

Evaluating the health impacts of smoke-free policies in multiunit housing in Colorado

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Overview

- ▶ I. Context
- ▶ II. ALAC Studies
 - A. Part 1: Pre/ Post Resident Survey
 - B. Part 2: Housing Managers Interviews & Resident Survey
- ▶ III. Denver Health
 - Interviews & Focus Groups



I. Context

»» Background & Data

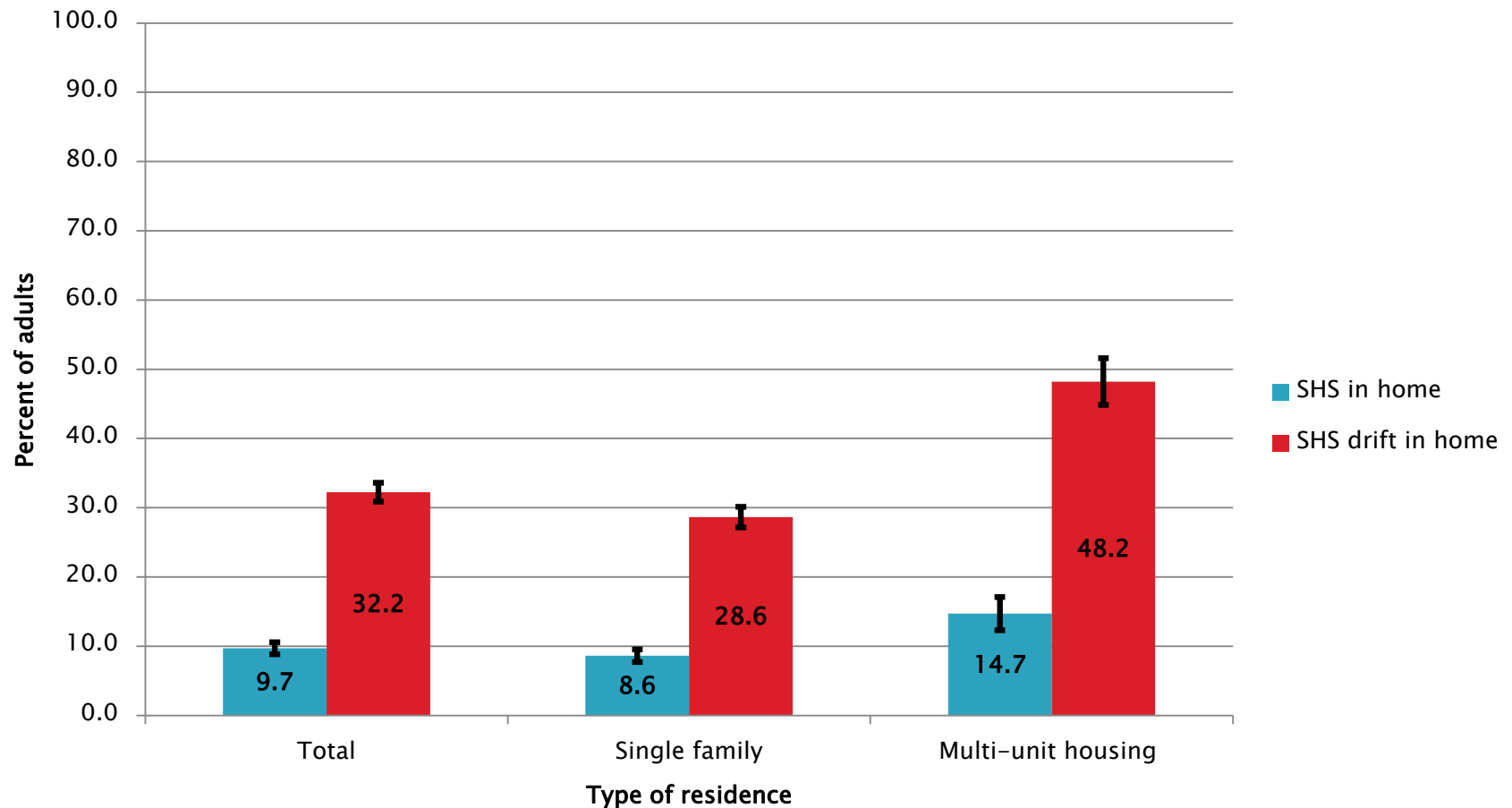
Background

- ▶ State Clean Indoor Air Law passed and implemented in 2006.
- ▶ Local public health agencies and other grantees were working at local level to strengthen protections in workplaces and public settings.
- ▶ Numerous complaints about SHS in multiunit housing
- ▶ In 2010 we designated smoke-free policies in affordable MUH settings as a high priority area of local grantee work

2011, State-Added BRFSS question on secondhand smoke exposure

- ▶ In what type of dwelling do you currently reside?
 - Used to categorize respondents for multiunit housing
- ▶ How often have you experienced secondhand smoke drifting into your home or into common spaces from nearby apartments or from outside?
Would you say...
 - Used to assess respondent experience of SHS

Percent of Colorado adults who ever experienced secondhand smoke (SHS) in the home by type of residence (2011–2012)



Error bars represent the 95% confidence interval.
Source: Colorado Behavioral Risk Factor Surveillance System

Three Colorado Studies

- ▶ 1) ALAC – MUH Residents (2014–2015)
- ▶ 2) ALAC – MUH Property Managers/Owners (2014–2015)
- ▶ 3) Denver Health and Hospital Association– factors associated with reducing exposure to secondhand smoke (2017)

ALAC Studies

»» Overview

ALAC Studies

- ▶ **Part 1: Pre–Post Surveys of Public Housing Residents on Smoke–free Policy Impacts**
- ▶ **Part 2: Public Housing Manager Interviews on Factors influencing Policy Adoption, Implementation & Enforcement**
