USING COMMUNITY DATA TO ADDRESS HOMELESSNESS
The Partnership:

A long-term community-level research project that started in 2011. It brings evidence to decision-makers at the shelter so they can make better policies. It generates place-based knowledge that incorporates expertise from key stakeholders including frontline practitioners and service users.
Scientific Rigor + Community Knowledge =
Social change at the shelter
LESS LINEAR, MORE ADAPTIVE PROGRAMMING

2010-2012

2013

2014
MORE COMMUNITY HOUSING SOLUTIONS!
Enough History...
Show. Me. The. Data!

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What is in our database?

90,000 people and counting (2002-today)
Base information:

Age
Gender
Length of stay
Ever banned from shelter

3800 transitional program clients and counting (2009-today)
Additional information:

Education
Case notes
Major health issues
Citizenship
Aboriginal status
Veteran status
Mental health issues

Reason for losing last apartment
Ever homeless before
Ever banned
Substance use issues
Psychosocial vulnerabilities
Disability

Eviction hx
Contact with family
Referrals
Closing survey
...and more!
Demographics
How prevalent are medical conditions?
11% have no self-reported problems
How is homelessness affected by life course?
Age distribution 2010-2015
Older individuals stay longer on average.

- **Seniors (65+):**
  - 2009: 53 days
  - 2015: 93 days

- **Older adults (50-64):**
  - 2009: 51 days
  - 2015: 69 days

- **Adults (25-49):**
  - 2009: 29 days
  - 2015: 38 days

Everyone is staying longer on average.
Number of clients over 50 years old

Years

Fitted Values

Forecast
Now for some more in-depth analysis!
How are people different psychosocially?
Latent Profile Analysis of OBM Transitional Clients

- Complex
- Income poor
- Isolated
- Relatively stable
Who returns to the shelter and why?
1 in 5 program clients have an imposed departure

65% of imposed departures return within a year

<30% of other departures return within a year
Family and friends SSM scores interact with departure to affect returns to the shelter!

<table>
<thead>
<tr>
<th></th>
<th>Predicted probability of return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>support</strong></td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>+ organized departure</td>
</tr>
<tr>
<td>✗</td>
<td>+ organized departure</td>
</tr>
<tr>
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✔️ = sufficient ✗ = insufficient
How do people use the shelter?

Short term?
Long term?
Somewhere in between?
HOW DO PEOPLE USE SHELTER SERVICES?

Percent of transitional program population 2013-2015 (k-means clusters)

- Temporary: 63%
- Episodic: 26%
- Chronic: 11%

Percent of shelter services used over observation year by k-means clusters

- Temporary: 30%
- Episodic: 29%
- Chronic: 41%

*for all clients who agreed to participate in research and who used the shelter between 2013 and 2015*
<table>
<thead>
<tr>
<th>Source</th>
<th>Chronique</th>
<th>Épisodique</th>
<th>Transitionnel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Définition</td>
<td>N (%)</td>
<td>Définition</td>
</tr>
<tr>
<td></td>
<td>Gouvernement de Canada (Stratégie contre l’itinérance)</td>
<td>Les individus qui sont actuellement sans abri et l’ont été pendant six mois ou plus au cours de la dernière année.</td>
<td>109 (10%)</td>
</tr>
<tr>
<td></td>
<td>Une définition construite par l’MOB</td>
<td>Les individus qui ont vécu au moins un épisode d’itinérance d’une durée d’au moins 6 mois au cours de la dernière année</td>
<td>109 (10%)</td>
</tr>
<tr>
<td></td>
<td>Analyse de groupage (comme on trouve dans Kuhn et Culhane (1998))</td>
<td>Les individus qui ont eu un séjour relativement long en comparaison aux autres dans l’échantillon et qui ont aussi vécu peu d’épisodes d’itinérance.</td>
<td>137 (12.5%)</td>
</tr>
<tr>
<td></td>
<td>Nombre de jours moyen [95% CI]</td>
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</tr>
<tr>
<td></td>
<td>Gouvernement de Canada (Stratégie contre l’itinérance)</td>
<td>271 [259, 283]</td>
<td>71 [62, 79]</td>
</tr>
<tr>
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<td>Une définition construite par l’MOB</td>
<td>271 [259, 283]</td>
<td>77 [71, 83]</td>
</tr>
<tr>
<td></td>
<td>Analyse de groupage (comme on trouve dans Kuhn et Culhane (1998))</td>
<td>247 [235, 260]</td>
<td>59 [54, 64]</td>
</tr>
</tbody>
</table>

