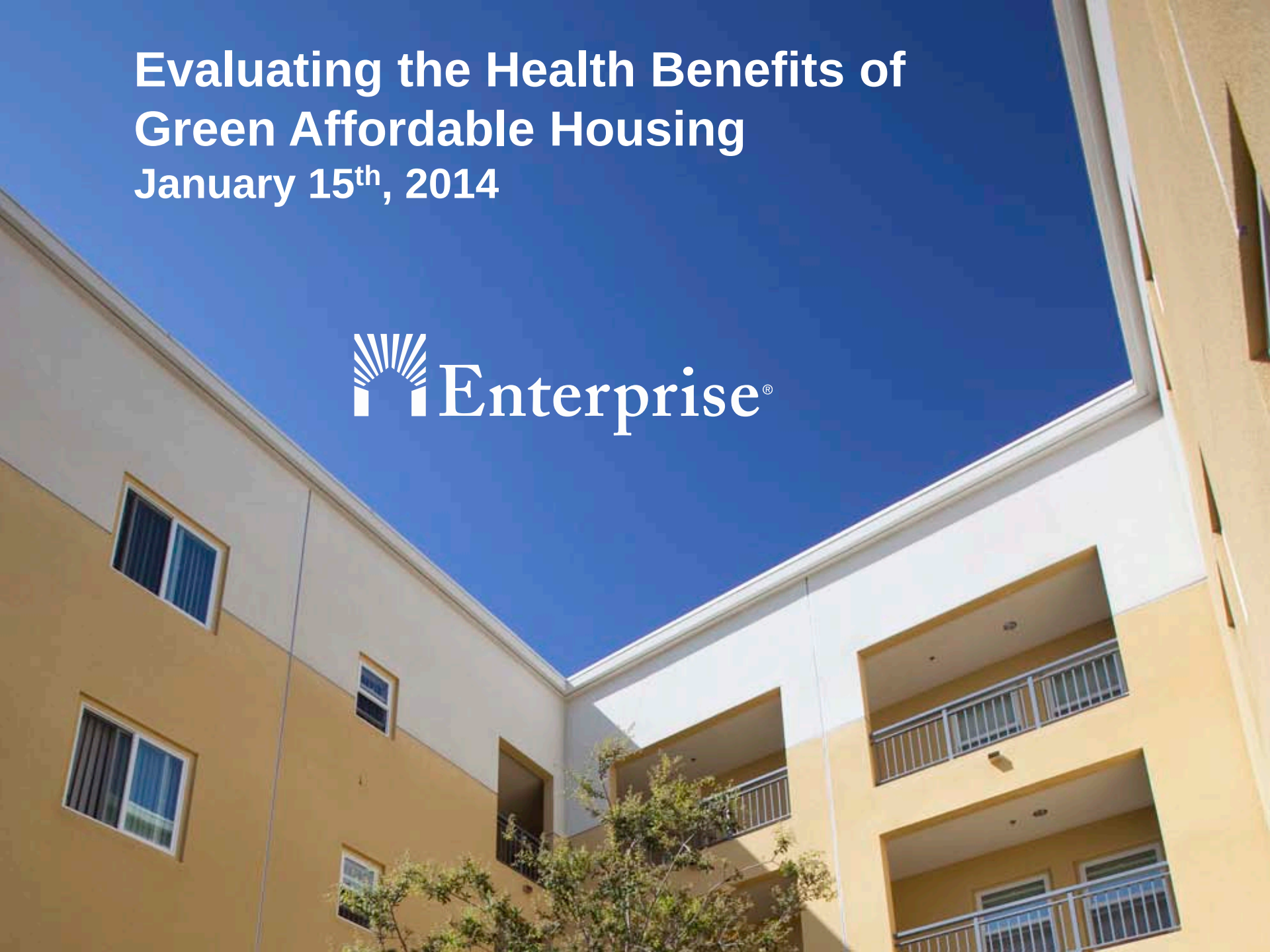
Evaluating the Health Benefits of Green Affordable Housing

January 15th, 2014



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Health and Housing Funder's Forum and The Funder's Network

