BUILDING CAPACITY THROUGH RESEARCH: TRAINING HOUSING INSPECTORS AND COMMUNITY RESEARCHERS FOR FEHNCY

March 12th, 2020
PRESENTATION OVERVIEW

- Background and objectives
- Study Design and Methodology
- Study requirements in the community, role of community researchers, **housing inspector training and hiring local housing inspectors**

**Video Interlude**

- Housing inspection and measuring indoor air quality
- Capacity building and Community-led research
- Knowledge Translation
- Sampling and Timeline
- Your input
• First Nations communities are young
• Health disparities between First Nations youth and rest of population; poor nutrition, food insecurity, housing
• Exposure to contaminants worse if nutrition poor
• Youth and children may be more vulnerable to the effects of environmental hazards
• On-reserve housing falls below the CMHC standards
• Poor indoor air quality is one of the main factors that contribute to chronic respiratory diseases (CRD)
SOME RESPIRATORY ISSUES RELEVANT TO the HOME ENVIRONMENT

• **Wood stoves**
  - Studies have associated high levels of NO₂, SO₂ with coughing, wheezing, bronchiolitis
  - CO is related to reduced O₂ delivery, heart attacks & strokes (adults), risk to fetus

• **Mold**
  - High concentration of airborne or settled dust associated with bronchiolitis, pneumonia, (1,3)-Beta-D glucan (mold marker) associated with new or continuing allergic asthma
  - Endotoxins associated with acute respiratory infections

• **Particle pollution**
  - (PM 2.5) Increased susceptibility to infections
Knowledge gap

- First Nations children and youth
  - Dietary intake
  - Traditional food use
  - Exposure to chemicals in the environment
- Food and built environment
- Housing conditions and indoor air pollution
In support for The Food, Environment, Health, and Nutrition of First Nations Children and Youth (FEHNCY) Study
FEHNCY will build on and be comparable to previous studies including:

- **FNFNES** (First Nations Food, Nutrition and Environment Study)
- **FNBI** (First Nations Biomonitoring Initiative)
- **JES!-YEH!** (First Nations Youth Environment and Health Pilot Study)
- **CHMS** (Canadian Health Measure Survey)
- **RHS** (Regional Health Survey)
Overall Goal

• Help inform government policy and community programming recommendations geared towards the improvement of First Nations children’s health

• Build capacity within communities and AFN regions to address nutrition and environmental health, and housing issues through partnerships and community participation
Study Collaborators

Participating First Nations communities

University of Ottawa
(Dr. Laurie Chan, Dr. Tom Kovesi)

Université Laval
(Dr. Mélanie Lemire, Dr. Richard Belanger, Dr. Pierre Ayotte)

Health Canada
(Dr. Jiping Zhu)

McGill University
(Dr. Treena Delormier, Dr. Mylene Riva)

Assembly of First Nations
(Dr. Tonio Sadik, Irving Leblanc)

Université de Montréal
(Dr. Malek Batal, Dr. Genevieve Mercille)
Study Components

Component 1: Food Environment, Food Security, Nutrition, and Health

Component 2: Housing Conditions, Indoor air Quality and Respiratory Health

Component 3: Exposure to Environmental Contaminants and Social Determinants on Health

Component 4: Community Mobilization and Integrated Knowledge Translation for Intergenerational Capacity Building
6 Research Ethics Boards

Canadian Institute of Health Research (CIHR) guidelines

Promote health through research that is in keeping with Indigenous values and traditions.

**Principles of Ownership, Control, Access and Possession (OCAP™)**

- Each community owns its community data and receives a full dataset following completion of the study.
- FNIGC will securely store a backup copy of the data on behalf of the First Nation and will not use or provide it to anyone unless explicitly directed to do so by the community.
1. Scope of the Project, Methods and Procedures
2. Responsibilities and Involvement
3. Informed Consent and Confidentiality
4. Expected Outcomes, Benefits and Risks
5. Data Management, Ownership, and Dissemination of Results
Part 1. Participatory and Qualitative Research

- Participatory Mapping with Children and Youth
- Key Informant Interviews
- Food availability, cost, and quality/freshness in most common community stores
Part 2. Household Questionnaire and Inspection

- Up to 100 Households per community
- Questionnaire focusing on data that has not been available previously for First Nations children and youth
  - Dietary intake
  - Traditional food use
  - Access to traditional and store-bought food

- Housing conditions and indoor air quality
  - modified CMHC tool
  - thorough Household Inspection including assessment of mold and conditions that could cause mold to form
  - Indoor Air Quality Monitors and dust collection, radon monitors
Part 3. Mobile Clinic

- Child general health (including respiratory health) and lifestyle questionnaire
- Anthropometry
- Blood pressure
- **Pulmonary function** - spirometry
- Biological sample collection for contaminant exposure (blood, urine and hair)
First Nations Guided Research: study requirements in the community

Chief and Council
- support the FEHNCY project, CRA, FTA, BCR
- recommend key champions and help hire CRMs

Community Advisory Committee
- members of participating communities
- bring unique knowledge and leadership to help guide the study to effectively achieve its goals

Health Centre or Clinic
- FEHNCY mobile clinic will require extra room to conduct its research activities while in the community
- local health staff must be consulted to plan follow-up for abnormal results.