- ▶ **Principal Investigator: Walter ‘Snip’ Young, PhD**

Where is the PI?



ALAC Study Goals

- ▶ **Primary Goal:** Provide Colorado-specific empirical data describing the health impacts and the attitudinal, behavioral, and economic impacts of smoke-free policies in multiunit public housing.
- ▶ **Secondary Goal:** Provide data to influence willingness of Colorado PHA managers & other low-income & market-rate housing providers to adopt smoke-free policies.

ALAC Study Objectives

- ▶ **Part 1 Objective:** Assess head of household behavioral, attitudinal & health impacts of no-smoking policies.
- ▶ **Part 2 Objectives:**
 - a) Identify predisposing, enabling, reinforcing & barrier factors associated with adoption & implementation of smoke-free policies in PHAs.
 - b) Collect data on costs associated with rehabilitating smoke-damaged residential units.



ALAC Part 1

- » Pre-Post Surveys of Public Housing Residents on Smoke-free Policy Impacts

Part 1 Study Design

- ▶ Pre & post surveys of resident heads of households before & 15 months after policy implementation

Location	T1	Policy Implementation	T2
South Metro Housing Options, Englewood, CO	X	O	X

Resident Health Survey Measures

All Heads of Households

- Demographics
- Smoking status
- Freq. acute health events
- Support for policy
- SHS exposure (unit/building)
- Knowledge of policy
- Observed compliance

Smokers

- Home smoking behavior
- Nicotine dependence
- Stage of change
- N of recent quit attempts
- Self-compliance with policy

Methods

➤ Mailed Surveys of Heads of Households

Overall Response Rates - (n=312)

T1 - 50.0% (156/312)

T2 - 53.8% (168/312)

Matched Pairs Analysis - (n=115)

115 answered both Pre & Post surveys

Part 1: Resident Health Survey Findings



Participant Demographics

(n=312)


Descriptors	%
Females	80%
Males	20%
White	90%
Non-White (Black, Asian, Am Indian)	6%
Hispanic / Latino	7%
Age > 60	76%
Persons who smoked	16%

