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The Resilient Local Health Department: Surviving the 2008 Economic Crisis

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The resilient Local Health Department: surviving the 2008 economic crisis

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The Resilient Local Health Department: Research Objective

- The “resilient” LHD represented financial resiliency for maintaining budgets in the face of the 2008 recession.

- The purpose of this study was to identify potential modifiable factors that can protect local health departments from budget cuts during periods of future economic stress.

The Resilient Local Health Department: Background

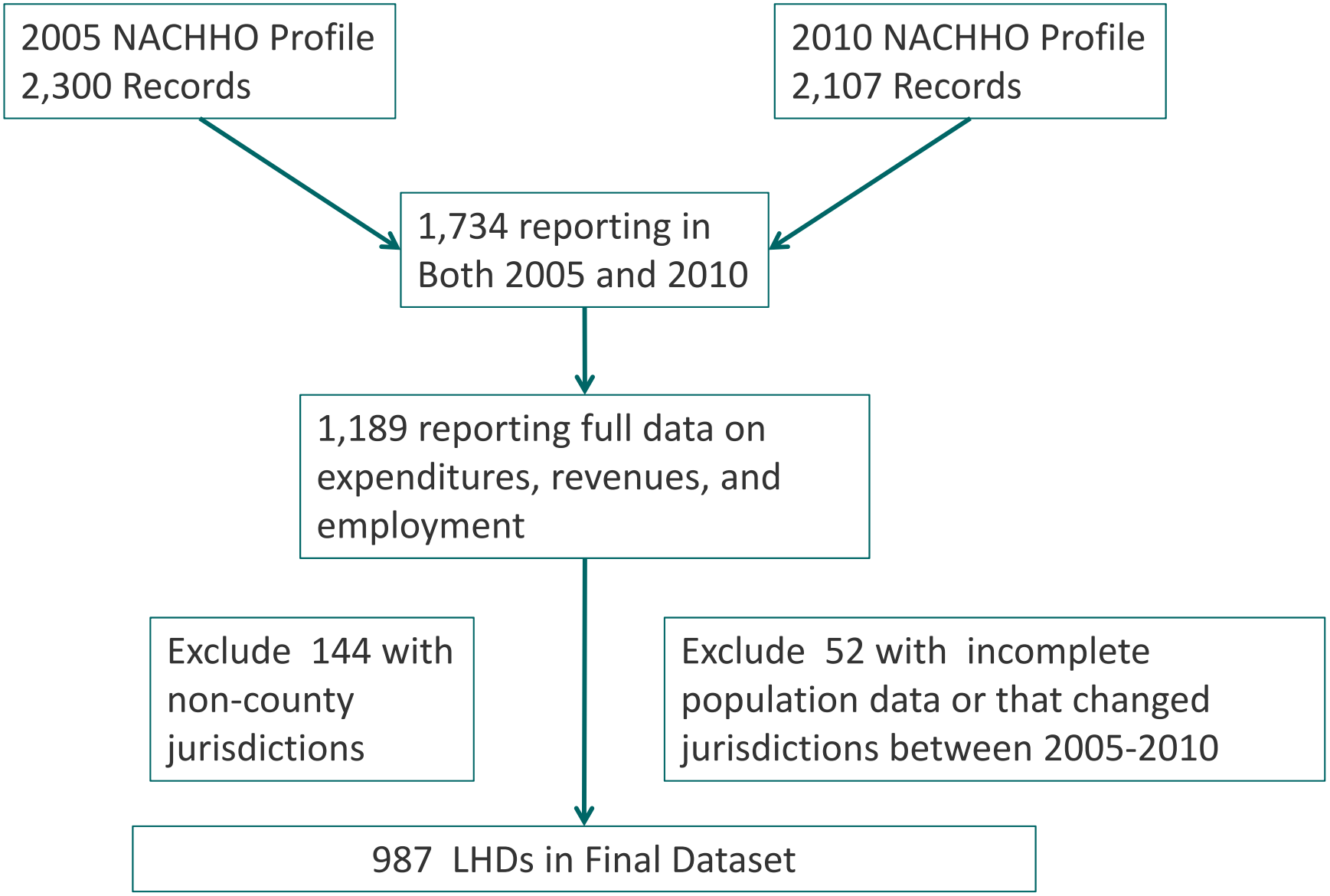
- Between 2008-2010 more than half of the LHDs (53%) experienced cuts to their core funding.
- In excess of 23,000 LHDs jobs were lost in 2008-2009.
- All programmatic areas were affected by cuts, and more than half of the LHDs had to reduce or eliminate at least 1 programmatic area.
- Factors associated with LHDs experiencing budget cuts vs. those not experiencing cuts:
  - Greater population size of the jurisdiction served
  - Absence of BOH
  - Greater reliance on state or regulatory fees and local sources

Impact of the 2008-2010 economic recession on local health departments. Willard R, Shah GH, Leep C, Ku L. J Public Health Manag Pract. 2012 Mar-Apr;18(2):106-14.

The Resilient Local Health Department: Methods

- Study Design: Retrospective Cohort
- Data Source: 2005 and 2010 census surveys of Local Health Departments (NACCHO)
- Independent variables (2005) - grouped around domains of organization, revenue, and services.
- Dependent variable – resiliency of the LHD – based on the ratio of observed-to-predicted expenditures per capita for 2010; categorized as **above, within, below** 95% CI for mean observed-to-predicted expenditures per capita ratio for 2010
- Control variables - jurisdictional population, poverty, race, education, age distribution, and health insurance status

Source of data and development of final dataset



The Resilient Local Health Department: Methods

- Measures of association for non-normally distributed continuous data (Wilcoxon-Mann-Whitney and Wilcoxon signed rank sum tests) and t test for normally distributed continuous data; chi-square to test associations for categorical data
- An ordered logistic regression was used to model the dependent variable with three attributes - resilient, variously resilient, and non-resilient - with independent and control variables
- Marginal effects estimates from the ordered logit model on the agency's probability of being resilient
- Data analyzed in Stata (version 10)
- Human Subjects Review: Exempted research (University of Tennessee IRB)

The Resilient Local Health Department: Results

Basic descriptive data on FTEs, Expenditures, and Population for 2005 and 2010 By Resiliency category. All figures are **Mean** values.

