.</p> <p><u>Welfare</u> Reduced by \$89 per person per month.</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Emergency housing, Judicial, Welfare</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD.</p>	<p>By Subgroup: Group A 2.30 Group B 2.17 Group C 2.78</p> <p>Quality of Estimate: Fair</p> <p>Limitations: Post only comparison with control</p>
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	<p>70%, Mental illness 80%, HIV 13%. Jail or probation 38%</p> <p>Time Horizon: Existing program. Cost information for control available for 22 months (Jan 2006 to Oct 2007) and for 42 months for intervention (July 2005 to Dec 2008).</p>				<p>Inpatient, ED, outpatient, ambulance for physical.</p> <p>Source and Valuation: Administrative databases from multiple agencies and private hospitals and clinics. Administrative data from Sheriff and social services department</p> <p>Measure Type: Post only intervention versus control</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Flaming et al. (2013)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Conrad Hilton</p> <p>Monetary Conversions: Index year assumed 2012 in U.S. dollars</p>	<p>Location: Los Angeles, California, U.S.</p> <p>Eligibility: High-need, high-cost persons who are homeless and triaged from hospitals and clinics. Must be in 10th decile of need or resource use. Must be eligible for Section 8 vouchers and have some income (usually Supplemental Security Income or employment</p>	<p>Program Name: 10th Decile</p> <p>Intervention Objective is to move 175 high-need, high-cost persons who are homeless into housing with support. Navigator accepts persons directly triaged based on need from hospital and assists with temporary housing and application. Six organizations provide housing and services. Referrals came</p>	<p>No effectiveness outcomes of interest reported</p>	<p>Intervention cost: Total per person annual is \$29,609 composed of: capital cost \$9,750; operating costs \$4,700; one-time costs \$15,159.</p> <p>Data Source: Agency and program records</p> <p>Components Included in Intervention Cost: Capital cost of units, rent, operating costs for support, navigator training, hospital triage, screening, navigator salary, transport, temporary</p>	<p>Total Cost: Annual total cost offsets were \$46,895 per person per year.</p> <p>Costs by Component: <u>Healthcare cost</u> reduced \$42,488 per person per year. <u>Emergency housing</u> Cost is in total and not reported separately. <u>Judicial costs</u> Reduced by \$2,181 per person per year. <u>Welfare</u> Reduced by \$2,225 per person per year.</p>	<p>Benefit-Cost Ratio: \$46,895/\$29,609 = 1.58</p> <p>Quality of Estimate: Good</p> <p>Limitations: Artificial groups created for analysis of costs</p>

	<p>income). Triaged from 13 area hospitals based on need by navigator. Disqualifications are undocumented immigrant; on parole for violent crime; convicted for arson; operate meth lab; sex-offender; disability prevents independent living.</p> <p>Sample Size: Intervention: 36 who obtained housing and supportive services. Control: Proxies were drawn for both the intervention group and for comparison from two databases of persons with cost information: 9186 who were homeless and 1007 who were housed in all housing first plus supportive services programs.</p>	<p>from 13 area hospitals. Immediate services provided for temporary housing, and primary and behavioral care, substance abuse care, and applications for housing. Navigators continue engagement with persons after placement. Often in scattered sites, the navigator is sole provider of support services.</p> <p>Comparison: Individuals who were homeless and not receiving housing first and support</p>		<p>housing, welfare enrollment, move-in cost.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial, Welfare</p> <p>Components Included in Healthcare Cost: Physical and mental health. ED and inpatient.</p> <p>Source and Valuation: County-wide administrative records of encounters from multiple agencies and per unit prices.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
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	<p>Population Characteristics: Mean Age: 48 Females: 29% Race: African American 43%, White 23%, Hispanic 15%, Other 7%. Substance use 53% Jail or probation 29% Chronic illness 13%</p> <p>Time Horizon: Existing program. First screened person in the analysis is from April 2011 and last January 2013.</p>					
<p>Author (Year): Gilmer et al. (2009)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Healthcare cost</p> <p>Funding Source: State grant for the program. NIMH for the study.</p> <p>Monetary Conversions:</p>	<p>Location: San Diego, California, U.S.</p> <p>Eligibility: Intervention group identified from San Diego's database for mental health service encounters from July 1, 2002 through June 30, 2005. Recruited from shelters, found by outreach team, and referred by community</p>	<p>Program Name: Reaching Out and Engaging to Achieve Consumer Health (REACH)</p> <p>Intervention Project funded to address impact of new sports stadium on persons who are homeless and have a severe mental illness. Housing in single occupancy furnished hotel room; residential treatment facility; scattered apartments.</p>	<p>No effectiveness outcomes of interest reported</p>	<p>Intervention cost: Not reported. Some components of intervention may be included in change in healthcare cost.</p>	<p>Total Cost: Increased by \$417 per person over 2 years period.</p> <p>Costs by Component: <u>Healthcare cost</u> Increased by \$987 per person over 2 years period. Composed of mental health costs increased case management by \$6,403; outpatient increased by \$687; inpatient and ED decreased by \$6,103.</p> <p><u>Emergency housing</u> not reported.</p>	<p>No summary measures reported</p>