Changes in SHS exposure by location & source at T1 to T2 (n=115; Paired data)

SHS location & source	T1	Policy Implem	T2	Direction of exposure change
Someone smoking in my apartment	36 (31.3)		14 (12.2)	↓ *
In my apartment from another apartment	67 (58.3)		45 (39.1)	↓ *
In my apartment from outside	60 (52.2)		56 (48.7)	↓
In entryways, stairs or hallways	90 (78.3)		73 (63.5)	↓ *
Outdoors on porches, patios or balconies	74 (64.3)		69 (60.0)	↓
In parking lot or sidewalks	78 (68.8)		81 (70.4)	↑

* Statistically significant $p < .001$

Prevalence of smoking in prior 3 months at T1 & T2 (n=115; Paired data)

Smoked in past three months	T1 % (n=29)	Policy implem	T2 % (n=21)	T1 to T2 Change Direction
Every day	93.1		47.6	↓
A few times/week	3.4		19.0	↑
A few times/month	0.0		9.5	↑
Rarely	3.4		23.8	↑
Total	100.0		100.0	

N of cigarettes smoked per day at T1 & T2 (n=115, Paired data)

N of cigarettes per day	T1 % (n=29)	T2 % (n=21)	T1 to T2 Change Direction
<11	41.4	66.7	↑
11–20	37.9	28.6	↓
21–30	10.3	0.0	↓
31+	0.0	0.0	–
No Response	10.3	4.8	–
Total	100.0	100.0	–

% of quit attempts made in past year, current smokers at T1 & T2

(n=115; Paired data)

Number of quit attempts	T1 % (n=29)	Policy	T2 % (n=21)	Change Direction
0	34.5		23.8	↓
1	20.7		9.5	↓
2	17.2		19.0	↑
3	6.9		9.5	↑
4	3.4		9.5	↑
5	3.4		0.0	↓
Unknown / NR	13.7		28.6	
Total	100.0		100.0	% multiple attempts increased from 31% to 38%

N and (%) in support of building smoke-free policy at T1 and T2 (Paired data)

	N at T1 & T2	Strongly support	Somewhat / Slightly support	Do not support	DK/No sure/NR
All respondents	T1 (n=115)	81 (70.4)	19 (16.5)	9 (7.8)	6 (5.2)
	T2 (n=115)	88 (76.5)	14 (12.2)	8 (7.0)	5 (4.3)
Non-smokers	T1 (n=97)	79 (81.4)	11 (11.3)	3 (3.1)	4 (4.1)
	T2 (n=103)	86 (83.5)	10 (9.7)	3 (2.9)	4 (3.9)
Smokers	T1 (n=18)	2 (11.1)	8 (44.4)	6 (33.3)	2 (11.1)
	T2 (n=12)	2 (16.7)	4 (33.3)	5 (41.7)	1 (8.3)

Health issues associated with exposure to SHS in 3 months before each survey – T1 & T2 (Paired data)

SHS health issues	T1 n (%)	T2 n (%)	Change direction Ever vs. never
Asthma attacks	22 (19.1)	17 (14.8)	↓ (ns)
Emphysema/COPD	23 (20.0)	20 (17.4)	↓ (ns)
Heart problems	23 (20.0)	20 (23.0)	No change
Allergies	53 (46.1)	56 (48.7)	↑ (ns)
Breathing problems	58 (50.4)	47 (40.9)	↓ (p<.03)
Headaches	60 (52.2)	65(56.5)	↑ (ns)
Eye irritation	69 (60.0)	66 (57.4)	↓ (ns)
Nasal congestion	78 (67.8)	69 (60.0)	↓ (ns)
Colds	63 (54.8)	61 (53.0)	↓ (ns)
Ear/sinus infections	51 (44.4)	42 (36.5)	↓ (ns)

Summary: cessation results

Smoke free policy was associated with ...