Green Housing Study Briefing

Session Agenda

- ❑ Introduction
- ❑ Study Goals & Hypotheses
- ❑ Next Steps
- ❑ Discussion

Enterprise Green Communities

Launched in 2004, Enterprise Green Communities is an effort to ***transform the way we locate, design and build affordable homes*** *and to forge a powerful coalition of housing, health and environmental stakeholders to advance this shared vision.*

Enterprise green communities®

Integrative Design

Site Improvements

Water Conservation

Energy Efficiency

Location + Neighborhood Fabric

Materials Beneficial to the Environment

Healthy Living Environments

Operations + Maintenance

2011 Enterprise Green Communities Criteria

IAQ Control Strategies

1. Remove Pollutants

   Materials with low toxicity, smoke-free building

2. Seal or Isolate

   Radon Mitigation, garage isolation

3. Ventilate

   Local exhaust, whole-building ventilation

4. Filter

The Return on Investment of Healthy Housing

Enterprise®

Funders

- JPB Foundation
- Kresge Foundation
- Wells Fargo
- MacArthur Foundation (substudy)

National Center for Healthy Housing

Enterprise®

National Center for Healthy Housing

Study Hypotheses

- Green housing renovations will reduce health care utilization of children with asthma from baseline to one year after interventions
- Green housing renovations will improve the self-reported general physical and mental health of adults and children one year after intervention

www.EnterpriseCommunity.org/green

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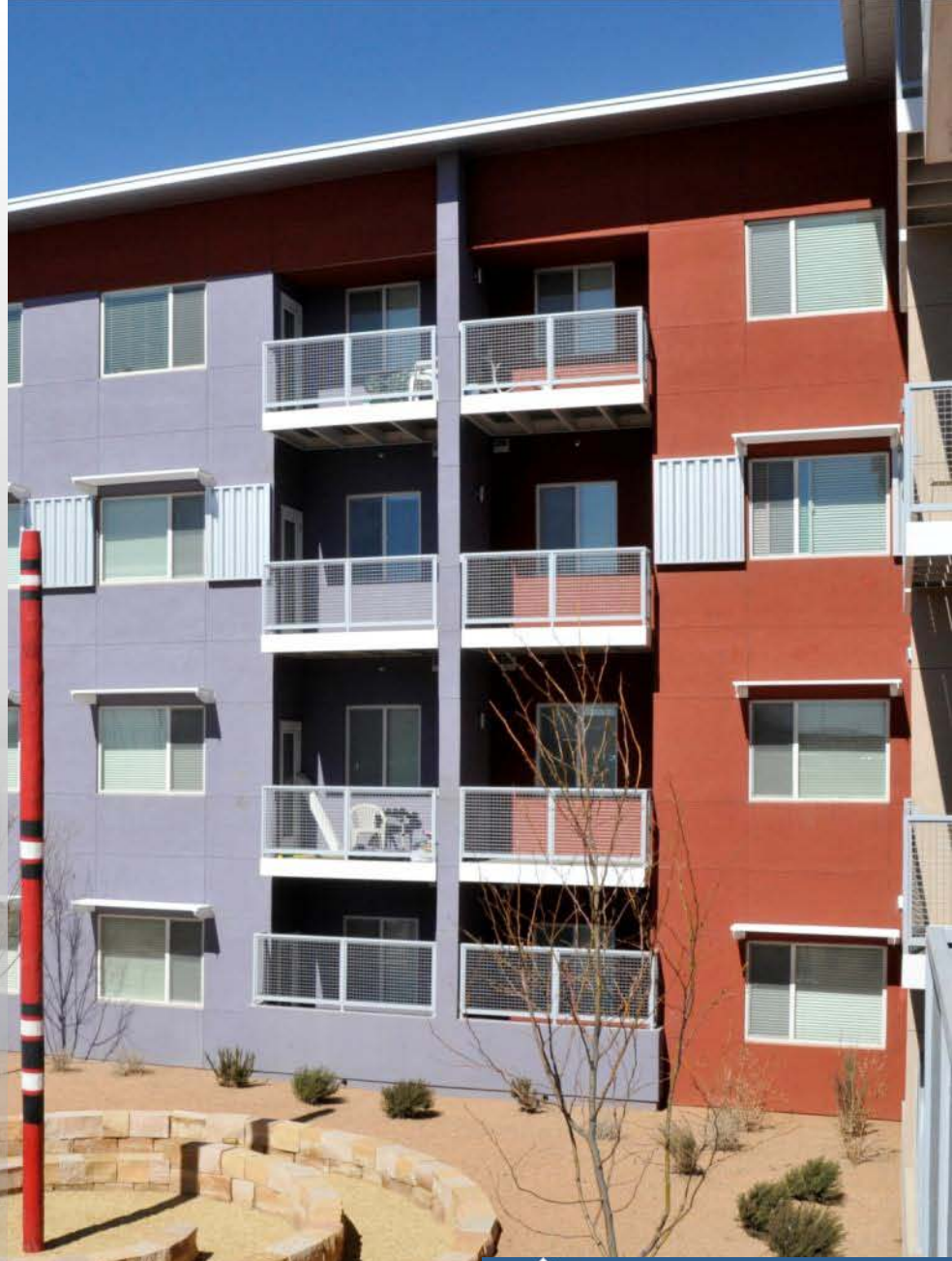
Study Partners

