

Methodological Issues in PHSR: An Example relating Law to System Performance

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Overview

- Results from a 2 part study (qualitative and quantitative) of **congruence** between **Statutes, Essential Services** and **Performance**
- Commentary on quantitative methods in PHSSR

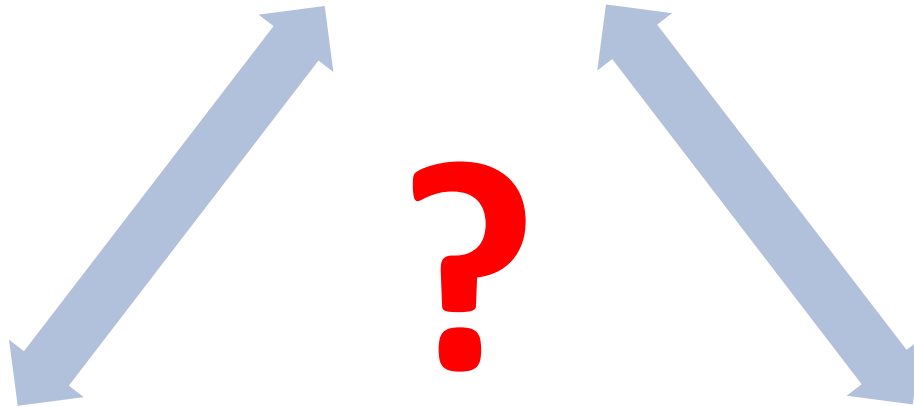
Introduction

State Public
