Systems for Action
National Coordinating Center
Systems and Services Research to Build a Culture of Health

colorado school of public health

Evaluating Inclusiveness of Multisector Community Health Networks

Strategies to Achieve Alignment, Collaboration, and Synergy Across Delivery and Financing Systems

Research-in-Progress Webinar
September 1, 2021
12-1pm ET

Agenda

Welcome: Glen Mays, PhD
Director, Systems for Action

Presenters: Elleni Mehari, MA | Kyla Bauer | Kelsey Owsley, MPH
Systems for Action Intramural Team

Q&A: Moderated by Glen Mays, PhD

Kelsey Owsley, MPH

Kelsey Owsley is a PhD candidate in Health Services Research at the Colorado School of Public Health. Kelsey works for the Systems for Action National Program Office and the Colorado Cancer Center. Her research interests include hospital safety net engagement, population health delivery systems, and health disparities in aging populations

Elleni Mehari, MA

Elleni Mehari received her Master of Arts in psychology at Boston University, and is currently a PhD student in the Department of Health Systems, Management and Policy at the Colorado School of Public Health. Her prior work experience has spanned across substance abuse in rural communities, anxiety and related disorders, cognitive and emotional skill building in the pediatric population, and breast oncology clinical trials. Drawing from these areas of focus, Elleni's current research interests are centered around social determinants of health and improving health equity along the continuum of care for marginalized groups.

Kyla Bauer

Kyla Bauer is a PhD student with Health Systems, Management & Policy at the Colorado School of Public Health at the CU Anschutz Medical Campus. Their background is varied, primarily involving direct work with community members on healthy behavior change and healthcare navigation, and assisting healthcare startups to find better ways to operationalize work that supports human beings.

Evaluating Inclusiveness in Multi-Sector Community Health Networks: The Case of Tribal Organizations