Note: Dans tous les cas, un épisode est défini comme une période de temps entre les séjours consécutifs d’au moins 30 jours.
Une classification de la population du pavillon Webster (2014) selon la durée du séjour au cours de deux années. chronique, épisodique, et transitionnel. 
N= 659

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<tr>
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<td>Les individus qui ont eu un séjour relativement long en comparaison aux autres dans l’échantillon et qui ont aussi vécu peu d’épisodes d’itinérance.</td>
<td>56 (8.5%)</td>
<td>Les individus qui ont eu un séjour moyen en relation aux autres dans l’échantillon et qui ont aussi vécu plus d’épisodes d’itinérance.</td>
</tr>
<tr>
<td>Nombre de jours moyen [95% CI]</td>
<td>573.2 [535.5, 610.8]</td>
<td>Nombre de jours moyen [95% CI]</td>
<td>96.8 [77.6, 116.1]</td>
</tr>
</tbody>
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Note: Dans tous les cas, un épisode est défini comme une période de temps entre les séjours consécutifs d’au moins 30 jours.
... BUT WHY?
| Table 2. Bootstrapped Multinomial Logistic Regression Examining The Differences Between Temporary, Chronic And Episodic Service Users (N= 1288) |
|--------------------------------------------------|--------|--------|--------|--------|--------|
| Lifetime physical health problem                | Relative risk ratio, Chronic vs. Temporary | 1.27  | 0.76 | 0.54 | 1.35* | 1.01 | 1.82 |
| Mental health problem                           | Relative risk ratio, Chronic vs. Episodic  | 0.54 | 0.34 | 0.56 | 0.35 | 0.92 | 0.65 |
| Psychosocial vulnerability at program entry      | Relative risk ratio, Episodic vs. Temporary | 0.88 | 0.63 | 0.88 | 1.63 | 0.88 | 1.63 |
| Education                                        | 0.72  | 0.58 | 1.06  | 0.56 | 0.56 | 0.33 |
| Income                                           | 0.97  | 0.55 | 1.25  | 0.71 | 0.20 | 0.78 |
| Employment                                       | 0.08  | 0.33 | 0.87  | 0.52 | 1.45 | 1.00 |
| Housing                                          | 1.03  | 0.43 | 1.03  | 0.42 | 0.32 | 0.99 |
| Legal issues                                     | 1.14  | 0.65 | 0.83  | 0.45 | 1.54 | 1.38 |
| Life skills                                      | 1.56  | 0.38 | 0.81  | 0.46 | 1.44 | 1.17 |
| Mobility                                         | 1.56  | 0.38 | 0.81  | 0.46 | 1.44 | 1.17 |
| Community involvement                           | 0.56  | 0.32 | 1.12  | 0.54 | 1.09 | 0.54 |
| Safety                                           | 0.97  | 0.35 | 1.32  | 0.59 | 1.19 | 1.28 |
| Age of 50                                        | 1.83  | 1.14 | 1.29  | 1.23 | 0.24 | 0.92 |
| Over the age of 50                               | 0.77  | 0.42 | 0.62  | 0.34 | 1.13 | 1.02 |
| Disability                                       | 2.07**| 1.31 | 1.44  | 0.88 | 2.34 | 1.44 |
| Banned (ever)                                    | 2.73**| 1.73 | 1.04  | 0.63 | 1.95 | 2.02**|
| Days of past shelter use                         | 2.23**| 1.68 | 1.39**| 1.12 | 1.71 | 1.77**|
| Substance use problem # Support from Family and Friends | Relative risk ratio, Chronic vs. Episodic | 0.34**| 0.18 | 0.15**| 0.07 | 0.31 | 2.25**|
| Good support & History of substance use          | 0.64  | 0.31 | 0.21**| 0.10 | 0.45 | 3.03**|
| Good support & Current substance use             | 0.08  | 0.21 | 0.25**| 0.10 | 0.61 | 1.91* |
| Inadequate support & No substance use            | 0.11  | 0.45 | 0.25**| 0.12 | 0.50 | 3.26**|
| Inadequate support & History of substance use    | 0.31  | 0.45 | 0.16**| 0.07 | 0.36 | 2.24* |
| Inadequate support & Current substance use       | 0.36* | 0.16 | 0.16**| 0.07 | 0.36 | 2.24* |

Note. McFadden’s R²: 0.113, Cragg-UBR R²: 0.219
Log Likelihood Full Model: -1013.012, Prob > LR: 0.000
*P<0.05 **P<0.01
The chronic and temporary groups differed in a few areas:

- Those who were **OVER THE AGE OF 50** compared to those under the age of 50 had 1.83 times the risk of being classified as chronic compared to temporary.

