

# A Study of Immigrant Housing Conditions in Commerce City, CO



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# Dedication

Alyssa Heberton-Morimoto

We will remember her for her spirit, her generosity, her determination and her willingness to take risks.

1983-2007



# Presentation Overview

- To introduce “Hogares Sanos, Ninos Sanos,” a healthy homes technical study in Colorado.
- To describe preliminary results from home visits conducted between 2005-2007.
  - Content area: residential hazards and related health effects.
  - Geographic focus: Historic Commerce City
  - Focus: injury, lead, and asthma/allergy
  - Eligibility:
    - Monolingual Spanish-speaking families
    - Families living in the US 10 years or less.
    - Families with children 18 years or younger

# Specific Aims



- Establish Healthy Housing Network in support of community-academic partnership.
- Develop and implement outreach and education strategies.
- Characterize housing conditions and related health hazards.
- Examine state and local housing policies and services.

# Why Residential Environments?

- Hazards in the home have been shown to cause adverse health effects among children.
  - Lead-based paint; dampness and fungi; pests; rodents; chemicals, fine particulate matter and CO, and fire, fall and electrical hazards.
  - Underlying causes are rooted in structural and maintenance issues, heating, water damage, and excess moisture.
- Home hazards tend to concentrate in deteriorated housing in low-income and/or transitional neighborhoods.

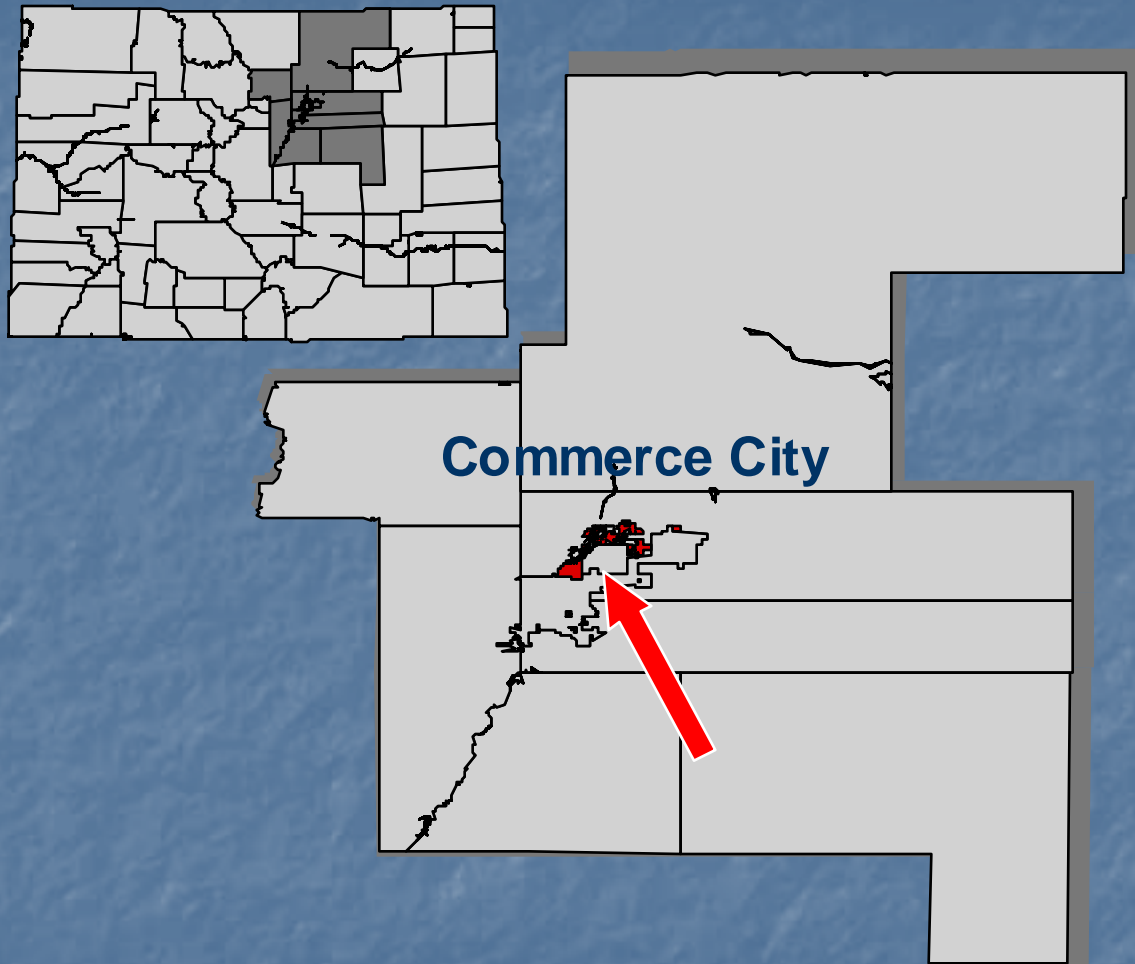
Citations: Lanphear (2002); Brunekeef (1989); DiGuseppi (1998); Shai (2006); Jacobs (2002); Klitzman, S. (2007)