<p>Index year assumed 2004 in U.S. dollars</p>	<p>mental health programs.</p> <p>Sample Size: Intervention: 177 Control: 161</p> <p>Population Characteristics: Mean Age: 42 Females: 60% Race: African American 22%, White 60%, Hispanic 9%, Other 8%. Diseases or Disorders: Schizophrenia 53%, bipolar disorder 16%, major depressive disorder 21%, other psychotic 4%, other 6%.</p> <p>Time Horizon: Selected from service encounters with mental health agencies from July 1, 2002 through June 30, 2005.</p>	<p>Generally, first housed in treatment facility while SSI, VA benefits, HUD section 8 benefits processed. Clients contribute 30-40% for rent and receive \$100 for food monthly. No sobriety requirement but must meet bi-weekly with case manager.</p> <p>Comparison: Matched clients who were homeless with serious mental illness who had demographic and clinical characteristics similar to those of REACH clients. Note clear criterion of 'homeless'.</p>			<p><u>Judicial costs</u> Mental health services provided in jails decreased by \$570 per person over 2 years.</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Judicial</p> <p>Components Included in Healthcare Cost: Mental health only. Case management, outpatient, inpatient and ED.</p> <p>Source and Valuation: Encounters database for mental health with price per unit from program-specific cost reports.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Fair</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Gilmer et al. (2010)</p> <p>Design:</p>	<p>Location: San Diego, California, U.S.</p> <p>Eligibility:</p>	<p>Program Name: Full Service Partnership (FSP)</p> <p>Intervention:</p>	<p>Stable Housing Days: Days spent homeless decreased from 191 to 62 days.</p>	<p>Intervention cost: Cost per person per year \$3,180.</p> <p>Data Source:</p>	<p>Total Cost: Annual total cost offsets were \$1,064 per person per year.</p> <p>Costs by Component:</p>	<p>Benefit-Cost Ratio: \$1,064/\$3,180 = 0.33</p> <p>Quality of Estimate: Fair</p>

<p>Retrospective with matched control</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: San Diego County</p> <p>Monetary Conversions: Index year assumed 2007 in U.S. dollars</p>	<p>Persons recruited by referrals and outreach from psychiatric hospitals, emergency departments, other mental health programs, county agencies, Institutes of Mental Disease, jails, shelters, rescue missions, and the street.</p> <p>Sample Size: Intervention: 209 Control: 154</p> <p>Population Characteristics: Mean Age: 44 Females: 37% Race: African American 26%, White 61%, Hispanic 9%, Other 4%. Diseases or Disorders: Schizophrenia 60%, bipolar disorder 27%, major depressive disorder 13%.</p> <p>Time Horizon: Existing program. Identified intervention group from FSP database from October 1, 2006</p>	<p>Treatment not mandatory but meeting treatment team monthly is required. Assertive community treatment (ACT) teams of 1 per 100 clients include: psychiatrists, nurses, mental health professionals, employment specialists, peer specialists, and substance-abuse specialists. Services: At home, work, or client chosen setting for medication management, vocational services, substance abuse services, and other services to increase functioning within community. 24-7 crisis center.</p> <p>Comparison: Propensity matched persons who were homeless and had a severe mental illness with people who had similar demographics and clinical characteristics. Note the homeless criterion is clearly stated here.</p>	<p>Stable housing increased from 74 days to 147 days per year.</p> <p>QoL improved for intervention (housing, safety, daily activities, health, social and family relations).</p> <p>Source: Quarterly progress reports from case encounters</p> <p>Measure Type: Pre to post for intervention only</p>	<p>Administrative records of providers.</p> <p>Components Included in Intervention Cost: Rent minus client contributions; upkeep and maintenance; phone and utilities; cost of support services.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Fair</p>	<p><u>Healthcare cost</u> Total healthcare cost increased \$577 per person per year made up of increase in outpatient by \$9,180, decrease in inpatient by \$6,882 and decrease in ED by \$1,721.</p> <p><u>Emergency housing</u> not reported</p> <p><u>Judicial costs</u> Mental health services provided in jails reduced by \$1,641 per person per year</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health. Outpatient, inpatient, and ED.</p> <p>Source and Valuation: Healthcare utilization from encounters administrative data and price per unit from cost reports from contract providers. Judicial</p>
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	to December 31, 2007.				<p>encounters from jail records.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Fair</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Gilmer et al. (2014)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Healthcare cost</p> <p>Funding Source: American Recovery and Reinvestment Act of 2009 and Agency for Healthcare Research and Quality.</p> <p>Monetary Conversions: Index year assumed 2007 in U.S. dollars</p>	<p>Location: Statewide, California, U.S.</p> <p>Eligibility: Persons who participated in FSP program. FSP targets persons who are homeless and have severe mental illness.</p> <p>Sample Size: Intervention: 10231 Control: 10231</p> <p>Population Characteristics: Mean Age: 42 Females: 46% Race: African American 10%, White 31%, Hispanic 10%, Other and unclassified 49%. Medicaid 58% Diseases or Disorders: Substance use</p>	<p>Program Name: Full Service Partnership (FSP)</p> <p>Intervention FSP was delivered in multiple locations. Based on the survey of fidelity to Housing First with Support model (Gilmer 2013), most of the programs included in this study showed greater fidelity to service array and team structure than to housing and service philosophy. In other words, the services and staffing offered were like Housing First with Support but the philosophy of Housing First versus Treatment First was not followed in many of the programs.</p>	<p>No effectiveness outcomes of interest reported</p>	<p>Intervention cost: Not reported</p>	<p>Total Cost: Total cost increased by \$12,056 per person per year substantially composed of increase in mental health outpatient of \$11,752.</p> <p>Costs by Component: <u>Healthcare cost</u> increased by \$12,056 per person per year substantially composed of increase in mental health outpatient of \$11,752.</p> <p><u>Emergency housing</u> not reported</p> <p><u>Judicial costs</u> not reported</p> <p><u>Welfare</u> Not reported</p> <p><u>Employment</u> Not reported</p> <p>Components Included in Total Costs Averted: Healthcare</p>	<p>No summary economic measures reported</p> <p>Limitations: Some concern about the choice of matched controls who may not be chronically homeless.</p>