- ▶ Quitting smoking,
- ▶ Half as likely to smoke every day,
- ▶ Fewer cigarettes smoked per day,
- ▶ Increase in multiple quit attempts in the previous 12 months, and
- ▶ No one smoking $> 1/2$ pack per day in the previous 3 months.

Summary: smelling smoke results

- ▶ Decrease in % of respondents who smelled smoke indoors,
- ▶ Decrease in frequency of smelling smoke, among those who continued to smell it,
- ▶ Increase in % “smelling smoke in apartments from outside”

Summary: health results

- ▶ Nearly all of the health problems associated with exposure to SHS declined between the T1 and T2 surveys
 - breathing problems declined significantly

Part 1: Conclusion

- ▶ Smoke-free policies in public housing can be an important tool for:
 - Reducing resident exposure to secondhand smoke,
 - Decreasing daily smoking and cigarette consumption
 - Encouraging smoking cessation and quit attempts

If implemented in all multiunit housing, these policies could reduce indoor exposure and health problems associated with secondhand smoke exposure, promote cessation and reduce cigarette consumption.

ALAC Part 2

- » a) Interviews with Public Housing Managers, and
- b) Survey of Long-time Residents in Smoke-free Housing

Part 2 Study Design

- ▶ a) Interviews with Public Housing Directors, Program Managers, Maintenance Staff & Building Managers (N=23)
- ▶ b) Survey of residents in which smoke-free policy was in effect 5+ Years (N=238)

ALAC Part 2

- » a) Interviews with Public Housing Managers
- b) Survey of Long-time Residents in Smoke-free Housing

Manager Interview Methods

- ▶ Interview question guide developed
- ▶ Recorded & transcribed interview data
- ▶ Responses coded by the following factors:
 - Predisposed
 - Satisfaction (positive and negative)
 - Reinforcing
 - Barriers
 - Implementation
 - Compliance
 - Enforcement
 - Open coding or other

Manager Findings: Factors that Predisposed Policy Adoption

- ▶ HUD Notices encouraging a policy
- ▶ Turnover costs / accountability associated with damage caused by tobacco smoke
- ▶ Health and safety of residents and staff
- ▶ Resident complaints about exposure to SHS

Manager Findings: Factors that Enabled Policy Adoption

- ▶ **Surveys** of and meetings with residents
- ▶ **Little opposition** to proposed policy/resident support
- ▶ **Education of residents** on SHS, health, costs and policy
- ▶ **Support** from local health departments & others (funds & TA)

Manager Findings: Factors that *Reinforced* Policy Adoption

- ▶ Family member & visitor support for policy
- ▶ Observing residents who quit smoking & who are trying to quit
- ▶ Observing residents who are enforcing policy with guests
- ▶ Perception [among PHA peers] that these policies are gaining momentum
- ▶ No-smoking signage (SMHO signs on all doors)

Manager Findings: Barriers to Policy Adoption

- ▶ Residents asking for a grandfather clause
- ▶ Threats of moving out
(Note: very few actually moved)
- ▶ Declarations of “right” to smoke in [my] home
- ▶ Medical marijuana permits

Manager Findings: Economic estimates of smoke-damaged units

Rehabilitation costs – \$5,300 to \$12,000
vs. \$500 to \$2,500 for non-smoking unit.

Example (actual costs for one unit)

\$3,378: Purchase & install of flooring (carpet, vinyl, appliances)

1,440: Two maintenance workers

300: Cleaning worker

200: Paint

\$5,318 Total cost refurbishing a smoke-damaged unit

Conclusions: Managers

- ▶ All were satisfied to have a smoke-free policy due to positive benefits on:
 - Costs,
 - Reduced fire risks,
 - Resident and staff health, and
 - Residents and staff support for policy.
- ▶ Smoke-free policy implementation is improved by:
 - Active resident education and engagement
 - Following a clear protocol for violations
 - Visible signage
 - Referrals for cessation resources

ALAC Part 2

»» a) Interviews with Public Housing Managers

b) Survey of Long-time Residents in Smoke-free Housing

Resident Satisfaction Survey

(residents in 5+ year policy buildings)

Measures:

- ▶ HOH satisfaction with smoke-free policy, enforcement of policy;
- ▶ Frequency of smelling SHS in home;
- ▶ Health issues associated with SHS exposure;
- ▶ Changes in HOH & non-HOH smoking behavior;
- ▶ HOH knowledge of, support for & compliance with no-smoking policies.