# Why Monolingual Spanish-Speaking Families and Children?

- Latinos are the largest minority group of children in the US, representing more than 12 million (1 in 6 children).
- Latino children in the US experience disproportionate exposures to home and neighborhood hazards.
- Such exposures may contribute to higher rates of asthma, lead poisoning, and injury among this population.

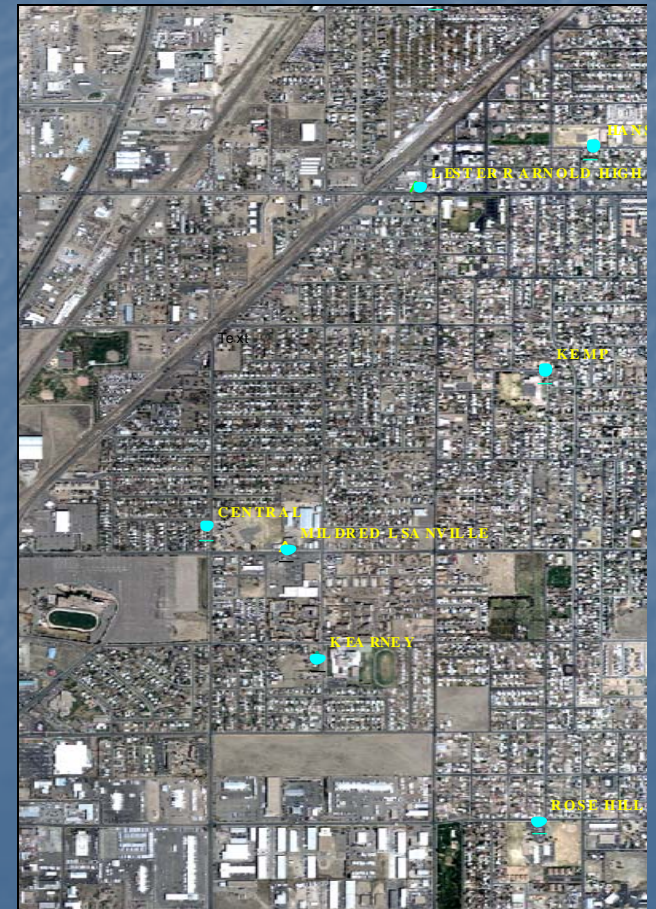
Citations: Carter-Pokras (2006); American Community Survey, Census, 2006

# Why Colorado?



20 percent of the Colorado population is Latino (934,410).

30 percent of the Latino population are under 18 years



# Why Commerce City?

Population: 27,452

Percent Hispanic: 52% (US: 12.5%)

Percent < 18 years of age: 32%

Percent < 6 years of age: ~10%

Education:       42% Less than HS degree  
                       34% HS or equiv  
                       24% Some college +

Language:  
     18% do not speak English "very well"  
     38% speak a language other than  
     English at home.

Foreign born: 20%

Citizenship: 79% are not citizens.

Race/Ethnicity	Commerce City %	Commerce City #
White	66.1	18,153
Black or African American	1.8	489
American Indian or Alaskan Native	1.1	302
Asian	1	278
Native Hawaiian and Other Pacific Islander	0	5
Some other race alone	25.6	7,016
Two or more races	4.4	1,209
TOTAL	100	27,452
Not Hispanic or Latino	47.7	13,097
Hispanic or Latino	52.3	14,355
TOTAL	100	27,452
<b>Age</b>		
Less than 5	8.7	2,384
5 to 12	14.6	4,005
13 to 14	2.7	751
15 to 18	6.2	1,705
19 to 24	9.6	2,646
25 to 34	15.7	4,302
35 to 44	14.5	3,988
45 to 54	11.8	3,244
55 to 64	7	1,926
65 +	9.1	2,501
TOTAL	100	27,452
<b>Household Income</b>		
< \$25,000	34	2,968
\$25,000 to \$49,999	36.5	3,187
> \$50,000	29.5	2,581
TOTAL	100	8,736