	<p>41%, Schizophrenia 62%, bipolar disorder 20%, major depressive disorder 18%.</p> <p>Time Horizon: Existing program. Intervention group selected from FSP participants between January 1, 2005, and June 30, 2009.</p>	<p>FSP program was put in place after the Mental Health Services Act of 2004 in California; has many features similar to the Housing First intervention. However, many FSP providers in study did require housing readiness (e.g. sobriety or treatment). So, the intervention in this study is a mixed bag of Housing First and Treatment First.</p> <p>Comparison: Persons with severe mental illness matched to FSP group. Unclear if chronic homelessness was a requirement.</p>			<p>Components Included in Healthcare Cost: Physical and mental health. Inpatient, outpatient mental health, crisis centers and residential treatment.</p> <p>Source and Valuation: Multiple administrative data from agencies and claims data linked together</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Gilmer et al. (2016)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Healthcare cost</p> <p>Funding Source: Agency for Healthcare</p>	<p>Location: Statewide, California, U.S.</p> <p>Eligibility: Persons who participated in PSH program. PSH targets homeless with severe mental illness with Housing First with Support type intervention.</p>	<p>Program Name: Permanent Supportive Housing (PSH) (was referred to as Full-service Partnership, FSP, in Gilmer 2014)</p> <p>Intervention PSH was implemented in multiple locations. Based on the survey of fidelity to</p>	No effectiveness outcomes of interest reported	Intervention cost: Not reported	<p>Total Cost: Total cost increased \$13,337 per person per year.</p> <p>Costs by Component: <u>Healthcare cost</u> increased \$13,337 per person per year. The increase substantially due to outpatient mental health by \$10,979.</p>	<p>No summary economic measures reported</p> <p>Limitations: Some concern about selection of controls and their homeless status</p> <p>Notes: Note the mean increases were higher with higher fidelity to the ideal Housing First with Support model:</p>

<p>Research and Quality's</p> <p>Monetary Conversions: Index year assumed 2007 in U.S. dollars</p>	<p>Study analyzes outcomes for subgroup of youth age 18 through 24.</p> <p>Sample Size: Intervention: 2609 Control: 2609</p> <p>Population Characteristics: Mean Age: 21 Females: 40% Race: African American 11%, White 31%, Hispanic 22%, Other and unclassified 37%. Medicaid 59% Diseases or Disorders: Substance use 46%, Schizophrenia 48%, bipolar disorder 28%, major depressive disorder 24%.</p> <p>Time Horizon: Existing program. Intervention group selected from PSH participants between January 1, 2005, and June 30, 2009.</p>	<p>Housing First with Support model (Gilmer 2013), most of the programs included in this study showed greater fidelity to service array and team structure than to housing and service philosophy. In other words, the services and staffing offered were like Housing First with Support but the philosophy of Housing First versus Treatment First was not followed in many of the programs. The PSH program put in place after the MHPA Act in California has many features similar to the Housing First with Support intervention. However, many PSH providers in study did require housing readiness (e.g. sobriety or treatment). So, the intervention in this study is a mixed bag of Housing First and Treatment First.</p> <p>Comparison:</p>			<p><u>Emergency housing</u> not reported <u>Judicial costs</u> not reported <u>Welfare</u> not reported <u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare</p> <p>Components Included in Healthcare Cost: Physical and mental health. Inpatient physical and mental, outpatient mental, crisis and residential services.</p> <p>Source and Valuation: Multiple agencies administrative and claims data linked together.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p>\$4,575 for low; \$7,224 for mid; \$17,610 for high fidelity.</p>
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		Persons with severe mental illness matched to PSH group. Unclear if chronic homelessness was a requirement.				
<p>Author (Year): Goering et al. (2014)</p> <p>Design: Demonstration project with control</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Government of Canada</p> <p>Monetary Conversions: Index year assumed 2010 in Canadian dollars</p>	<p>Location: Vancouver, Montreal, Toronto, Moncton, Canada</p> <p>Eligibility: Based on mental health severity and baseline resource use, persons are categorized into High-need and Moderate-need. Study participants are then randomly selected from High-need who will receive assertive community treatment and from Moderate-need who will receive intensive case management. The associated randomly selected controls receive no treatment.</p>	<p>Program Name: At Home/Chez Soi</p> <p>Intervention Demonstration project in Canada for Housing First with Support with 2 levels of services - intensive case management for moderate need (62%) and assertive community treatment for high need (38%) individuals. Quality controlled for fidelity to Housing First with Support. Intervention group received immediate housing of choice, rent subsidy with 30% contribution from clients. Clients received support they needed. Required to meet support team once a week. Most units were private rental units with some social housing. ACT provided by team of psychiatrists,</p>	<p>Stable Housing Days: Intervention group was stably housed during 73% of 24 months. Control group was stably housed during 32% of 24 months.</p> <p>Quality of Life Index (QOLI-20) From baseline 70 to intervention at 88 and control at 86.</p> <p>No difference in substance use, mental health, physical health.</p> <p>Source: QOLI-20 based on self-report. Housing from self-reports every 3 months.</p> <p>Measure Type: DiD</p>	<p>Intervention cost: High-need \$22,257 per person per year Moderate-need \$14,177 per person per year</p> <p>Source: Programs data and data provided by provincial governments</p> <p>Components Included in Intervention Cost: Salaries of providers and supervisors, travel, rent, utilities, and rent subsidies for tenants</p> <p>Quality of Capture: High-need: Good Moderate-need: Good</p> <p>Quality of Measurement: High-need Good Moderate-need Good</p>	<p>Total Cost: Total cost per person per year: High-need Reduced \$21,375 Moderate-need Reduced \$4,849</p> <p>Costs by Component: <u>Healthcare cost</u> Included in total cost averted. Not reported separately.</p> <p><u>Emergency housing</u> Included in total cost averted. Not reported separately.</p> <p><u>Judicial costs</u> Included in total cost averted. Not reported separately.</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial</p> <p>Components Included in Healthcare Cost:</p>	<p>Benefit-Cost Ratio: High-need 0.96 Moderate-need 0.34</p> <p>Quality of Estimate: High-need Good Moderate-need Fair</p> <p>Limitations: Inclusion of those not chronically homeless; self-reported utilization</p>