Resident Satisfaction Findings

Frequency of HOHs Smelling Tobacco Smoke

- ▶ 23.1% smelled it every day,
- ▶ 24.4% smelled it a few times a week,
- ▶ 21.4% a few times a month,
- ▶ 14.7% smelled it rarely, and
- ▶ 16.0% never.

Resident Satisfaction Findings

Perceived level of policy enforcement

Policy enforced...	n	%
Always	72	30.3
Sometimes	70	29.4
Never	39	16.4
Not sure	53	22.3
No Response	4	1.7
Total	238	100.0

Resident Satisfaction Findings

One thing heads of households would change about the policy

Change to policy	n	%
Get rid of it	8	3.4
Allow on porches, patios, balconies	23	9.7
Allow outdoor smoking area	37	15.5
Prohibit everywhere	62	26.1
Don't change anything	79	33.2
Other	10	4.2
Don't know/not sure	12	5.0
No Response	7	2.9
Total	238	100.0

Resident Satisfaction Findings

Support for Smoke-free Policy

92.0% of HOHs supported the policy.

- 76.5% strongly support policy
- 93.5% of non-smokers support policy
- 84.6% of smokers support policy

Resident Satisfaction Findings

If you were moving to a new building, how important would a smoking-free policy be?

Importance of living in a non-smoking building	n	%
Very important	174	73.1
Somewhat important	35	14.7
Somewhat unimportant	12	5.0
Very unimportant	6	2.5
Don't know / not sure	6	2.5
No Response	5	2.1
Total	238	100.0

Resident Satisfaction Conclusions

- ▶ Very few of the survey respondents knew the full extent of the smoke-free policy.
- ▶ Residents continued to complain about being exposed to secondhand smoke on properties where smoking is allowed outside.
- ▶ One-fourth of the respondents said the management had not provided information about smoking-cessation resources.

The survey findings may indicate that support for smoke-free policies increases over residence time.

Part 1 & 2 Important Insights & Considerations

- ▶ A long implementation or grandfathering period created:
 - a) **confusion** about policy provisions
 - b) **resentment** toward management
 - c) **skepticism** that the policy will be enforced
- ▶ Implementation period should be limited to 3 to 6 months (never > 1 year), to educate residents and staff, provide time for cessation, or time to move.

Important Insights & Considerations

- ▶ Frequently communicate about a smoke free policy including placing no-smoking signs throughout the property in all indoor areas and at entrances.
- ▶ Create a safe and confidential means for reporting violations and make it known to residents and staff.
- ▶ Designated smoking areas should be at least 25 feet away from all buildings, doors, window openings & air intakes.

Further Questions?

See the full article:

https://www.cdc.gov/pcd/issues/2016/16_0008.htm

Contact the PI:

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Denver Health Study 3

- » Factors associated with reducing exposure to secondhand smoke

Study #3 Denver Health Secondhand Smoke Comparative Case Study

Background

- Evidence that residents of multi-unit housing are being exposed to SHS even when a smoke-free policy exists.
- Public housing in Colorado is geographically diverse (e.g. urban, rural and frontier)
- Public housing residents are diverse (e.g. household types, race and ethnicity, primary language, etc.)

Study #3 Denver Health Secondhand Smoke Comparative Case Study

- Study Question: Are residents of public housing residents exposed to secondhand smoke before and after the HUD–mandated policy is passed (or strengthened)?
 - What factors are protective?
 - What factors increase risk of exposure?