# Understanding Healthy Homes ...

<i>Intermediate Outcomes</i>	<i>Mold</i>	<i>Other Allergens</i>	<i>Fire</i>	<i>Air Quality (CO, PM2.5)</i>	<i>Lead</i>
Hazards					
Heating / Cooling	✓	✓	✓	✓	
Stains/ Dampness	✓	✓		✓	✓
Mold/Odor	✓	✓		✓	
Pests/Pets/Insecticides		✓			
Fire Escape		✓			
Smoking/Combustibles			✓	✓	
Gas Stoves/ Ventilation				✓	
Lead (blood, paint, env)					✓

# Approach



- Health Interview and Inspection (n=250)
  - Risk factors for asthma, allergy, injury, and lead poisoning
  - Markers of exposure: safety practices, lead paint, air quality, allergens, structural form
  - Perceived neighborhood environment
- Environmental Sampling
  - Lead: dust, soil, paint
  - Air: allergens (cat, cockroach, dust mites), CO, PM2.5
- Biomonitoring
  - Blood lead levels
- Interventions
  - In-home education on hazards found in home (n=251)
  - Minor repairs on subset of homes (n=25)

# Results: Demographics

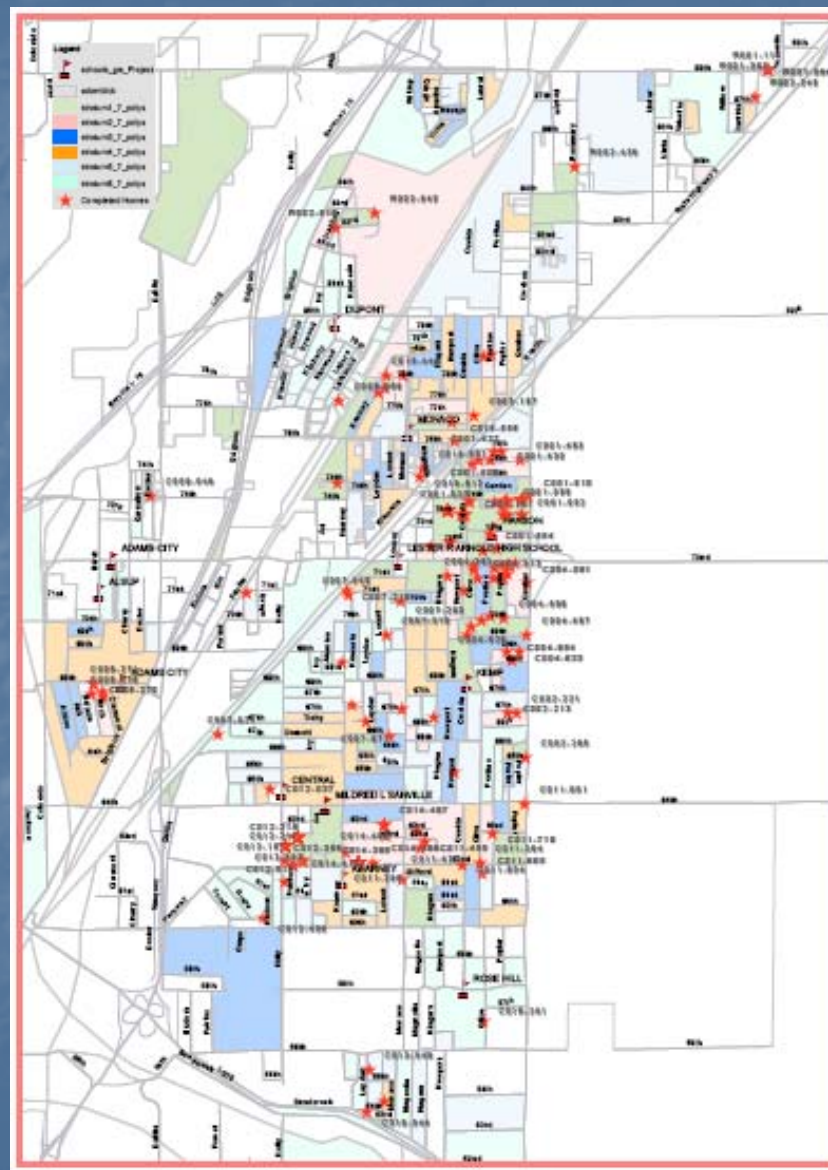


Demographics	Study Area #	Study Area %
<b>Hispanic or Latino</b>	251	100
<b>Age</b>		
18-19	12	5
20-24	34	14
24-29	70	28
30-39	97	39
40-49	27	11
50-59	9	3
<b>Gender</b>		
Female	227	90
Male	24	10
<b>Education</b>		
Elementary or Middle	89	35
High School or Vocational School	140	56
Some College	8	3
College Degree +	13	6
<b>Income</b>		
< 24,999	183	75
25,000-49,999	58	24
>=50,000	2	1
<b>Occupation (Male)</b>		
Construction	111	44
Other	140	56
<b>Occupation (Female)</b>		
Homemaker	173	69
Works outside home	78	31