Health Statutes

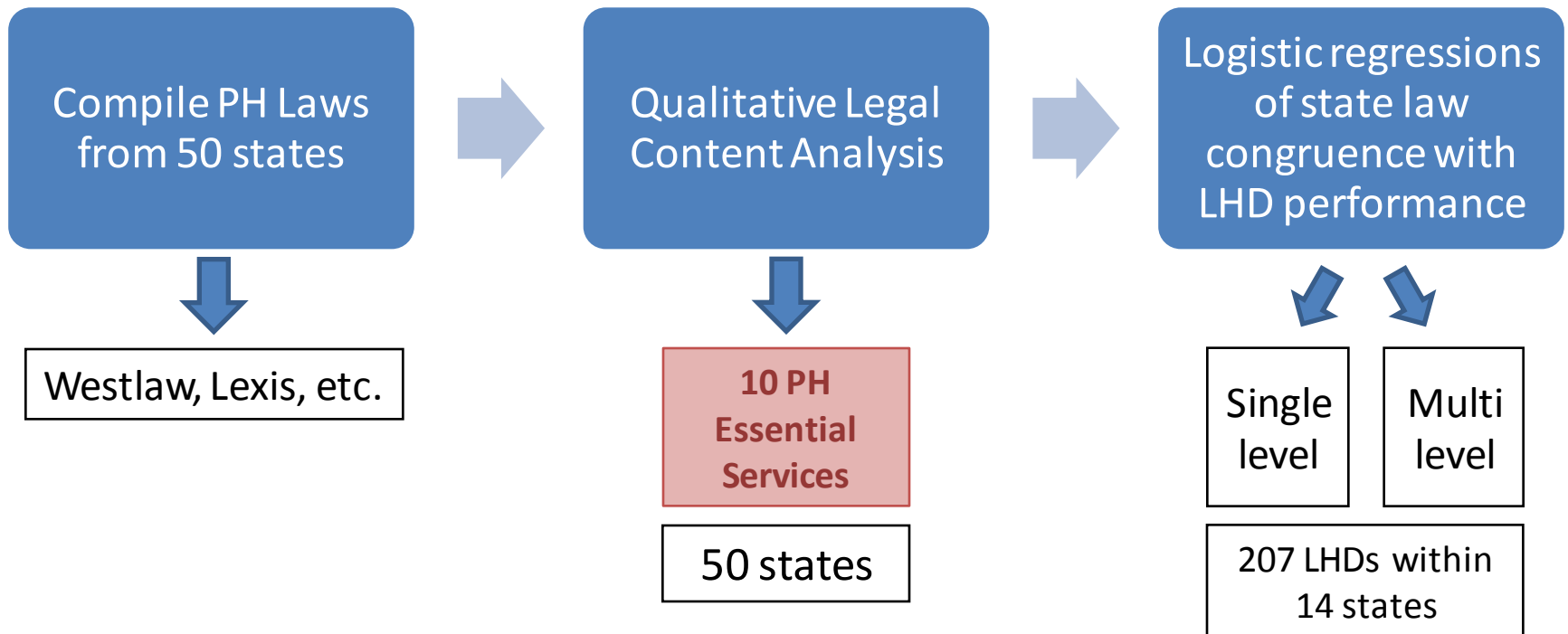


Local health
department (LHD)
performance

PH mission
and essential
services



Methods



Law Congruence

Classified as highly congruent, congruent, or not congruent

Performance scores

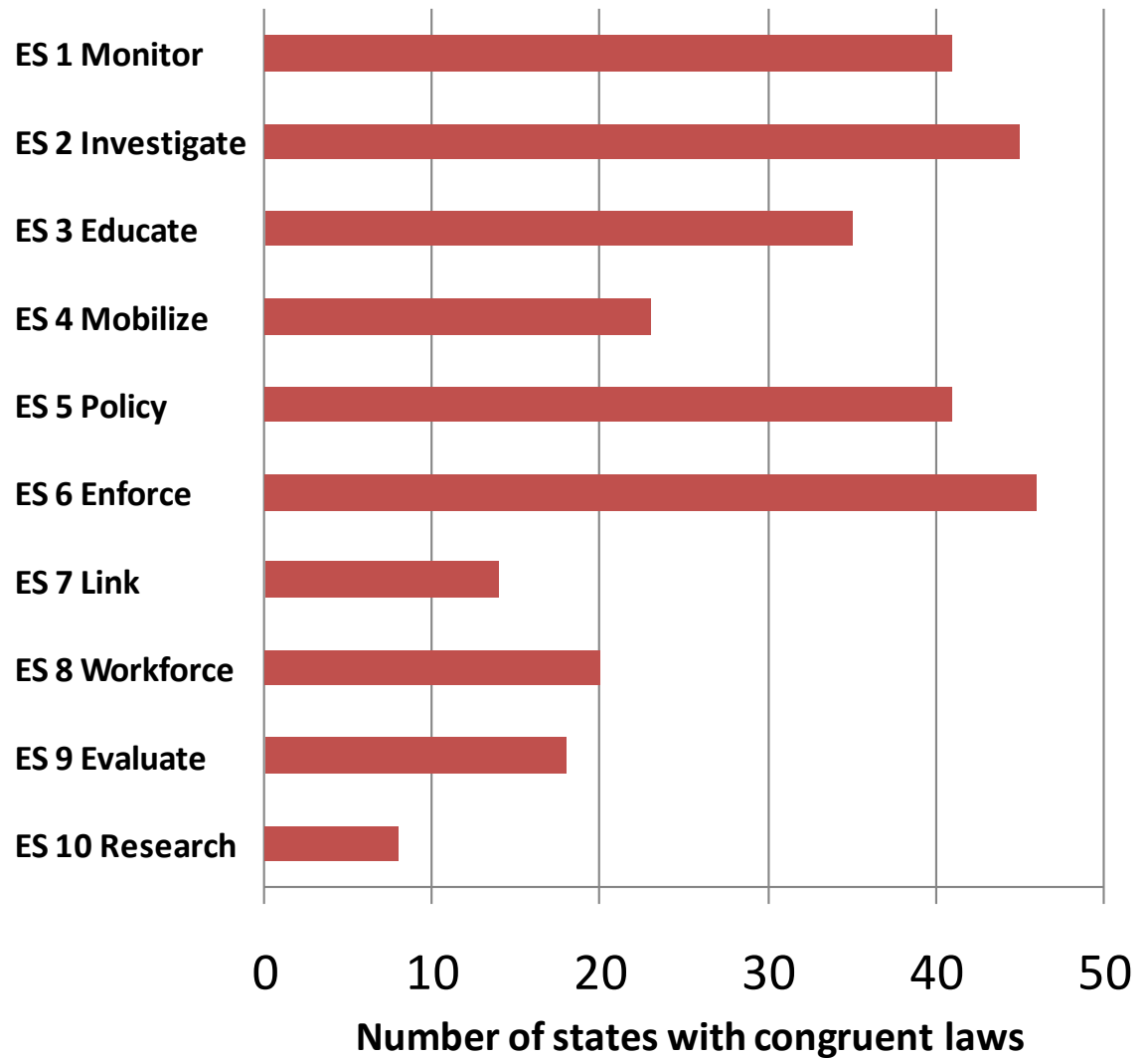
From the NPHPSP V.1 dataset

Dichotomized as above or below national weighted mean

Performance scores recorded before statutory reform were eliminated