- Those with a **HISTORY OF MENTAL HEALTH PROBLEMS** compared to those with no problems had 1.72 times the risk of being classified as chronic compared to temporary. Through the groups did not differ in terms of current mental health problems.

- Those with a **DISABILITY** compared to those with no disability had 2.07 times the risk of being classified as chronic compared to temporary.

- Those who had ever been **BANNED** from the shelter compared to those who had never been banned had 2.23 times the risk of being classified as chronic compared to temporary.
Chronic vs. Temporary

- Each one standard deviation increase in TIME SPENT IN SHELTER BEFORE RECRUIMENT to the study was associated with a 2.23 increase in risk of being classified as Chronic vs. Temporary.

- Several combinations of SUBSTANCE USE AND SOCIAL SUPPORT were predictive of chronic homelessness. For those with good support and lifetime substance use compared to those with good support and no substance use, contrary to what was expected, the risk of being Chronic compared to Temporary was decreased by 0.34 times. As well, those with inadequate support and current substance use compared to those with good support and no substance use had a 0.36 times decreased risk of being classified as Chronic vs. Temporary.

- No other psychosocial variables were predictive of chronic homelessness
The chronic and episodic groups differed in a few areas:

• Those who were **OVER THE AGE OF 50** compared to those under the age of 50 had 1.99 times the risk of being classified as Chronic compared to Episodic.

• Each one standard deviation increase in **TIME SPENT IN SHELTER BEFORE RECRUIMENT** to the study was associated with a 1.77 increase in risk of being classified as Chronic vs. Episodic.

• In this comparison group, every combination of **SUBSTANCE USE AND SOCIAL SUPPORT** was predictive of chronic homelessness. The risk of being Chronic vs. Episodic was **decreased** by between 0.15 and 0.25 times compared to those with no substance use and good social support. For example Those with inadequate support and current substance use had 0.16 times the risk of being Chronic Vs. Episodic compared to those with good support and no substance use.
The episodic and temporary groups differed in a few areas:

• Those with a HISTORY OF PHYSICAL HEALTH PROBLEMS compared to those with no history of physical health problems had 1.35 times the risk of being classified as Episodic vs. Temporary.

• Each one standard deviation increase in TIME SPENT IN SHELTER BEFORE RECRUIMENT to the study was associated with a 1.77 increase in risk of being classified as Episodic vs. Temporary.

• In this comparison group, every combination of SUBSTANCE USE AND SOCIAL SUPPORT was predictive of episodic homelessness. The risk of being Episodic vs. Temporary was increased by between 1.91 and 3.26 times compared to those with no substance use and good social support. For example Those with inadequate support and current substance use had 2.24 times the risk of being Episodic vs. Temporary compared to those with good support and no substance use.
Episodic vs. Temporary

• Those who had ever been BANNED from the shelter compared to those who had never been banned had 2.02 times the risk of being classified as Episodic compared to Temporary.

• No other health or psychosocial variables were predictive of episodic homelessness
But wait! Before you get too excited...
When we actually tested the model against real data, its performance was... not great:

- Only 11% of those who were chronically homeless in real life were properly classified as chronically homeless using our model.
- Similarly, only 21% of those who were episodically homeless in real life were properly classified by our model.
But our overall model fit was good! How can this be?

- This is probably because it did a great job of classifying the Temporary homeless. Over 93% were correctly predicted with the model.
- The overall fit statistic does not take each group into account separately. It looks at an average for all three groups. This high predictive ability for the temporary group drove up the overall fit statistic to acceptable levels.
Policy implications

• This means that while there are certain individual characteristics that might be considered risk factors, using them to preferentially assign services will probably be ineffective in the fight to prevent chronic homelessness.

• We can’t reliably predict who is going to become chronic based on the personal information that they give when they enter the shelter or based on counselor assessment. Therefore, providing Housing First and other supportive services to all individuals who qualify remains the most valid way to administer services and housing.
Next Steps
Qualitative & Mixed-Methods Studies