- Enterprise Community Partners
- National Center for Healthy Housing
- Icahn School of Medicine at Mt. Sinai (New York)
- University of California, San Francisco & San Francisco Department of Public Health
- Midwestern site (TBD)
- University of Colorado (Health Economist)



National Center for Healthy Housing

Advisory Committee Members

Name	Organization	Expertise
Peter Ashley	HUD	Health Assessments
Ginger Chew	CDC	Lab Analysis
Jim Krieger	Seattle King County Health Dept.	Asthma Study Design
Charles Michalopoulos	MRDC	Economic analysis
Herman Mitchell	University of North Carolina	Statistical analysis
George O'Connor	Boston University	Pulmonary lung function testing
Edith Parker	University of Iowa	Community Based Research
Jack Spengler	Harvard University	Environmental Sampling

Study Timeline

- Seven (7) year study period
  - 0.5 years design phase
  - 3 years recruitment/enrollment/baseline collection
  - 1 year construction/pre-move in assessment
  - 1 year post-construction assessment
  - 1 year data analysis/reporting
  - 0.5 years data dissemination

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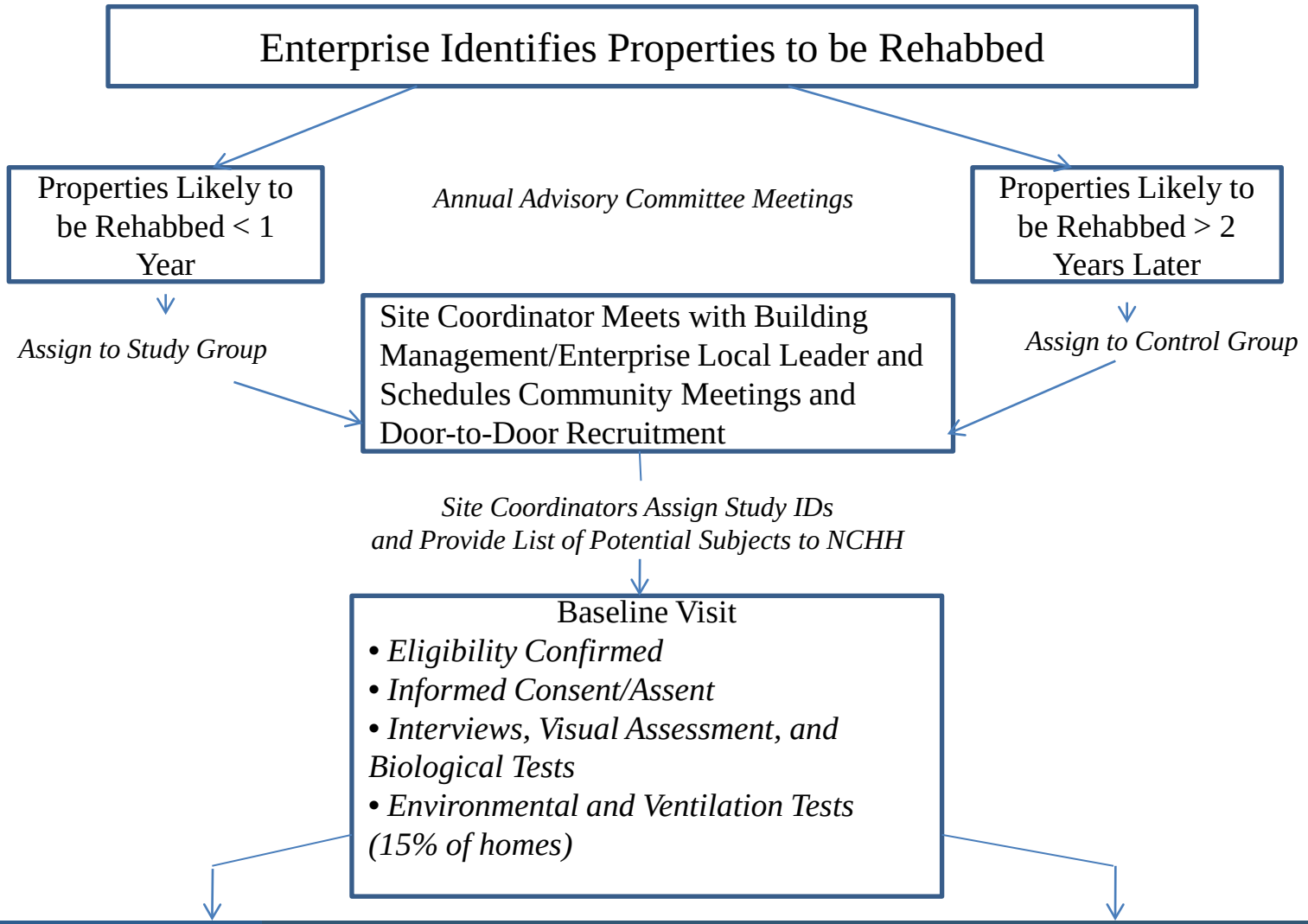

