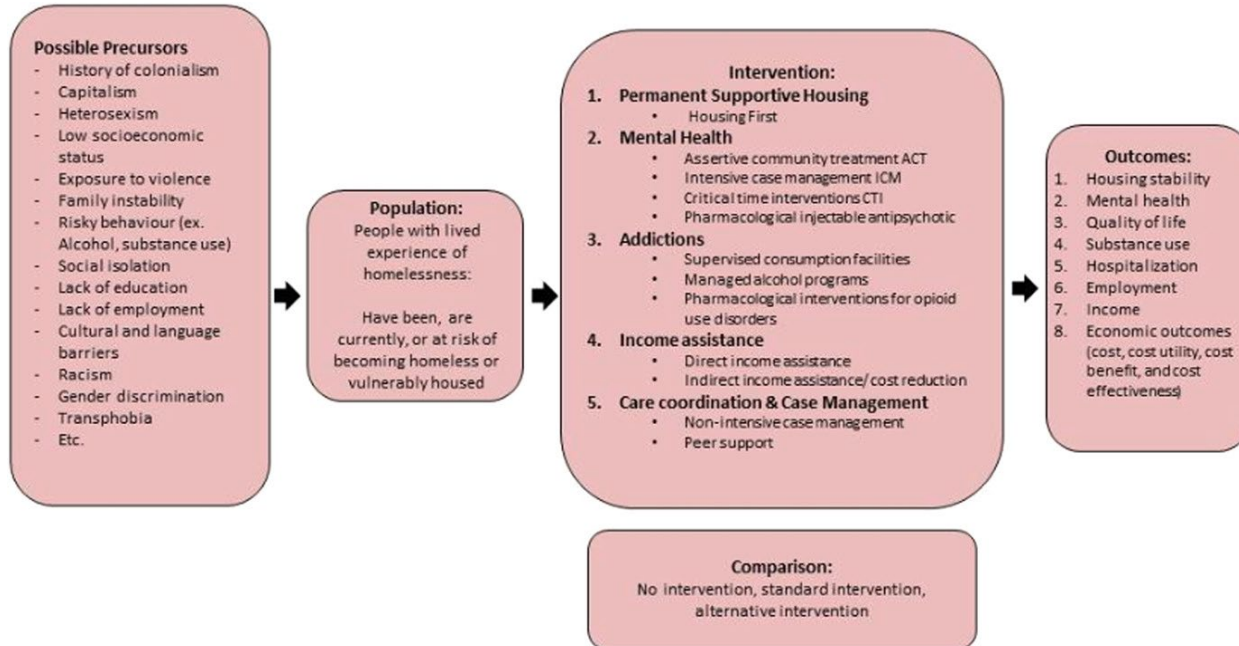


## Appendix 3 (as supplied by the authors): Systematic Review Methodology

**Clinical question:** Should permanent supportive housing, income assistance, case management, pharmacological agents for opioid use, and/or harm reduction interventions be considered for persons with lived experience of homelessness?

### Project logic model:



### Research approach: Housing, Income and Case Management Interventions

**Objective:** To assess the effectiveness and cost-effectiveness of permanent supportive housing, income assistance and case management interventions on the health and social outcomes of homeless or vulnerably housed individuals in the following domains: housing stability, mental health, substance use, quality of life, hospitalization, employment and income.

### Eligibility criteria:

Study Characteristics	Inclusion Criteria	Definitions
<b>Population</b>	People experiencing homelessness and vulnerable housing. If study populations were heterogeneous, we included the study if the population was comprised of >50% homeless or vulnerably housed individuals.	