	Non-Resilient (n=564)	Variously-Resilient (n=85)	Resilient (n=338)
FTE/pop 2005 (per 10000)	7.2	8.6	8.6
FTE/pop 2010 (per 10000)	6.5	9.5	10.4
EXP/pop 2005	$48.77	$62.33	$60.63
EXP/pop 2010	$45.49	$68.04	$88.76
Jurisdictional Population 2005	150,541	248,653	108,352

The Resilient Local Health Department: Results – bivariate analysis

LHD-related variables	Non-Resilient (n=564)	Variously-Resilient (n=85)	Resilient (n=338)
% Board of Health (BOH)*	76.6	89.4	79.0
% BOH with Hire/Fire Authority *	67.2	63.5	54.3
% revenue from Medicaid *	9.6	11.4	11.8
% revenue from Medicare **	4.8	8.0	6.2
% revenue from City + County ***	26.8	27.1	21.9
Total Services (53)	24.1	25.3	24.5
Percent uninsured *	17.0	15.9	16.2

* $p < 0.05$ ** $p<0.01$ *** $p<.001$

Ordered Logit Regression Model, Independent variables

Organization	Revenue	Services	Community
Jurisdictional Population (10,000s)	% revenue from Medicaid[b]	No. screening services	% below poverty
Board of health, without hire/fire authority[a]	% revenue from Medicare[b]	No. treatment services	% African-American
Board of health, with hire/fire authority[a]	% revenue from patient fees[b]	No. epidemiology services	% less high school education
Estimate of tenure of LHD director in yrs, 2005	% revenue from Federal pass-through[b]	No. population-health services	% over 65 yrs
LHD Director with any public health degree	% revenue from State[b]	No. regulatory services	% uninsured
Changed LHD director between 2005 and 2010	% revenue from regulatory fees[b]		Per capita income ($1000s)
LHD conducted CHIP	Bioterrorism-Preparedness Funding/Pop		

[a] relative to not having a Board of Health; [b] relative to percentage of revenues from local sources (city + county)

Ordered Logit Regression Model. Dependent variable is observed to predicted expenditures (2010) category (1=non-resilient, 2=variously resilient, 3=resilient)

Local Health Department and community characteristics	P	Coefficient	95% Confidence Interval	
Board of health, without hire/fire authority[a]	0.020	0.534	0.084	0.983
% revenue from Medicaid[b]	0.046	0.014	0.000	0.027
% revenue from Medicare[b]	0.000	0.027	0.012	0.042
% revenue from Federal pass-through[b]	0.002	0.018	0.007	0.029
Number of screening services	0.012	-0.121	-0.215	-0.027
Number of treatment services	0.025	0.094	0.012	0.177
Number of population-health services	0.040	0.088	0.004	0.172

[a] relative to not having a Board of Health; [b] relative to percentage of revenues from local sources (city + county)

Ordered Logit Regression Model. Dependent variable is observed to predicted expenditures (2010) category (1=non-resilient, 2=variously resilient, 3=resilient)

Local Health Department and community characteristics	P	Coefficient	95% Confidence Interval	
% African-American	0.040	-0.016	-0.032	-0.001
% over 65 yrs	0.055	-0.042	-0.086	0.001
% uninsured	0.005	-0.048	-0.081	-0.015

Marginal Effects estimates for the probability of an agency being resilient (n=338)

Local Health Department and community characteristics	dy/dx
Board of health, without hire/fire authority[a]	0.119 *
% revenue from Medicaid[b]	0.003 *
% revenue from Medicare[b]	0.006 ***
% revenue from Federal pass-through[b]	0.004 **
Number of screening services	-0.026 *
Number of treatment services	0.020 *
Number of population-health services	0.019 *
% African-American	-0.004 *
% over 65 yrs	-0.009 *
% uninsured	-0.010 **

* p< 0.05
** p<0.01
*** p<.001

[a] relative to not having a Board of Health; [b] relative to percentage of revenues from local sources (city + county)

The Board of Health as a Protective Factor:

- BOH reinforces LHD resilience, however a board with hiring/firing authority over the LHD director may be unfavorable to economic resilience.
- BOH positively associated with LHD performance (Scutchfield et al, Mays et al, and Bhandari et al)
- LHDs governed by BOH significantly less likely to experience reductions in spending, and had spending levels > 14% higher than LHDs without such boards (Mays and Smith)
- LHDs with BOH less likely to experience a reduction in funding between 2008-2010 (Willard et al)

The Resilient Local Health Department Summary of Findings:

- Local health departments which successfully weathered the economic recession of 2008 were more likely to
  - have had a board of health (but without the authority to hire/fire)
  - have a greater diversity of funding sources (relative to local sources only)
  - provide a larger number of treatment and population services compared to LHDs which experienced significant losses in funding by 2010.

The Resilient Local Health Department Conclusions :

Implications for Policy, Delivery, or Practice

- Since advocacy for LHDs (through a board of health), revenue mix, and array of services may all be modifiable and adaptable characteristics, the findings suggest possible means for LHDs to attain resiliency in the face of future economic crises.

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