Study #3 Denver Health Secondhand Smoke Comparative Case Study

Factors explored:

- **Policy** (if present) and type
- **Enforcement** (if present) and strength
- **Location** (urban, rural)
- **Resident characteristics** (smoking status, age, household type, employment status, health conditions, race and ethnicity, gender)
- **Property/environmental factors** (capacity & # of residents, HVAC systems, designated smoking areas, available resident services, type of property management)

Study #3 Denver Health Secondhand Smoke Comparative Case Study

- ▶ Locations:
 - Large urban property in the Denver–metro area
 - Mid–size urban property in southern Colorado
 - Mid–size property in a mountain resort town
 - Small rural property on the eastern plains

Study #3 Denver Health Secondhand Smoke Comparative Case Study

➤ Methods:

➤ Key Informant Interviews

- Property Managers (6 managers interviewed)
- Maintenance Staff (5 staff interviewed)

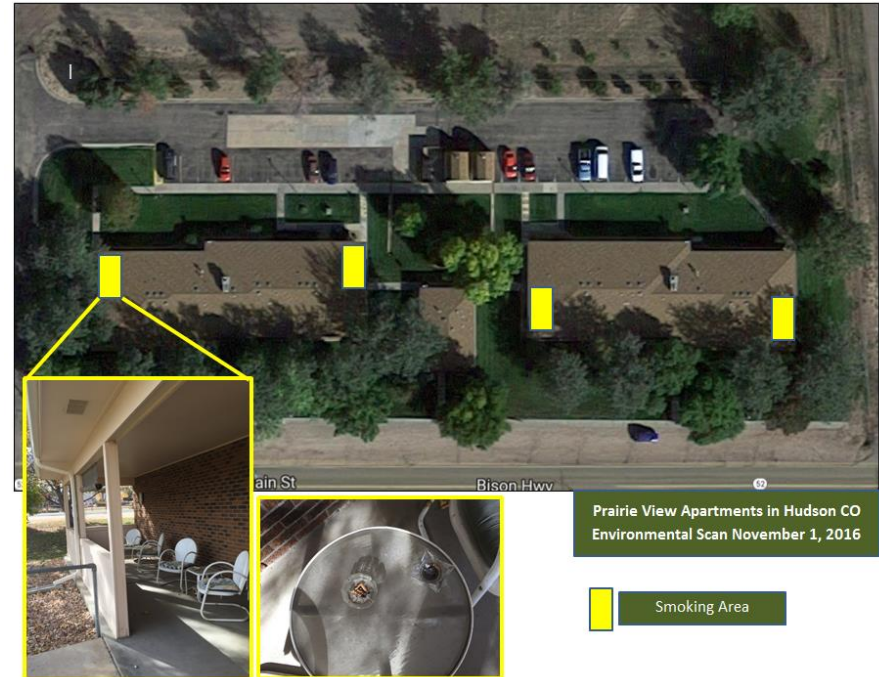
➤ Focus Groups:

- 2 focus groups each at the 2 large housing properties (4)
- 1 focus group each at the 2 small housing properties (2)
- 18 + years old residents
- Smokers and non-smokers
- Conducted in Spanish and English

Study #3 Denver Health Secondhand Smoke Comparative Case Study

➤ Methods:

- Internal and external environmental scan included a tour of the property: observations noted and photos:
 - Designated and unofficial smoking areas
 - Cigarette litter/ashtrays
 - Signage
 - Smokers observed
 - Information about cessation resources in common areas



Study #3 Denver Health Secondhand Smoke Comparative Case Study

➤ Preliminary Results

- Policy is not protective in most cases
- Enforcement is critical but property managers and non-smoking residents perceive it as problematic
- All property managers expressed a need for resources:
 - Cessation resources for smokers
 - Policy implementation and enforcement resources

Study #3 Denver Health Secondhand Smoke Comparative Case Study

➤ Next Steps:

- Analyze all pre-HUD ruling data
- Use findings to assist properties with effective implementation of smoke-free policy
- Collect and analyze post-HUD ruling data

Questions?

Please contact:

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Thank you!