# Results: Housing and Family Characteristics

Housing and Family Characteristics	Study Area #	Study Area %
<b>Housing Type</b>		
Single Family Detached	91	36
Duplex or Two Family	38	15
Row or Town Home	36	14
Low Rise Apt	44	18
High Rise Apt	1	<1
Trailer/Mobile Home	34	14
Quonset Home	6	2
<b>Age of Housing</b>		
Pre-1940	5	2
1940-1959	111	44
1960-1977	62	25
1978+	54	22
Unknown	19	8
<b>Occupancy</b>		
Renter-Occupied	163	65
Owner-Occupied	88	35
<b>Persons Living in HH</b>		
HH with Children < 6	202	80
Average Children per HH		2.3
More than 1 family in HH	64	27
<b>Length of Residence</b>		
Less than 1 year	101	40
1-4 years	117	47
5+ years	33	13



# The Home Environment: Mold

Evidence of Mold		Study Area #	Study Area %
<b>Damp Areas</b>			
	Yes	48	20
	No	198	80
<b>Water Stains</b>			
	Yes	50	20
	No	198	80
<b>Visible Mold</b>			
	Yes	103	42
	No	144	58
<b>Mold / Musty Odor</b>			
	Yes	46	19
	No	198	81
<b>Presence of Any Dampness</b>			
	Yes	149	61
	No	94	39
<b>Dampness Score: Mold Presence</b>			
	No Households	94	39
	1 Hazards	37	16
	2 Hazards	32	14
	3 Hazards	29	13
	4 Hazards	20	9
	5 Hazards	13	6
	6 Hazards	4	2
	Mean Symptoms of Mold		1.6
	Median Symptoms of Mold		1



# The Home Environment: Air Quality

Predictors of Air Quality	Study Area #	Study Area %
<b>Road Category</b>		
Major arterial	4	2
Primary or Secondary	12	5
Collector Road	17	7
Local Traffic Street	215	86
<b>Ventilation</b>		
Stove w/o Adequate Venting	211	84
Stove w/ Adequate Venting	40	16
Gas Stove w/o Adequate Venting	103	81
Gas Stove w/ Adequate Venting	24	19
<b>Sources of Heat</b>		
Forced Air	228	91
Radiator	2	1
Electric Space Heater	8	3
Electric Base Board	3	1
Natural Gas	0	0
Other	8	3
<b>Central Cooling</b>		
No	133	53
Air Conditioning	42	17
Swamp Cooler	45	18
Other	21	8
<b>Smoking</b>		
Yes	95	38
No	155	62
<b>Burning Solid Combustibles</b>		
Solid Combustible Fuel	7	3
Cigarette Butts	9	4
Cigarette Odor	15	6
Candles	14	6



# The Home Environment: Fire-Related Hazards

Fire Hazards	Study Area #	Study Area %
<b>Presence of Any Fire Escape Hazard</b>		
Yes	202	81
No	48	19
<b>Fire Escape Hazard Score</b>		
No Hazards	48	20
1 Hazard	80	32
2 Hazards	76	30
3 Hazards	30	12
4 Hazards	9	4
Mean Score		1.5
Median Score		1
<b>Presence of Any Fire Risk</b>		
Yes	214	85
No	34	14
<b>Fire Risk Score</b>		
No Hazards	34	14
1 Hazard	78	31
2 Hazards	60	24
3 Hazards	28	11
4 Hazards	15	6
5 Hazards	6	2
6 Hazards	2	1
Mean Score		1.7
Median Score		1



# Conclusions



- The majority of homes in Commerce City had multiple problems, including moisture and mold (60%), fire hazards (80%), and risk factors for poor air quality including inadequate ventilation (84%).
- Inherent barriers complicate and often preclude the implementation and sustainability of effective strategies to reduce hazards.
- Strategies are needed to begin to financially and technically support homeowners and tenants to construct, rehabilitate, and maintain homes that are safe and supportive of healthy living.



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