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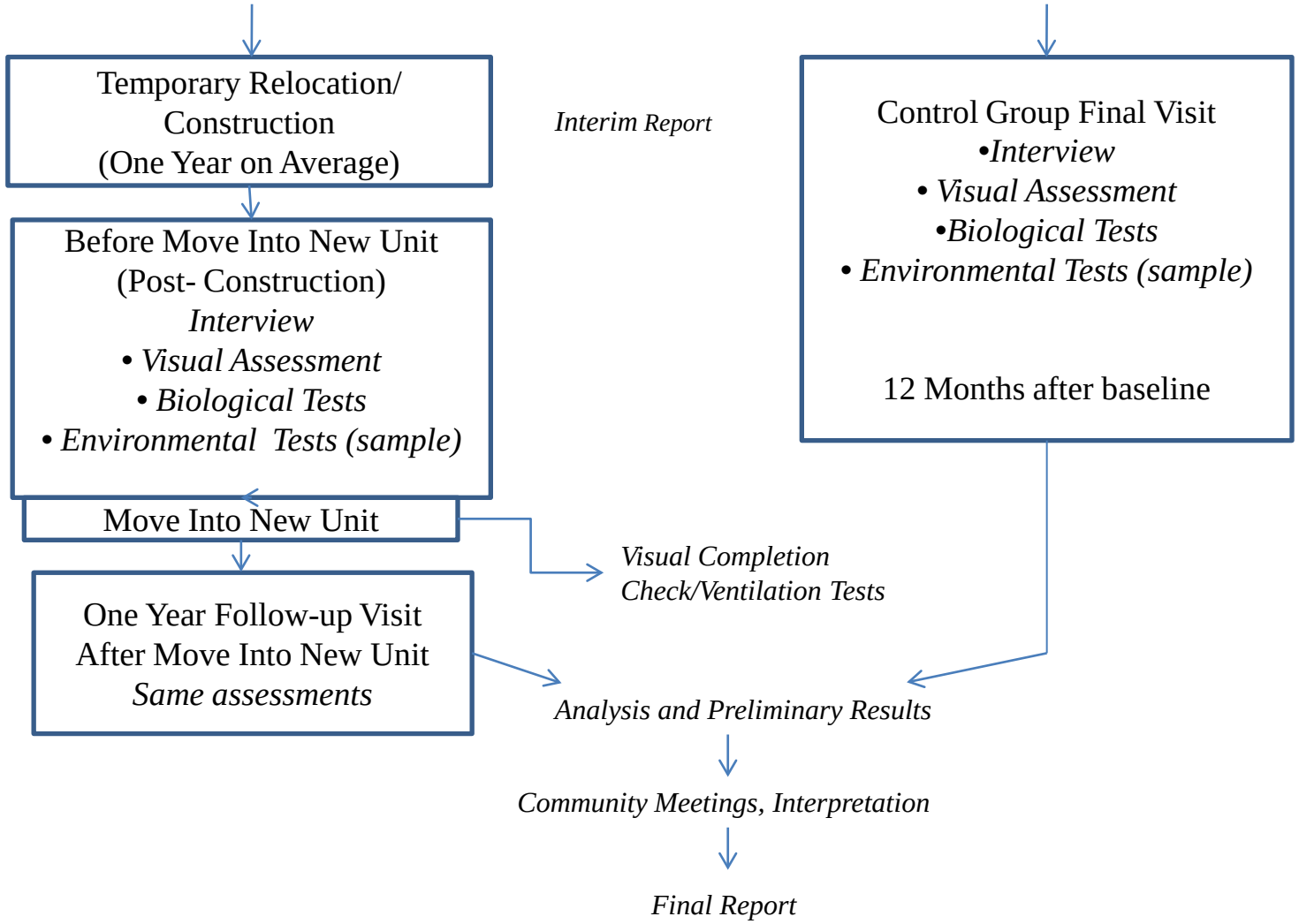

Study Population

- 1,226 children with asthma enrolled at baseline with a goal of retaining 711 children (58%) at one-year following move-in after the construction is completed

- One control household for every two study households ~ target: 474 children in the study group and 237 children in the control group at one-year

Data Collection Methods

- Self-Reported Health/Stress – Children/One head of household
- Visual Assessment of Unit – All dwellings
- Medical Testing of Index Child (Spirometry (Lung Function), eNO (airway inflammation, and Hair Cortisol (Stress),) All dwellings
- Environmental Sampling (CO, CO2, VOC, PM2.5, Noise, Allergens in Settled dust in Kitchen and Bedroom) in 15% of dwellings
- Bldg Ventilation Testing (Blower Door, Exhaust & Supply Air flow rates) Comply with ASHRAE 62

Health Care Utilization Measures

- The analysis plan calls for taking the asthma-related health care utilization data reported by study participants and apply average regional health care costs for each activity (e.g., urgent care visits, hospitalizations, use of medicines). The difference in costs between one year pre-enrollment to one year post-construction will be examined.

Medicaid Substudy Hypotheses

- The annual costs to Medicaid for *children with asthma* **will be lower in dwellings renovated to Enterprise Green criteria** than before the renovation.
- The annual costs to Medicaid for residents receiving the benefit **will be lower than before the renovation** because of general health improvements.

Medicaid records of individual participants

- Obtain records from all three states
- Analyze costs for asthma-related healthcare events
- Compare healthcare utilization one year before the renovation and one year after the renovation
- Estimate total costs savings to Medicaid
- Use data to verify healthcare cost assumptions in main study and possibly identify other healthcare utilization changes

Current Status of Project:

Design Phase:

- Convened Advisory Committee: July 2013
- Enlisted Economist Jon Campbell: July 2013
- Refined and finalized Study Protocols: May - Oct 2013
- Institutional Review Board Submission: Nov 2013
- Institutional Review Board Approval: In Process

Upon IRB Approval, Participant Enrollment to begin in early 2014

Thank You!

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