Long-Term Effects of Housing First for Homeless People with Mental Illness on Costs and Housing Stability

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Introduction

In Canada, there are estimated to be minimally 15,000 individuals experiencing homelessness on any given night.1 Housing First (HF), an intervention which provides immediate access to permanent housing and individualized support services, has proven to be an effective program to respond to chronic homelessness.2 Various studies have shown that HF is more effective than alternative treatments at achieving housing stability. The limited information on HF’s cost-effectiveness suggests that HF leads to cost offsets, but does not pay for itself.3 However, all previous economic studies of HF have focused on a follow-up time of two years or less, thus limiting assessments of long-term costs and effects. In response, this research focused on developing a simulation model to project HF’s effects on costs, and estimate cost-effectiveness using housing stability as the outcome measure, over a ten-year horizon.

Objectives

- To investigate the long-term costs, from the societal perspective, and effectiveness, in terms of days of stable housing for Housing First for individuals with mental illness, compared with treatment as usual.
- To assess how baseline participant characteristics alter cost-effectiveness.

Methods

At Home/Chéz Soi interventions: Individuals participating in the At Home/Chéz Soi trial were randomized to either HF or treatment as usual (TAU).
- HF: quickly assisted in finding and keeping housing, a rent subsidy so participants only had to pay 25% of their income, and 30% (if they were included in rent), and either intensive case management (ICM) if the participant was classified as having moderate needs (MN) or Assertive Community Treatment (ACT) if the participant was classified as having high needs (HN).
- TAU: received services that were normally available in their community.

Housing First’s Core Principles

- Individuals randomized to HF (202) were provided with direct access to permanent housing and individualized support services.
- Housing First participants were matched to 412.5 individuals in the TAU (168 in the HF group and 184 in the TAU group) provided mobile data. Preliminary results indicate that HF is both cost-saving and more effective than treatment as usual (TAU). Over ten years, HF participants averaged an additional 1,502 days in stable housing compared to TAU. The incremental cost-effectiveness ratio was negative, indicating that cost savings were cost-effective. Individuals who have a longer history of homelessness and higher need level had the largest cost savings. Savings stemmed from individuals in HF transitioning and staying in HF apartments at a higher rate than TAU participants. TAU participants tended to spend more time in expensive forms of unstable housing such as emergency housing and substance abuse treatment. Sensitivity analysis demonstrated results were robust.

Conclusion

This model illustrates the differences in cost-effectiveness of HF on clients’ needs level and housing outcomes. Overall findings suggest that HF (compared to TAU) is cost-effective in the long-term. Based on these results, expanding HF programs appears to be justified from an economic standpoint.

References


Acknowledgements

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Abstract

Background and objectives. Homelessness has been expanding in Canada and internationally. It significantly increases mortality and thus is a public health concern. Housing First (HF), an approach that involves providing immediate access to permanent housing and individualized support services, is a key component of strategies to end homelessness. The objective of this study was to develop a simulation model to project HF’s effects on costs, from a societal perspective, and housing stability, over a ten-year horizon.

Approach. A novel Excel-based platform, discretely integrated condition event (DICE) platform, was used to build a Markov simulation model. Cost and outcome data were derived from a previous study. The economic analysis was carried out from a societal perspective, modified to include disability benefits and social assistance costs and inflated to 2019 dollars. A novel Excel-based platform, discreetly integrated condition event (DICE) platform, was used to build a Markov simulation model. Cost and outcome data were derived from a previous study. The economic analysis was carried out from a societal perspective, modified to include disability benefits and social assistance costs and inflated to 2019 dollars.

Results

- The economic analysis was carried out from a societal perspective, modified to include disability benefits and social assistance costs and inflated to 2019 dollars.
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Conclusion

- Results suggest that a portion of the cohort will remain homeless over a ten-year horizon even with HF; however, HF remains effective at achieving stable housing for a portion of individuals.
- HF appears more cost-effective in the long term than in the short term.
- This model highlights how cost-effectiveness varies by subgroup suggesting baseline demographic differences influence cost-effectiveness.
- Cost savings stem from TAU cohorts transitioning into higher cost housing (such as substance abuse treatment facilities or emergency facilities) at a higher rate than HF individuals.

This research takes a step towards bridging the knowledge gap between short-term and long-term cost-effectiveness of Housing First. Even among cohorts where cost-effectiveness was lower, the cost per additional night of stable housing remained lower than the cost of a night in a shelter. This results strengthen the economic argument for the HF model for all adults experiencing chronic homelessness with severe mental illness.

Baseline Demographics

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Data Source

- Daily transition probabilities from the Montreal At Home/Chez Soi dataset
- Frequency of service use from the Montreal At Home/Chez Soi dataset
- Unit costs for type of place people were staying and service use unit costs were derived from a previous study
- The economic analysis was carried out from a societal perspective, modified to include disability benefits and social assistance costs and inflated to 2019 Canadian dollars
- Death rate from At Home/Chéz Soi Toronto extension study and the 2018 age-stratified general Canadian death rate

| Model: Cohort Markov model coded in Excel using a Discretely Integrated Condition Event (DICE) platform and run for 10 years
|---|---|
| A distinct cohort of individuals based on need level of care required (high or moderate), history of homelessness (less than 2 years or 2 or more years), and treatment group assignment (TAU or HF)
| Individuals transitioned through 10 housing states (e.g. street, emergency, or permanent housing) each with a corresponding residential and health, social, and justice costs net of income earners
| Base case analysis was performed using 2.5% “autonomization rate” (the proportion of participants who no longer need ACT or ICM services each successive year after two years), 3% discount rate, and a probability of death derived from the Toronto extension study paired with the age-stratified death rate of the general Canadian population that reflect health vulnerabilities of an individual experiencing homelessness (<15 years to the base age)

One-way sensitivity analyses were performed on the death rate (99% CI for the Toronto death rate < 10% vs. > 20 years general death rate), the discount rate (0% and 3%), and the autonomization rate (0% to 5%)