	<p>Sample Size: Intervention: 1158 Control: 990</p> <p>Population Characteristics: Age: 34 or younger was 39% in high need group and 29% in moderate need group. Female: 32% Race: Aboriginal 22% Less than high school 56% Unemployed 93% Judicial encounters 36% Diseases or Disorders: Psychotic 34%, substance abuse 67%, non-psychotic 71%. Absolutely homeless 8% and precariously homeless 18%.</p> <p>Time Horizon: 2-year follow-up. Data collection October 2009 through June 2013.</p>	<p>nurses, peers with staff-client ratio of 1:10. Teams met daily and available 24-7. ICM made up of case managers who brokered needed services. Staff: client ratio of 1:20 initially and then reduced to 1:16. Services 7 days - 12 hours day. ICM staff case conferenced minimum every month. Training and technical assistance was offered to all sites and teams. Majority of housing was scattered private market; some could choose congregate living.</p> <p>Comparison: Persons who were homeless and not in the demonstration project. Comparison group often received housing and other support services. Varied in intensity across the cities.</p>			<p>Physical and mental health. Inpatient, ED, outpatient.</p> <p>Source and Valuation: Self-reported utilization collected every 3 months with unit prices from providers and agencies.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: High-need Good Moderate-need Good</p> <p>Quality of Measurement: High-need Good Moderate-need Fair</p>	
<p>Author (Year): Holtgrave et al. (2013)</p> <p>Design:</p>	<p>Location: Baltimore, Maryland; Chicago, Illinois;</p>	<p>Program Name: Housing Opportunities for People with AIDS (HOPWA)</p>	<p>Stable Housing Days: Not reported</p>	<p>Intervention cost: \$12,288 per person per year</p> <p>Source:</p>	<p>Total Cost: Total cost per person per year reduced \$4,950</p> <p>Costs by Component:</p>	<p>Cost per QALY gained: \$62,493.</p> <p>Quality of Estimate:</p>

<p>Modeled from trial</p> <p>Economic Method: Cost per QALY</p> <p>Funding Source: Department of Housing and Urban Development, Centers for Disease Control and Prevention</p> <p>Monetary Conversions: Index year assumed 2005 in U.S. dollars</p>	<p>Los Angeles, California, U.S.</p> <p>Eligibility: Persons recruited through HIV service organizations</p> <p>Sample Size: Intervention: 315 Control: 315</p> <p>Population Characteristics: Age: 64% were 50 or above and 24.4% were 30 to 39. Female: 29% Race: African American 78.4%, Other and unclassified 21.6%. Less than high school 36.5% Unemployed 80.3% Diseases or Disorders: HIV 100%, Alcohol abuse 100%, Hep C 40%, TB 18%, Diabetes 8%, Emphysema 8%. Ever jailed 69.1%</p> <p>Time Horizon: July 2004 to May 2005 baseline assessments. 6-</p>	<p>Intervention Immediate rental assistance with case management. Met with housing referral specialist and assisted with finding housing of choice. Rental assistance based on client income. Specialists assessed health needs and provided necessary referrals. Housing locator and rent support. Assessed health needs and provided referrals. Many were referred from HIV service organizations and were presumably being treated.</p> <p>Comparison: HIV persons assisted with developing a housing assistance plan. Not restricted from obtaining rental assistance or housing from other sources.</p>	<p>Quality of Life Stress among seropositives (=0.0324 QALY increase). Averted HIV infections modeled to increase QALY by 0.33.</p> <p>Source: Averted infections and QALY from HIV research literature based and stress based on trial.</p> <p>Measure Type: Pre to post</p>	<p>Interviews of program leaders and program records at sites.</p> <p>Components Included in Intervention Cost: Recruitment, screening, housing subsidy, utility assistance, case management for care, materials and administrative.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p><u>Healthcare cost</u> Reduced \$4,950 per person per year.</p> <p><u>Emergency housing</u> not reported</p> <p><u>Judicial costs</u> not reported</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare</p> <p>Components Included in Healthcare Cost: Physical and mental health. Outpatient, inpatient, ED, medications.</p> <p>Source and Valuation: ED use observed in trial and reduction in averted transmissions from literature.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Fair</p>	<p>Fair</p> <p>Limitations: Benefits modeled are not related to housing.</p>
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	month follow-up. QALY modeled lifetime.					
<p>Author (Year): Larimer et al. (2009)</p> <p>Design: Pre post with control</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Robert Wood Johnson Foundation, NIH, National Institute on Alcohol Abuse and Alcoholism, University of Washington</p> <p>Monetary Conversions: Index year assumed 2006 in U.S. dollars</p>	<p>Location: Seattle, Washington, U.S.</p> <p>Eligibility: Persons selected from rank ordered chronically homeless incurring highest cost in 2004 for alcohol-related ED, sobering center, and jail. Also referred by providers.</p> <p>Sample Size: Intervention: 81 got immediate assignment of housing and 14 were housed before 3-month follow-up Control: wait list 39</p> <p>Population Characteristics: Mean Age: 48 Female: 6% Race: African American 10%, White 39%, Hispanic 6%, Native and Alaskan 28%, Other 13%.</p>	<p>Program Name: 1811 Eastlake</p> <p>Intervention Housing first with support for chronically homeless with alcohol dependence who are high utilizers. Group housing with case managers who encouraged sobriety and life goals. Meals provided. On-site case managers engaged persons about substance use and life goals. Also offered onsite meals and healthcare.</p> <p>Comparison: Wait list controls</p>	<p>Stable Housing Days: Median time in housing was 17.2 months during period of study.</p> <p>Source: Not reported. Likely from program housing records.</p> <p>Measure Type: Post only</p>	<p>Intervention cost: \$1,120 per person per month</p> <p>Source: Program records. Per person cost computed in terms of full capacity (=75 persons).</p> <p>Components Included in Intervention Cost: Maintenance, utilities, insurance, food, case management, health services.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p>Total Cost: Reduction was \$3,569 per person per month</p> <p>Costs by Component: <u>Healthcare cost</u> Included in total cost averted. Not reported separately. <u>Emergency housing</u> Included in total cost averted. Not reported separately. <u>Judicial costs</u> Included in total cost averted. Not reported separately. <u>Welfare</u> not reported <u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. Inpatient, ED, EMS, outpatient.</p> <p>Source and Valuation: Healthcare from hospitals, providers,</p>	<p>Benefit-Cost Ratio: 3.19</p> <p>Quality of Estimate: Good</p>