<b>Interventions</b>	<p>Permanent Supportive Housing</p> <p>Income Assistance</p> <p>Standard Case Management/ Clinical Case Management</p> <p>Intensive Case Management (ICM)</p> <p>Assertive Community Treatment (ACT)</p> <p>Critical Time Intervention (CTI)</p>	<p>Permanent supportive housing is defined as long-term housing in the community combined with the provision of individualized supportive services that are tailored to participants' needs and choices (Assertive Community Treatment ACT and Intensive Case Management ICM). There are no set pre-conditions for accessing permanent supportive housing and housing can be located in scattered sites of regular housing with portable support or specialized single-site housing with on-site support.</p> <p>Benefits and programs offered by individuals or institutions that increase income, with the goal of improving socioeconomic status. Direct income assistance aims to increase disposable income; for example: government assistance, tax benefits, cash transfers, charity, or financial literacy programs. Indirect income assistance helps with cost reduction and aims to improve access to basic living necessities such as rent or fuel supplements. This can include social assistance programs, employment support or financial literacy programs.</p> <p>Interventions with multiple components were included (income assistance and employment support or case management).</p> <p>These allow for the provision of an array of social, healthcare, and other services with the goal of helping the client maintain good health and social relationships. This is done by “including engagement of the patient, assessment, planning, linkage with resources, consultation with families, collaboration with psychiatrists, patient psychoeducation, and crisis intervention”</p> <p>ICM helps service users maintain housing and achieve a better quality of life through the support of a case manager that brokers access to an array of services. The case manager accompanies the service user to meetings and can be available for up to 12 hours per day, 7 days a week. Case managers for ICM often have a caseload of 15-20 service users each.</p> <p>ACT offers team-based care by a multidisciplinary group of healthcare workers in the community. This team has 24 hours per day, 7 days per week availability and provides services tailored to the needs and goals of each service user.</p> <p>CTI is a service that supports continuity of care for service users during times of transition; for example, from a shelter to independent housing or following discharge from a hospital. This service strengthens the person’s network of support in the community. It is administered by a CTI worker and is a time-limited service, of usually a period of 6-9 months.</p>
<b>Comparison</b>	No intervention, standard intervention, alternative intervention, treatment as usual.	
<b>Outcomes</b>	Housing stability, mental health, quality of life, substance use, hospitalization, income, and employment-related outcomes, costs, and incremental cost-effectiveness ratio	

<b>Study Characteristics</b>	<p>Primary studies as defined by EPOC criteria:</p> <ul style="list-style-type: none"> <li>• Randomized controlled trials</li> <li>• Non-randomized controlled trials</li> <li>• Controlled before-after studies</li> <li>• Interrupted time series and repeated measures studies</li> <li>• Cost or cost-consequence studies</li> <li>• Full economic evaluation studies: cost-minimization analysis, cost-benefit analysis, cost-effectiveness analysis, and cost-utility analysis.</li> </ul> <p>All study designs must include interventions with a comparison/control group and have measured outcomes.</p>
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Study Characteristics	Exclusion Criteria	Justifications
	Studies taking place in low- middle-income countries.	Due to the variability in access to resources and supports in comparison to that in a high-income country vary greatly. We feel that the settings are different and should be synthesized separately
	Studies that exclusively report on Indigenous specific interventions	The analysis of the interventions tailored to this population will be covered by an Indigenous research group.

**Search strategy:** A search strategy was developed and peer-reviewed by a health science librarian. We searched MEDLINE, Embase, CINAHL, PsycINFO, Epistemonikos, HTA database, NHSEED, DARE, and the Cochrane Central Register of Controlled Trials (CENTRAL) from the inception of these databases to February 8, 2018, for studies on both effectiveness and cost-effectiveness. A combination of indexed terms, free text words, and MeSH headings were used (see below). There were no date or language restrictions. We searched the reference lists of relevant systematic reviews for studies that met our inclusion criteria. We consulted experts in the field of homelessness, the vulnerably housed and persons with lived experience to identify any additional studies we may have missed. We updated our search on July 19, 2019 and deduplicated against our previous search to identify trials published since February 2018.

1 vulnerable populations/ poverty areas/  
2 ((deprived or destitute? or impoverished or low income or marginalized or marginalized or needy or poverty or vulnerable) adj2 (adolesc\$ or child\$ or famil\$ or men or people or youth? or women)).tw,kf.  
3 homeless persons/ homeless youth/ runaway behavior/  
4 (homeless\$ or runaway?).tw,kf.  
5 (temporar\$ adj2 (accommodat\$ or home? or hous\$)).tw,kf.  
6 ((based or housed or residen\$ or temporar\$) adj2 shelter?).tw,kf.  
7 or/1-7  
8 exp program evaluation/  
9 (effectiveness or initiative? or prevent\$ or program\$ or reduc\$ or strateg\$ or treatment).tw.  
10 or/8-9  
11 systematic review/ meta-analysis/ randomized controlled trial/ controlled clinical trial/ pragmatic clinical trial/ controlled before-after studies/ interrupted time series analysis/ controlled before-after studies/ (randomized or randomized).ab,kf.  
12 (before adj2 after adj5 (design\$ or study or trial)).tw,kf.