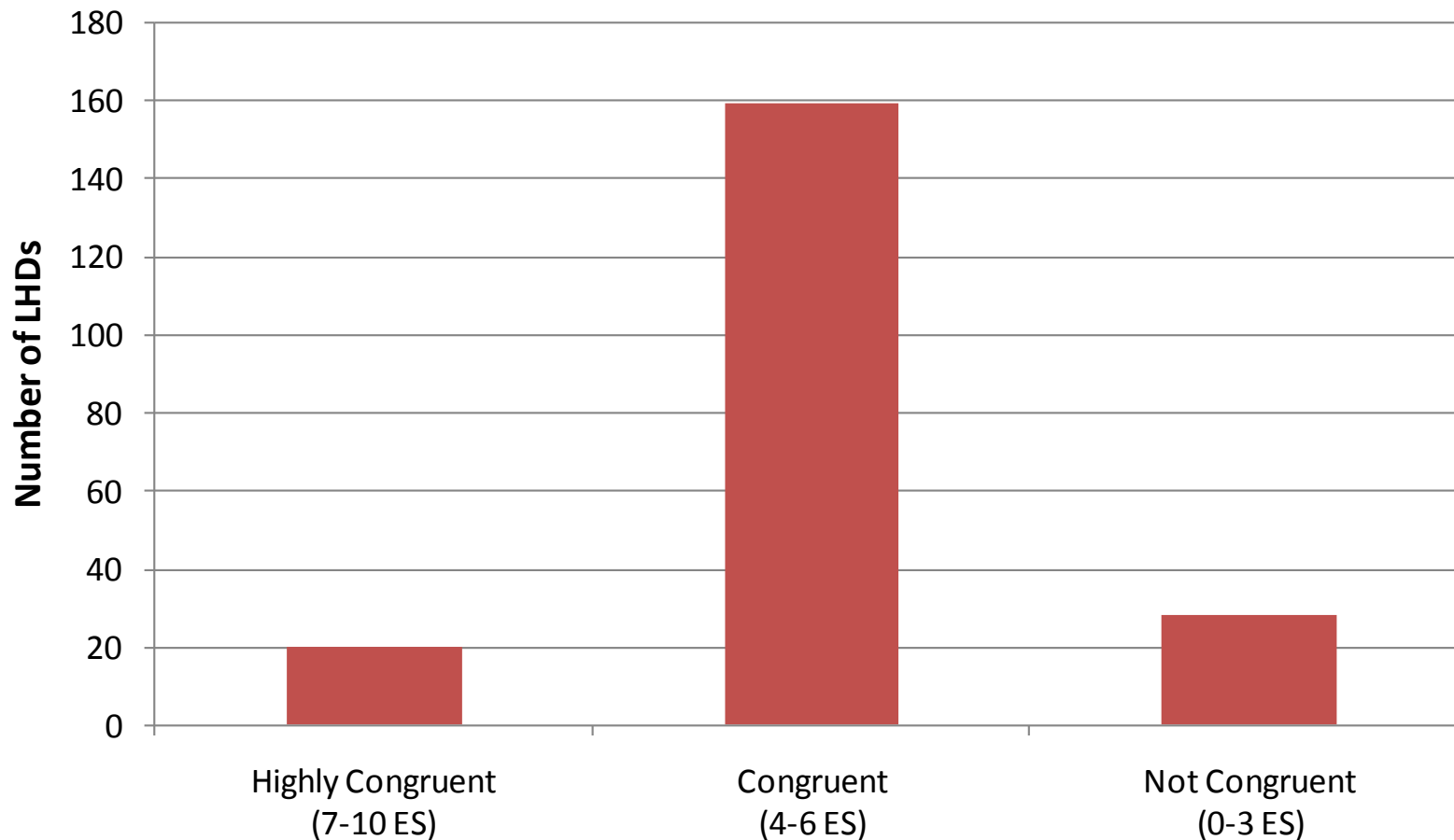
Qualitative Legal Analysis Results

PH Statute Congruence with Essential Services at the **State level**



Performance Regression Sample

Count of LHDs in each congruence category within the **logistic regression sample**
(Those LHDs that completed the NPHPS instrument only after their most recent PH statute modification)