	<p>Less than high school 33% Alcohol abuse 100% Days past 36 months: car/street/under bridge 112; shelter 87; hospital 100; sobering center 112; motel/hotel 86.</p> <p>Time Horizon: Recruitment Nov 2005 to March 2007.</p>				<p>Medicaid, etc. Utilization multiplied by unit price provided by entities. Non-healthcare from multiple sources: county corrections; shelters.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Latimer et al. (2019)</p> <p>Design: RCT</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Health Canada, Mental Health Commission of Canada</p> <p>Monetary Conversions: Index year 2016 in Canadian dollars</p>	<p>Location: Vancouver, Winnipeg, Toronto, Montreal, Canada</p> <p>Eligibility: Persons selected from multiple sources for referrals and street outreach. Adults with legal status in province of residence and 1 of 6 mental health disorders including psychotic, major depressive, post-traumatic; absolutely homeless or precariously housed with history of</p>	<p>Program Name: At Home/Chez Soi</p> <p>Intervention Housing First plus intensive case management (ICM). Scattered housing. Assistance to find housing, provide housing subsidy (after 25-30% of income from client), and resolve housing issues. Program monitored for fidelity to Housing First model.</p> <p>Comparison: Not part of the Housing first intervention. Some may have received housing and other</p>	<p>Stable Housing Days: Increased 140.34 days per year compared to control.</p> <p>Source: 3-month person recall for residence every 3 months</p> <p>Measure Type: DiD</p>	<p>Intervention cost: \$14,496 per person per year</p> <p>Source: Unit costs calculated for each service for the housing and ICM teams. Charges were assigned to each occupied unit based only on actual usage of services by tenant.</p> <p>Components Included in Intervention Cost: Housing services and brokered ICM services. Mentions clinic staff and housing specialist and case managers, with 17 persons assigned to each case manager. No other details.</p>	<p>Total Cost: Reduction was \$2,410 per person per month.</p> <p>Costs by Component: <u>Healthcare cost</u> Increased \$596 per person per year composed of physical health cost by \$208 increase, mental health cost by \$1,302 increase and substance use care decrease by \$914.</p> <p><u>Emergency housing</u> Reduced \$4,794 per person per year.</p> <p><u>Judicial costs</u> Increased \$1,363 per person per year.</p> <p><u>Welfare</u> Increased \$192 per person per year.</p>	<p>Benefit-Cost Ratio: \$2,410/\$14,496 = 0.17</p> <p>Quality of Estimate: Fair</p>

	<p>absolute homelessness. Based on mental health severity and baseline resource use, persons are categorized into High-need and Moderate-need. High-need individuals were excluded from analysis and only Moderate-need individuals were analyzed in the present study.</p> <p>Sample Size: Intervention: 689 Control: 509</p> <p>Population Characteristics: Age: less than 30 17.1%, 30-49 57.8%, 50 or older 25.1%. Female: 65% Alcohol abuse 43% Substance use 44.6% Judicial encounter 29% Longest period homeless mean was 29.7 months and median was 12 months.</p> <p>Time Horizon:</p>	<p>supports, particularly in big cities. Small numbers may have received supportive medical and other services.</p>		<p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p><u>Employment</u> Reduced by \$233 per person per year.</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial, Welfare, Employment.</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. Inpatient, ED.</p> <p>Source and Valuation: Healthcare 6-month person recall from questionnaire every 6 months. Unit price from financial reports. Person recall 6-month for judicial and 3-month for residential person recall by survey instrument and cost based on area-specific unit cost every 6 and 3 months.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Fair</p>	
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	Recruitment from Oct 2009 to June 2011.					
<p>Author (Year): Lim et al (2018)</p> <p>Design: Pre to post with control</p> <p>Economic Method: Healthcare cost</p> <p>Funding Source: None reported</p> <p>Monetary Conversions: Index year 2012 in U.S. dollars</p>	<p>Location: New York, New York, U.S.</p> <p>Eligibility: Persons age 18 or older eligible for New York City supportive housing due to chronic homelessness plus serious mental illness or dual mental illness and substance disorder diagnoses.</p> <p>Sample Size: Intervention: 737 Control: 2090</p> <p>Population Characteristics: Age: 18-34 15%, 35-44 27%, 45-54 40%, 55 or older 18%. Female: 29% Race: African American 51%, White 15%, Hispanic 18%, Other 3%. Medicaid almost all Less than high school 45%</p>	<p>Program Name: New York/New York</p> <p>Intervention The program followed the Housing First model with housing placement not being contingent on adhering to treatment or services. Program is based on NY/NY model. No further details.</p> <p>Comparison: From eligible persons from 2007-2010, selected those who were 'unplaced in New York City housing first program' for 2 years since meeting eligibility criteria. This ensures the control group meet homeless and disorder/disability criteria but were not exposed to Housing First-type services in the pre or post period.</p>	<p>Stable Housing Days: In post 24 months, intervention group stayed in housing for mean (median) of 661 (730) days.</p> <p>Source: Program housing records</p> <p>Measure Type: Post for intervention group only</p>	<p>Intervention cost: Not reported</p>	<p>Total Cost: 2-year reduction was \$9,526 per person.</p> <p>Costs by Component: <u>Healthcare cost</u> 2-year reduction of \$9526 composed of inpatient reduction of \$5,864, ED reduction of \$318, and medications reduction of \$2,014.</p> <p><u>Emergency housing</u> not reported</p> <p><u>Judicial costs</u> not reported</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare</p> <p>Components Included in Healthcare Cost: Substantially psychiatric and behavioral. Outpatient, inpatient, ED, medications, home and personal services, residential services.</p> <p>Source and Valuation: Medicaid data</p>	<p>No summary economic measures reported</p>