Community Research Manager (CRM)
- help hire and lead a team of 2 Community Researchers and follow-up with them on a daily basis to ensure data quality
- coordinate the FEHNCY study activities in the community including engagement activities such as opening ceremonies and feasts

Community Researchers (CR)
- conduct interviews with key informants
- administer questionnaires with community members
- help in mobile clinic
Responsibilities of the Community Housing Inspector

- Attend 3-4 day training
- Work with the CRM and CR to schedule home inspections, attend meetings to debrief, update
- Complete home inspections and short accompanying housing survey related to home conditions.
- Work with CRs to install indoor air quality monitors and collect house dust samples.
- Record housing inspection observations and housing survey on tablet in the household
- Complete approximately 20 to 40 home inspections (approximately 1.5-2 hrs), for period of 1.5 months)
Housing Inspector Training

- Training on home inspection skills, including exteriors and interiors, as well as skills in administering survey questions, installing several types of indoor air quality monitors and collecting house dust samples, radon detectors, VOC tubes

- Support from Regional Tribal Councils

- Certified housing inspectors

- Potential for certification of HIs in First Nations communities
Household Inspection Form and Questionnaire - modified CMHC

1. Participant's Information

   Community Number: ______
   Randomly assigned Household Number: ______
   Householder's Identification Number: ______
   Date: ______

2. House Investigator's Information

   Last name: ______
   First name: ______

3. Occupant Information

   Length of occupancy in current dwelling (in years): ______
   Type of ownership: 
   - First Nation-owned
   - Private
   - Rental
   - Don't know
   Notes: ______

4. Building and Site Characteristics

   Building type: ______
   - Single-detached
   - Semi-detached
   - Row house
   - Apartment
   - Cabin
   - Other (specify)
   For the first three building types, specify floor(s): ______
   - First floor
   - Basement
   - Attic
   - Other

Radon Detectors - 3 months, remediation protocol

YES-AIR IAQ Monitor - 5-7 days

OMEGA Vacuum Sampler and dust sock: endotoxin, D-glucan

VOC tube – suite of volatile organic compounds
Interlude:
FEHNCY Housing Inspection Video Consent
6min37sec

Conduct a housing Inspection
Document Visible Mould
Collect Dust Samples
Install Indoor Air Quality Monitors
Integrated Knowledge Translation (IKT)

- Ongoing partnerships between researchers and knowledge users in the production of knowledge for mutually beneficial research project to support action; partnership with communities and other stakeholders throughout the entire research process, from the development of the research question to interpretation and dissemination of the results

Different Levels of Knowledge Translation in FEHNCY:

- Participant Portfolio- individual health report
- Indoor Air Quality Summary report- household report
- Community report
- Regional Summary and Regional release
- Data training workshop
- Development of IKT tools based on study findings
Dissemination of IAQ results to participants

Less than 4 months after the end of data collection, each participating household will receive an Indoor Air Quality Summary Report stating how the air in their household compares to other households in the community.

Includes:

• Average temperature
• Relative Humidity
• Ventilation
• Indoor Tiny Particles in Air
• Indoor Molds
• Radon
• Issues Specific to Your House
• Improving Indoor Air Quality

Ventilation:

We assessed how good the ventilation (movement of fresh air into your house, and removal of stale air) was in your house. Houses that are "tight" may trap more air pollutants indoors, such as viruses and cigarette smoke.

Houses that have reduced ventilation may need to rely more on fans for ventilation. If your house has reduced ventilation, you should consider running the ventilation system, or a bathroom or kitchen fan, more often, to improve ventilation. This is especially important if there are a lot of people living in, or visiting, the house. If your house has an HRV, make sure that it’s working properly, and the filters have been cleaned, as this will reduce humidity in your house. You can ask Housing to inspect your HRV.

Indoor Tiny Particles in the Air:

We measured very tiny dust particles in the air in your house. These are called PM_{2.5}. High amounts of dust in the air usually caused by wood smoke back-drafts (instead of smoke leaving the house through the chimney), and/or by cigarette smoking inside. High levels of PM_{2.5} can increase the chances of lung problems such as lung infections or asthma in children, or asthma or chronic bronchitis in adults.

You can reduce PM_{2.5} by burning dry or seasoned wood (wood that has been dried at least 6 months outside), burning more logs at once (so you open the stove door to reload less often), burning hardwood, keeping the fire hot, and burning solid wood (never garbage, plywood, or particleboard). Make sure there are no leaks in your chimney. It’s also important to ask people smoke cigarettes only completely outside (not in an enclosed porch). You can also reduce PM_{2.5} by improving ventilation (see above).
Data collection in 2 pilot communities – spring 2020

YEAR 1 – ATLANTIC
3 First Nations in the Fall 2020, 3 First Nations in the Spring 2021

• Methodology workshop (July 2020)
• Negotiation of Community Research Agreement and signing of Funding Transfer Agreement (August 2020)
• Identification of knowledge carriers for intergenerational capacity building (August, 2020)
• Hiring of Community Research Manager (August 2020)
• Hiring of Community Researchers, Housing Inspectors (September 2020)
• Opening Ceremony and Feast (September 2020)
• Consultation with Local Health Professional for engagement in Mobile Clinic activities (September 2020)
• Data Collection (October-December 2020)
• Closing celebration (December 2020)
• Meeting with community members: Interpretation of report cards (January-Feb 2021)
• Discuss Priorities and Recommendations for Action (June 2020)
• Community Report and Presentation (September 2021)
• Results and Data Training workshop (January 2022)
• Regional release (February 2022)
Random Sampling

• 1 region per year, random selection of 6 First Nations communities per region (2 small/remote, 2 medium non-remote, 2 large non-remote) [BC, ON]
• Random sampling of 100 households per First Nation
• Random sampling within the household of the child or youth between 3-19 whose birthday is next
• Representative
Proposed Sampling over 10 years (2020-2028)

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Food, Environment, Health and Nutrition of First Nations Children and Youth
• What are the housing priorities in your community?

• What should be the focus of this study with regard to measuring IAQ, and respiratory health?

• What is the best way to engage the housing sector at the local and regional levels?

Thank you

QUESTIONS?
For more information: fehncy@uottawa.ca
Or by phone at: 613-562-5800 ext. 7214