States
Represented

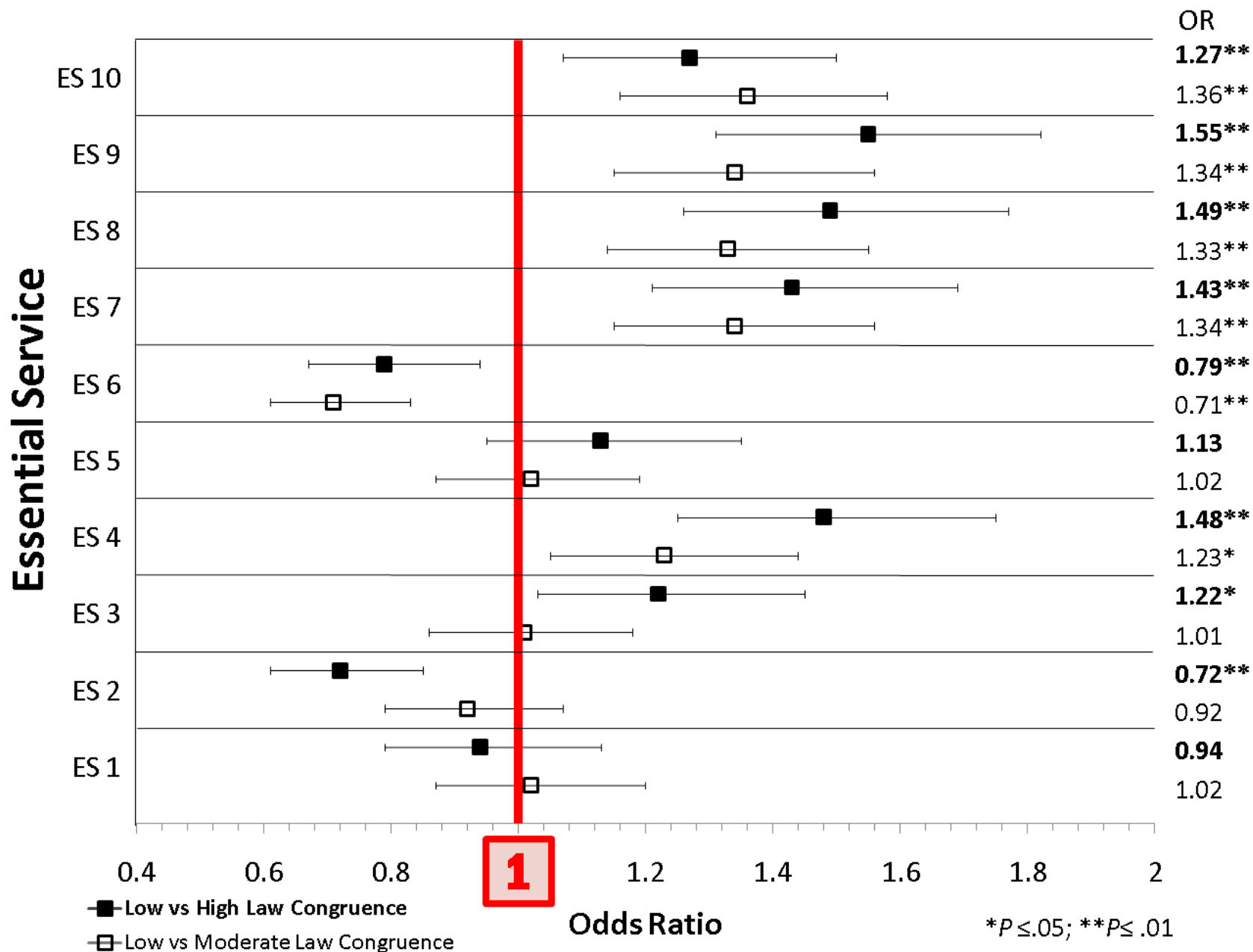
4

6

4

n = 207 LHDs, 14 states

Results – **Little** effect of law congruence on performance



Limitations well known in PHSSR data

- NPHPS scores were self reported
- PH systems differ widely
 - Profiles of population served
 - Makeup of their organization
- Limited sample size
- Size of the changes to PH statutes is unknown
- Temporal relationships could not be determined

Conclusions

- Limitations force us to be cautious about drawing specific conclusions
- The data suggests that statutory language accounts for little of the variation in local public health system performance
- Negative odds are counter-intuitive
 - Indicative of unreliable data
- Hints of a slight relationship with some ES reinforce the need for further study with more reliable data

Regression method

- Despite the data being nested hierarchically in states, a single-level model was chosen
 - Unreliability of self-reported data
- More reliable data necessary for the right type of analysis
- A multi-layered system requires a multi-layered analysis

Multi-level Regressions

- Data assumed to be **hierarchically** nested
- Appropriately partition within-group and between-group effects
- Advantages
 - Borrowing of strength
 - good for sparse data
 - Improves estimation of individual effects
 - More realistic assumptions
 - Useful when there is high intra-class correlation
- Disadvantages
 - Large data sets necessary to prevent instability
 - Need balanced group size
 - More restricted model
 - Not effective when strength and direction of clustering relationship is uncertain

Acknowledgements

Jacqueline Merrill

Benjamin Meier

Haomiao Jia

Kristine Gebbie

Funding provided by the National Network of Public Health Institutes
Kristine Gebbie, Principal Investigator