	<p>Diseases or Disorders: Alcohol abuse 43%, SUD 52%, Mental health disorder 99%.</p> <p>Time Horizon: Selected from those eligible for Housing First in New York City during 2007-2010.</p>				<p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Patterson et al. (2008)</p> <p>Design: Modeled</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Government of Canada</p> <p>Monetary Conversions: Index year 2006 in Canadian dollars</p>	<p>Location: Provincewide, British Columbia, Canada</p> <p>Eligibility: Modeled for British Columbia population. Includes SUD and mental health disorders. Mental health disorders include bipolar, psychotic, major depressive, post-traumatic stress, obsessive compulsive, and panic disorders. Includes absolute homeless and inadequately housed and supported.</p> <p>Sample Size: Intervention:</p>	<p>Program Name: None</p> <p>Intervention Modeled the outcomes for British Columbia (BC) based on effectiveness of the New York/New York program evaluated in Culhane 2002. Outcomes based on intervention cost drawn from British Columbia data. Pre to post changes in housing, healthcare, judicial, effects based on Culhane 2002 NY-NY experience but costed with target BC population of absolute homeless and those at risk and per unit cost based on studies covering Canadian</p>	<p>No effectiveness outcomes of interest reported</p>	<p>Intervention cost in annual terms: Absolute Homeless \$148.06 million At Risk \$118.54 million Combined \$266.57 million</p> <p><u>Capital Cost for Housing</u> Absolute Homeless 11,750 units at \$30.4 million At Risk 7,009 units at \$18.2 million Combined 18,759 units at \$48.62 million</p> <p><u>Annualized cost of housing and support services</u> Absolute homeless \$148 million At risk \$118.5 million Combined</p>	<p>Total Cost per year: Absolute Homeless Reduced \$211.32 million At risk Reduced \$126.05 million Combined Reduced \$337.37 million</p> <p>Annual Costs by Component: <u>Healthcare cost</u> Absolute Homeless Reduced \$198.3 million At risk Reduced \$118.3 million Combined Reduced \$316.58 million</p> <p><u>Emergency housing and Residential Services</u> Absolute homeless Increased \$148.06 million At risk Increased \$118.5 million Combined Increased \$266.57 million</p>	<p>Total Cost in per year terms: Absolute Homeless: Net reduction \$63.25 million Net reduction with amortized capital cost of new housing \$32.8 million</p> <p>At Risk: Net reduction of \$7.55 million Net increase with amortized cost of new housing \$10.62 million</p> <p>Combined: Net reduction \$70.8 million Net reduction with amortized cost of new housing \$22.18 million</p> <p>Quality of Estimate: Fair</p> <p>Limitations:</p>

	<p>Absolute homeless 11750 Inadequately housed 7009</p> <p>Control: Implicit in modeling</p> <p>Population Characteristics: Age: 18 through 90 Adults No families Severe and moderate mental illness and substance abuse disorders.</p> <p>Time Horizon: Modeled for 2006.</p>	<p>context. Most housing provided was Supportive Housing (76%) with 20% of the supportive housing being Housing First. Services provided through ICM. Did not include ACT type of support services. Range of housing types that were group or scattered or residential care.</p> <p>Comparison: Control is implicit in modeling and based on Culhane 2002.</p>		<p>\$266.6 million</p> <p>Source: Housing capital cost for new units based on Pomeroy 2005. Housing support services use based on the NY experience in Culhane 2002.</p> <p>Components Included in Intervention Cost: Housing and housing services. Also capital cost of new units needed. Support services included as cost but appears in the benefits (offsets) columns for housing and housing services.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Fair</p>	<p><u>Judicial costs</u> Absolute homeless Reduced \$13.02 million At risk Reduced \$7.77 million Combined Reduced \$20.79 million</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. Inpatient, ICU, ambulance, outpatient, labs.</p> <p>Source and Valuation: Utilization modeled based on pre to post changes observed in Culhane 2002 for NY-NY applied to the BC setting. Per unit cost based on Canadian studies, Eberle et al. (2001) and Kopala et al. (2006).</p> <p>Measure Type: Modeled</p>	<p>Modeled from effectiveness outcomes found in New York/New York program described in Culhane 2002.</p>
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<p>Author (Year): Rosenheck et al. (2003)</p> <p>Design: RCT</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: Veterans Affairs</p> <p>Monetary Conversions: Index year 2002 in U.S. dollars</p>	<p>Location: San Francisco, California, San Diego, California, New Orleans, Louisiana, Cleveland, Ohio, U.S.</p> <p>Eligibility: Veterans experiencing homelessness for 1 month or longer and with a diagnosis of a major psychiatric disorder (schizophrenia, bipolar disorder, major affective disorder, or posttraumatic stress disorder) or an alcohol or drug abuse disorder or both.</p> <p>Sample Size: Intervention: 182 Control (2 arms): 278</p> <p>Population Characteristics: Mean Age: 42 Female: 4.2%</p>	<p>Program Name: HUD-VASH</p> <p>Intervention This is an 18-site demonstration project. The intervention arm of veterans who received case management for mental health but were not provided housing is not of interest to this review.</p> <p>Each veteran had to agree to a treatment plan involving further participation in case management and other specified services if randomized to either HUD-VASH or case management only. However, once assigned, retention of the voucher was not contingent on participation in treatment.</p> <p>The case managers linked clients with the local housing</p>	<p>Stable Housing Days: HUD-VASH group had 16% and 25% more days housed than case management and standard care, respectively.</p>	<p>Intervention cost in annual terms: \$2,295 per person</p> <p>Source: VA inpatient, residential care, and outpatient treatment were estimated from the VA's Cost Distribution Report. Non-VA unit costs were estimated from several sources, including analysis of costs in the 1998 MarketScan.</p> <p>Components Included in Intervention Cost: Housing subsidies and healthcare support.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p>Total Cost per person per year: Decreased \$106</p> <p>Annual Costs per person by Component: <u>Healthcare cost</u> Increased \$719 <u>Emergency housing and Residential Services</u> Decreased \$800 <u>Judicial costs</u> Increased \$101 <u>Welfare</u> not reported <u>Employment</u> Increased \$126</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. Inpatient, ED, outpatient, labs.</p> <p>Source and Valuation: Healthcare utilization from the VA's comprehensive national</p>	<p>Benefit-Cost Ratio \$106/\$2,295 = 0.05</p> <p>Quality of Estimate: Fair</p>

