

Suggested Citation:

Mathies N*, Saad A*, Magwood O, Lee A, Tugwell P, Pottie K on behalf of the Homeless Health Research Network. The Fifth Vital Sign: 'H.O.U.S.E,' a practical medical mnemonic that puts 'housing-first' and includes social determinants of health for current and post-COVID-19 Emergency and Primary Health Care. *Cochrane Equity Methods*. January 26, 2021.

The Fifth Vital Sign: 'H.O.U.S.E,' a practical medical mnemonic that puts 'housing-first' with social determinants of health for current and post-COVID-19 Emergency and Primary Health Care

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Author Contributions: NM, AS, PT, KP conception, NM, AS, KP first draft, OM methods and analysis, OM, AL, PT, KP revisions. All authors approved the final version for publication.

Competing Interests: no competing interests identified.

Funding Sources: Inner City Health Associate, Canadian Medical Association, Champlain LHIN, Public Health Agency of Canada, Employment and Social Development Canada

The COVID-19 pandemic is creating rampant unemployment, magnifying risks for precarious housing and threatening prolonged morbidity. Individuals living with precarious housing and homelessness are often not explicitly diagnosed in the emergency room (ER) and primary care clinics. Trauma, substance use, mental illness, and illness exacerbation go hand-and-hand with substandard living conditions. Chronic homelessness is resource intensive to fix and it lowers life expectancies to 43 years in men and 53 years in women (1).

- Consider Ms. S, a 29 year old female presenting to the ER during the COVID-19 pandemic after falling down a flight of stairs. She faces anxiety, problematic substance

use, precarious housing, and a fractured left fibula. The ER physician initiates trauma informed care and uses the H.O.U.S.E. approach.

The novel H.O.U.S.E. approach is a pragmatic, medical mnemonic that has emerged from new CMAJ evidence-based guidelines and a new curriculum framework to prevent and alleviate precarious housing (2,3). Its series of systematic reviews have shed light on certainty of effects for new interventions that address housing, income, and case management for mental illness (4,5,6,7).

H.O.U.S.E. is both a medical acronym and mnemonic, and it provides a just-in-time clinical approach to address the significant precarious housing epidemic that is following the COVID-19 pandemic.

The H.O.U.S.E - Fifth vital sign medical mnemonic

H.O.U.S.E	H.O.U.S.E. Recommendations
H	<p>Housing precarity</p> <ul style="list-style-type: none"> Identify precarious housing or homelessness and willingness to consider housing interventions. Notify team, housing coordinator or call 311 for help immediately to link to permanent supportive housing and community coordinated care.
O	<p>Outcomes of mental illness</p> <ul style="list-style-type: none"> Identify history of severe mental illness, such as psychosis or mood and anxiety disorders associated with significant disability, substance use or complex health needs. Outcomes are associated with mental health care.
U	<p>Understanding income</p> <ul style="list-style-type: none"> Identify income insecurity. Difficulty making ends meet at the end of the month. Link to teams for income support, resources, and solutions.
S	<p>Start case management for mental health</p> <ul style="list-style-type: none"> Ensure access to local community mental health programs, psychiatric services for assessment, and linkage to intensive case management (ICM),

	assertive community treatment (ACT), or critical time intervention (CTI) where available.
E	<p>Evaluate substance use</p> <ul style="list-style-type: none"> Identify, during history or physical examination, problematic substance use including alcohol or other drugs. Link to team approach for addiction, harm reduction and pharmacological intervention.

The H.O.U.S.E recommendations can help clinicians reframe their usual medical approach, remind them of the importance of trauma informed care to garner patient trust and avoid the learned helplessness of complex medical and social care. Implementation will require ongoing local innovation and it will be important prevent misrepresentation of mnemonic items to avoid unintentional harms.

- Ms. S received an orthopedic consultation, a referral to affordable housing through a community organization, and social work assisted in finding future job opportunities. Low risk drinking guidelines were reviewed and a list of resources offered to support alcohol reduction. The patient was connected to primary care and ongoing case management to consider possible cognitive behavioural therapy programming for her anxiety.

Now is the time for the H.O.U.S.E. medical mnemonic to shine with permanent supportive housing and income interventions and harm reduction strategies that will mitigate the consequences of the COVID-19 pandemic. Just like Advanced Trauma Life Support (ATLS) and hemolytic agents have mitigated the high cost of myocardial infarctions, it is time for H.O.U.S.E and its effective housing interventions to launch training and community programs that will ensure timely and effective team-based care. Indeed, it may inspire greater emphasis on mental health outcome research on precarious housing that will lead us into a stronger post-COVID-19 era.

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