13 ((preintervention? or pre-intervention? or postintervention? or post intervention?) adj5 (study or trial)).tw,kf.  
 14 ((pre-test or pretest or (posttest or post test)) adj2 (design\$ or method\$ or study or trial)).tw,kf.  
 15 \*economics/ exp \*"Costs and Cost Analysis"/ economics, nursing/ economics, medical/ economics, pharmaceutical/ exp economics, hospital/ economics, dental/ exp "Fees and Charges"/ exp budgets/  
 16 ((budget\$ or economic\$ or cost or costs or costly or costing or price or prices or pricing or pharmaco-economic\$ or pharmaco-economic\$ or expenditure or expenditures or expense or expenses or financial or finance or finances or financed) adj6 (analys\$ or analyz\$ or effect\$ or evaluat\$ or impact\$)).ab. /freq=2  
 17 (cost\$ adj2 (effective\$ or utilit\$ or benefit\$ or minimi\$ or analy\$ or outcome or outcomes)).ab,kf.  
 18 (value adj2 (money or monetary)).tw,kf.  
 19 exp models, economic/ economic model\$.ab,kf.

## Research approach: Pharmacological agents for opioid use and harm reduction interventions

*Objective:* to assess the effectiveness of specific harm reduction and pharmacological interventions among homeless or vulnerably housed individuals with concomitant substance use disorders

*Deviations from project protocol:* Our initial search of published literature revealed no experimental trials conducted specifically among homeless populations. We therefore followed the GRADE approach and expanded our search strategy to include grey literature and revised our inclusion criteria to incorporate general population and systematic review evidence for the interventions of interest, and published a protocol reflecting these changes on the Cochrane Equity Methods website. We made this decision fully aware that most studies among “general populations” had a large representation of homeless populations in their samples, and we did not identify any substantial reason to believe that the mechanisms of action of our interventions of interest would differ between homeless populations who use substances and the general population of people who use substances.

### Eligibility criteria:

Inclusion Criteria	Definitions
Population	<p>People experiencing homelessness and vulnerable housing, defined as: “An individual who lacks stable, permanent, appropriate housing, or may be without immediate prospect, means and ability of acquiring it. There are four physical living situations involved with homelessness: 1) Unsheltered; 2) Emergency sheltered; 3) Provisionally accommodated and, 4) At risk of homelessness, referring to people who are not homeless, but whose current economic and/or housing situation is precarious or does not meet public health and safety standards” . We defined vulnerable housing as: “someone who lives in one’s own room or apartment but has unstable living arrangements, often resulting in frequent transitions between homelessness and vulnerable housing” . We did not set any restrictions on the timeline of homelessness (e.g. current, lifetime, past year, etc.).</p> <p>If no studies specific to homeless populations were identified for a given intervention, we expanded our inclusion criteria to the general population who use substances.</p>

Interventions	<p>Supervised consumption facilities</p> <p>Managed alcohol programs</p> <p>Pharmacological interventions for opioid use disorder</p> <p>Pharmacologic agents for reversal of opioid overdose</p>	<p>Legally sanctioned facilities where people who use substances can consume pre-obtained substances under supervision. There exist various terminologies for these facilities, including: supervised injection facilities (SIF), supervised consumption sites (SCS), medically supervised injection centres (MCIS), among others.</p> <p>Shelter, medical assistance, social services and the provision of regulated alcohol to help residents cope with severe alcohol use disorder</p> <p>Opioid therapy medications including methadone, buprenorphine, diacetylmorphine, levo-<math>\alpha</math>-acetylmethadol (LAAM) and naltrexone.</p> <p>Opioid antagonist administered intravenously or intranasally, e.g. naloxone.</p>
Comparison	No intervention, standard intervention, alternative intervention, treatment as usual.	
Outcomes	<p>Mortality: All-cause mortality and rates of suicide.</p> <p>Morbidity: Having a disease or a symptom of disease. For example, prevalence or incidence of a communicable or non-communicable disease. Morbidity also refers to medical problems caused by a treatment.</p> <p>Substance use: As measured by the number of days using alcohol or substance, the rate, and frequency of using alcohol or substances, number of days of abstinence from alcohol or substances or physical and mental consequences of using alcohol or substances.</p> <p>Mental health: Any measures assessing psychological status and wellbeing, including but not limited to, psychological distress, self-reported mental health status, or mental illness symptoms.</p> <p>Access to care: Access to health care means having "the timely use of personal health services to achieve the best health outcomes" [35]. Access to health care consists of four components [36]:</p> <ul style="list-style-type: none"> <li>● Coverage: facilitates entry into the health care system. Uninsured people are less likely to receive medical care and more likely to have poor health status.</li> <li>● Services: Having a usual source of care is associated with adults receiving recommended screening and prevention services.</li> <li>● Timeliness: ability to provide health care when the need is recognized.</li> <li>● Workforce: capable, qualified, culturally competent providers.</li> </ul> <p>Retention in treatment: The length of time clients remain in treatment.</p>	
Study design	Systematic review of quantitative or qualitative studies. Exclude all other study designs and review types.	