	<p>Race: African American 64%, Other 36%. Mental health disorder or SUD or both 100%</p> <p>Time Horizon: 3-year intervention from June 1992 through December 1995.</p>	<p>authority and facilitated administrative access and use of the voucher. Case managers also eased the transition to independent living by helping clients locate an apartment, negotiate the lease, and furnish and move into their new apartment.</p> <p>Comparison: Two comparators: Case management only without special access to Section 8 vouchers; standard VA care</p>			<p>workload data systems and residential treatment from VA contracts with community agencies. Interview data for jail days and earnings. Only administrative cost to VA of procuring welfare, housing vouchers, and other benefits.</p> <p>Measure Type: Post only</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Fair</p>	
<p>Author (Year): Schinka et al. (1998)</p> <p>Design: Pre post with control</p> <p>Economic Method: Healthcare cost</p> <p>Funding Source: Veterans Affairs</p> <p>Monetary Conversions: Index year assumed 1997 in U.S. dollars</p>	<p>Location: Tampa, Florida, U.S.</p> <p>Eligibility: Patients treated at VA for substance abuse who were homeless. Rejected as candidates for outpatient treatment due to past failure, comorbid mental health, multiple drug use, or homelessness.</p>	<p>Program Name: None</p> <p>Intervention: Patients offered housing in apartments close to hospital where they received SUD treatment. Apartment building supervised by the agency staff 24 hours a day. On weekdays, participated in the same therapeutic activities as did patients in the inpatient program.</p>	<p>No effectiveness outcomes of interest reported</p>	<p>Intervention cost in annual terms: Reported as total cost including cost of treatment</p>	<p>Total Cost Averted per person per year: Reported as total cost including intervention cost</p>	<p>Total Cost: Annual cost of housing plus treatment for the intervention group \$46,748 Annual cost of inpatient care for the control group \$87,048</p> <p>Source: Housing costs for extracted from data provided by the VA national cost distribution report.</p> <p>Components Included in Total Cost:</p>

	<p>Sample Size: Intervention: 36 Control: 62</p> <p>Population Characteristics: Moderately severe substance dependence</p> <p>Time Horizon: Trial from July 1996 through December 1996</p>	<p>In the evenings, these patients attended Alcoholics Anonymous and Narcotics Anonymous meetings, housekeeping meetings, and group meetings at the residence.</p> <p>On weekends, supportive housing patients worked on assignments and attended AA or NA meetings, but were otherwise free to use their time as they wished.</p> <p>Comparison: Inpatient VA care for SUD.</p>				<p>Housing cost estimate included costs related to bed occupancy, meals, and building management, maintenance, and utilities. Also included use of space for group activities.</p> <p>Cost of personnel providing full- or part-time services, including psychiatrists, nurses, and occupational therapists and support staff. Items similar for intervention and control not examined (such as chest x-rays and routine intake laboratory tests)</p> <p>Measure Type: Post only</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Fair</p>
<p>Author (Year): Seligson et al. (2013)</p> <p>Design: Retrospective with matched control</p> <p>Economic Method: Cost-benefit</p>	<p>Location: New York, New York, U.S.</p> <p>Eligibility: Persons who were applicants for placement in housing processed for eligibility and availability of housing by city</p>	<p>Program Name: New York/New York III</p> <p>Intervention: Housing plus case management, medication management, rehabilitation, personal assistance that emphasizes learning daily living</p>	<p>No effectiveness outcomes of interest reported.</p>	<p>Intervention cost per person per year: Group A \$15,065 Group B \$25,987 Group C \$26,030 Group D \$22,828 Group E Not reported</p> <p>Source: Records from New York City departments for homeless services, corrections, health,</p>	<p>Total Cost per person per year: Group A reduced \$15,941 Group B reduced \$33,598 Group C reduced \$25,651 Group D reduced \$11,021 Group E reduced \$5,280</p> <p>Costs by Component:</p>	<p>Benefit-Cost Ratio: Group A 1.06 Group B 1.29 Group C 0.99 Group D 0.48 Group E Not reported</p> <p>Quality of Estimate: Good</p>