Exclusion Criteria	Justifications
Reviews that focus on low- and middle-income countries	Due to the variability in access to resources and supports in comparison to that in a high-income country vary greatly. We feel that the settings are different and should be synthesized separately.
Reviews that focus on Indigenous populations	The analysis of interventions tailored to this population will be covered by an Indigenous research group.
Reviews which focus on incarcerated populations	Not generalizable to the non-incarcerated homeless population.
Reviews which exclusively report on interventions for detoxification	Abstinence-based approaches are outside of the scope of this review.

*Search strategy:* We developed a systematic search using relevant keywords and MeSH terms for relevant published systematic reviews. Keywords included terms such as “opioid-related disorders”, “supervised consumption”, “supervised injection”, “managed alcohol”, “methadone” and “harm reduction” (See below). We searched MEDLINE, EMBASE, PsycINFO, Joanna Briggs Institute EBP, Cochrane Database of Systematic Reviews and the Database of Abstracts of Reviews of Effects (DARE) for systematic reviews from database inception to August 2019. There were no language restrictions. The reference lists for all articles selected for full-text review were manually searched for relevant citations. These were cross-referenced against our original search results and any additional potentially relevant citations were screened. We conducted a grey literature search and consulted experts in the field for any additional studies.

- 1 drug users/
- 2 exp \*substance-related disorders/
- 3 exp \*alcohol-related disorders/
- 4 alcoholics/
- 5 exp \*opioid-related disorders/
- 6 exp \*substance withdrawal syndrome/
- 7 ((Illicit or injection or intravenous or iv or parenteral) adj2 drug use\$).ti,kf.
- 8 ((Illicit or injection or intravenous or iv or parenteral) adj2 drug use\$).ab.

9 (pwud or pwid).tw,kf.

10 or/1-9

11 substance abuse treatment centers/

12 needle-exchange programs/

13 harm reduction/

14 (supervised adj2 (consumption or drug or injection or treatment)).tw,kf.

15 ((needle? or syringe?) adj2 exchange).tw,kf.

16 or/11-15

17 alcohol drinking/pc

18 \*alcoholism/rh, th

19 (managed adj2 (alcohol or drinking)).tw,kf.

20 (supervised adj2 (alcohol or drinking)).tw,kf.

21 (alcohol\$ and (manag\$ or reduc\$ or treat\$) and (abus\$ or delirium or withdrawal)).tw,kf.

22 ((alcohol or ethanol) adj2 (adminstr\$ or administer\$ or intravenous or iv or i v or prophyl\$ or prescri\$ or protocol? or provid\$ or provision)).tw,kf.

23 or/17-22

24 exp \*opioid-related disorders/dt, pc, rh, th

25 substance abuse, intravenous/dt, pc, rh, th

26 narcotics/rh, tu

27 hydromorphone/ad, tu

28 methadone/ad, tu

29 naloxone/ad, tu

30 naltrexone/ad, tu

31 (((buprenorphine or diacetylmorphine or heroin or hydromorphone or methadone or morphine or opiate? or opioid\$) adj (maint\$ or replace\$ or substitut\$)) and (dependen\$ or management or therap\$ or treatment\$)).ti,kf.

32 (((buprenorphine or diacetylmorphine or heroin or hydromorphone or methadone or morphine or opiate? or opioid\$) adj (maint\$ or replace\$ or substitut\$)) and (dependen\$ or management or therap\$ or treatment\$)).ab.

33 or/24-32

34 exp program evaluation/

35 ((effectiveness or improve\$ or initiative? or prevent\$ or program\$ or reduc\$ or strateg\$ or treatment?) adj3 (alcohol\$ or addict\$ or cocaine or drug? or heroin or marijuana or narcotic\$ or opioid?)).ti,kf.

36 ((effectiveness or improve\$ or initiative? or prevent\$ or program\$ or reduc\$ or strateg\$ or treatment?) adj3 (alcohol\$ or addict\$ or cocaine or drug? or heroin or marijuana or narcotic\$ or opioid?)).ab.

37 or/34-36

38 ((overview\$ or review or synthesis or summary or Cochrane or analysis) and (reviews or meta-analyses or articles or umbrella)).ti.

39 ((overview\$ or reviews) and (systematic or cochrane)).ti.

40 (reviews adj2 meta).ab.

41 (reviews adj2 (published or quality or included or summar\$)).ab.

42 (cochrane review\* or systematic review\*).ab.

43 (evidence and (reviews or meta-analyses)).ti.

44 or/39-43

45 38 or 44

46 animals/ not (humans/ and animals/)

47 45 not 46

48 10 and (16 or 23 or 33) and 37 and 47

49 remove duplicates from 48