<p>Funding Source: New York and New York City</p> <p>Monetary Conversions: Index year 2011 in U.S. dollars</p>	<p>government agencies and housing providers.</p> <p>Sample Size: Intervention: 1696 Control: 3700</p> <p>Population Characteristics: Not reported</p> <p>Time Horizon: Existing program. Analyzed for those served 2007 through 2009.</p>	<p>skills, financial management, assistance in gaining access to appropriate public benefits and services. 24-hour/seven-day-a-week on-call staffing. Help in establishing the household. Linkage services to address clients' physical and mental health needs in the areas of primary medical, mental health, and dental care, substance abuse counseling and treatment, domestic violence counseling and HIV/STD prevention and treatment and support services.</p> <p>Subgroup analyses for: Group A: Serious mental health or dual mental health and SUD Group B: Head of household with serious mental health or dual mental health and SUD Group C: Head of household with SUD, a disabling condition, or HIV</p>		<p>and human resources. Also state department of mental health.</p> <p>Components Included in Intervention Cost: Subsidies for housing and case management for physical and mental health/SUD services, and other assistance provided. Capital costs of housing not included.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p>Healthcare cost Group A reduced \$4,380 Group B reduced \$4,758 Group C increased \$281 Group D reduced \$9,322 Group E increased \$2,592</p> <p>Non-Healthcare (Housing, Judicial, Welfare) Group A reduced \$11,561 Group B reduced \$28,840 Group C reduced \$25,932 Group D reduced \$1,699 Group E reduced \$7,872</p> <p>Components Included in Total Costs Averted: Healthcare, Housing, Judicial, Welfare.</p> <p>Components Included in Healthcare Cost: Physical and Mental Health/SUD. Inpatient, ED, medication, outpatient.</p> <p>Source and Valuation: Records from New York City departments for homeless services, corrections, health, and human resources. Also state department of mental health.</p> <p>Measure Type: DiD</p>	
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		<p>Group D: Youth leaving foster care system Group E: HIV and Serious mental health or SUD</p> <p>Comparison: Individuals not placed in NY/NY III for more than seven days who did not reside for more than seven days in any other government subsidized housing tracked by the evaluation.</p>			<p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Srebnik et al. (2013)</p> <p>Design: Pre post with comparison</p> <p>Economic Method: Cost-benefit</p> <p>Funding Source: King County, the City of Seattle, United Way of King County, and the Seattle and King County Housing Authorities</p> <p>Monetary Conversions:</p>	<p>Location: Seattle, Washington, U.S.</p> <p>Eligibility: Persons 18 years or older, were homeless for 12 consecutive months or 4 homeless episodes in the prior 3 years, and had significant disabling physical or psychiatric conditions. Referred either from Seattle-King County Public Health’s REACH homeless</p>	<p>Program Name: Begin at Home (BAH)</p> <p>Intervention The housing first BAH program provides housing for eligible persons. It also provides on-site medical care and connections to ancillary services. BAH team includes housing case managers, chemical dependency specialists, and a registered nurse (8 hours per week) with a 1:21 housing case manager-to-participant ratio. The team conducts</p>	No effectiveness outcomes of interest reported	<p>Intervention cost per person per year: \$18,600</p> <p>Source: Presumably from program records. No details provided.</p> <p>Components Included in Intervention Cost: Housing and integrated medical, psychiatric, and chemical dependency services. Assistance obtaining benefits and development of self-sufficiency capabilities.</p> <p>Quality of Capture: Good</p>	<p>Total Cost per person per year: Decreased \$32,757</p> <p>Annual Costs per person by Component: <u>Healthcare cost</u> Decreased \$33,421 <u>Emergency housing</u> not reported <u>Judicial costs</u> Increased \$664 <u>Welfare</u> not reported <u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted:</p>	<p>Benefit-Cost Ratio: 1.76</p> <p>Quality of Estimate: Good</p>

<p>Index year assumed 2012 in U.S. dollars</p>	<p>outreach team with 60 or more sobering sleep-off center visits within the prior year or from medical respite with inpatient claims of \$10,000 or more within the prior year.</p> <p>Sample Size: Intervention: 29 Control (2 arms): 31</p> <p>Population Characteristics: Mean Age: 51 Female: 28% Race: African American 17%, White 62%, Hispanic 7%, Other including Native and Alaskan 14%.</p> <p>Time Horizon: Study from 2006 through 2008</p>	<p>frequent case staffing and has 24-hour coverage and security, with almost all services provided in the community or at the person’s residence. Assistance obtaining benefits and achieving self-sufficiency.</p> <p>Comparison: Recruited using the same selection criteria as the participant group. Did not participate in housing first with support.</p>		<p>Quality of Measurement: Good</p>	<p>Healthcare, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. ED, Inpatient, sobering center.</p> <p>Source and Valuation: Utilization and claims from Harborview Medical Center and other utilization from King County’s electronic management information system.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	
<p>Author (Year): Toros et al. (2012)</p> <p>Design: Pre post with control</p> <p>Economic Method: Cost-benefit</p>	<p>Location: Los Angeles, California, U.S.</p> <p>Eligibility: Persons selected from registry of persons who were homeless and living on Skid</p>	<p>Program Name: Skid Row-Project 50</p> <p>Intervention Housing and mental health with targeted case management, case consultation, acute general hospital,</p>	<p>No effectiveness outcomes of interest reported</p>	<p>Intervention cost in annual terms: \$30,450 per person</p> <p>Source: Presumably from program records. No details provided.</p>	<p>Total Cost per person per year: Decreased \$24,024</p> <p>Annual Costs per person by Component: <u>Healthcare cost</u> Reduced \$13,005</p>	<p>Benefit-Cost Ratio: 0.79 Authors state it is: \$3,284,000/\$3,045,000 =1.08</p> <p>Quality of Estimate: Fair</p>

<p>Funding Source: Los Angeles County</p> <p>Monetary Conversions: Index year assumed 2011 in U.S. dollars</p>	<p>Row. Interviewed and photographed to determine vulnerability based on length of homelessness, time spent on the streets, and health and mental health status. Most vulnerable were selected.</p> <p>Sample Size: Intervention: 50 Control: 46</p> <p>Population Characteristics: Not reported.</p> <p>Time Horizon: Study from 2008 through 2010</p>	<p>crisis stabilization in emergency rooms, rehab services, psychological diagnosis services, individual and group therapies, and brief medical visits. Physical health with inpatient and outpatient. Substance abuse with detox, residential, outpatient and day care services.</p> <p>Comparison: No Project 50. On average had lower vulnerability scores.</p>		<p>Components Included in Intervention Cost: Housing and mental health, substance use, and SUD care.</p> <p>Quality of Capture: Good</p> <p>Quality of Measurement: Good</p>	<p><u>Emergency housing</u> not reported</p> <p><u>Judicial costs</u> Reduced \$11,019</p> <p><u>Welfare</u> not reported</p> <p><u>Employment</u> not reported</p> <p>Components Included in Total Costs Averted: Healthcare, Judicial</p> <p>Components Included in Healthcare Cost: Physical and mental health/SUD. Inpatient, ED, outpatient.</p> <p>Source and Valuation: Administrative data from departments of health, mental health, public health, homelessness, and law enforcement. Health data also from area hospitals.</p> <p>Measure Type: DiD</p> <p>Quality of Capture: Fair</p> <p>Quality of Measurement: Good</p>	
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