Kelsey M. Owsley, PhD Candidate
Kyla L. Bauer, PhD Student
September 2021

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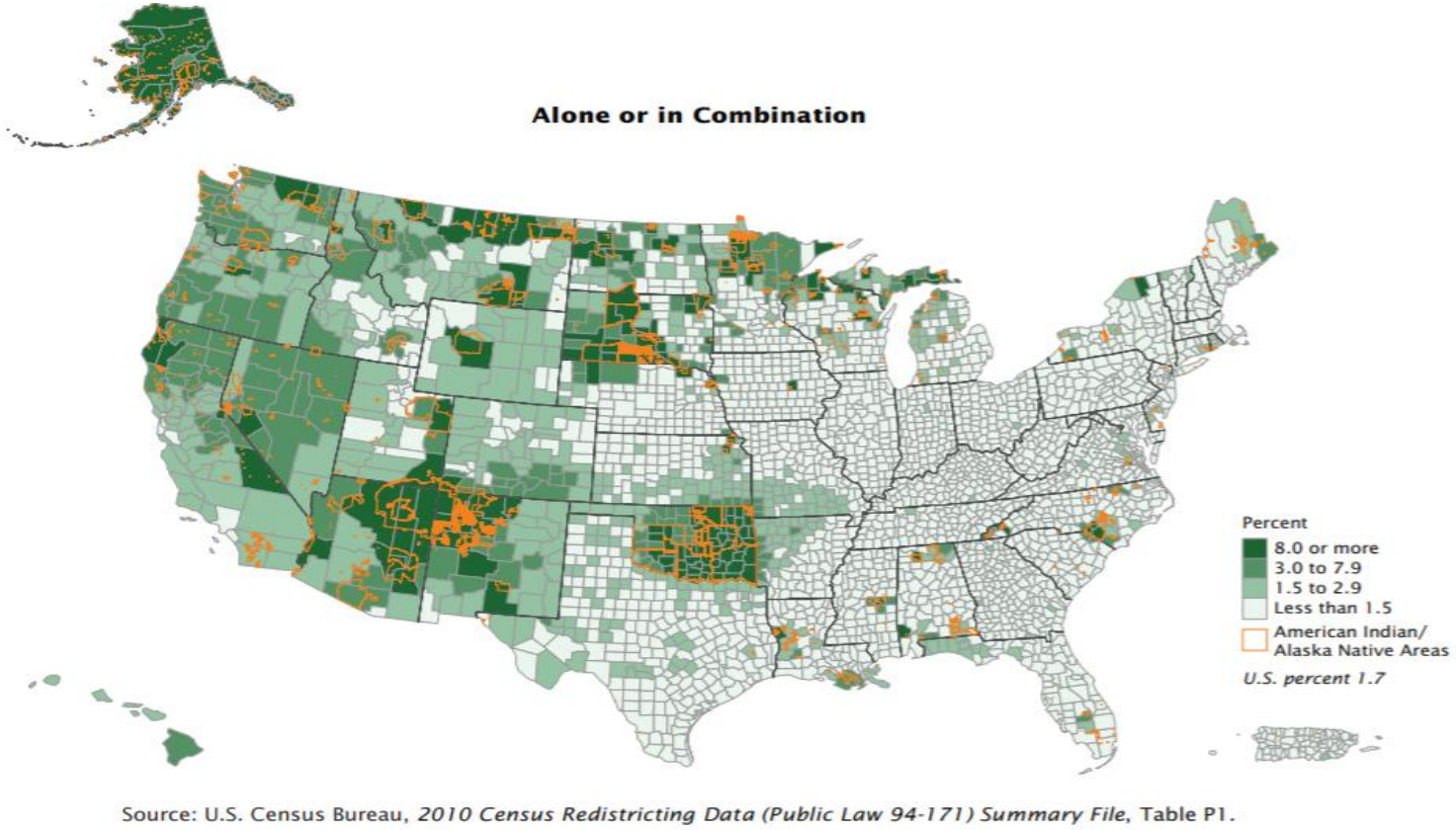
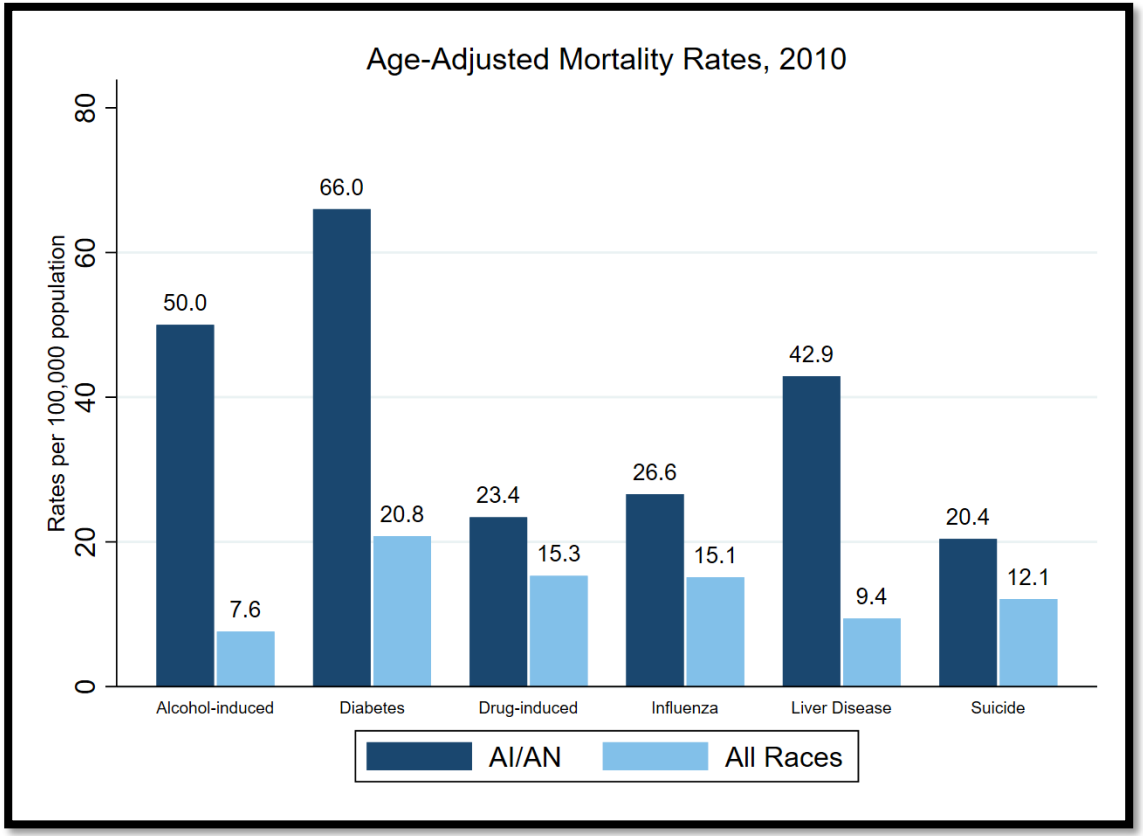
American Indian/Alaska Native (AI/AN)



Source: U.S. Census Bureau, *2010 Census Redistricting Data (Public Law 94-171) Summary File*, Table P1.

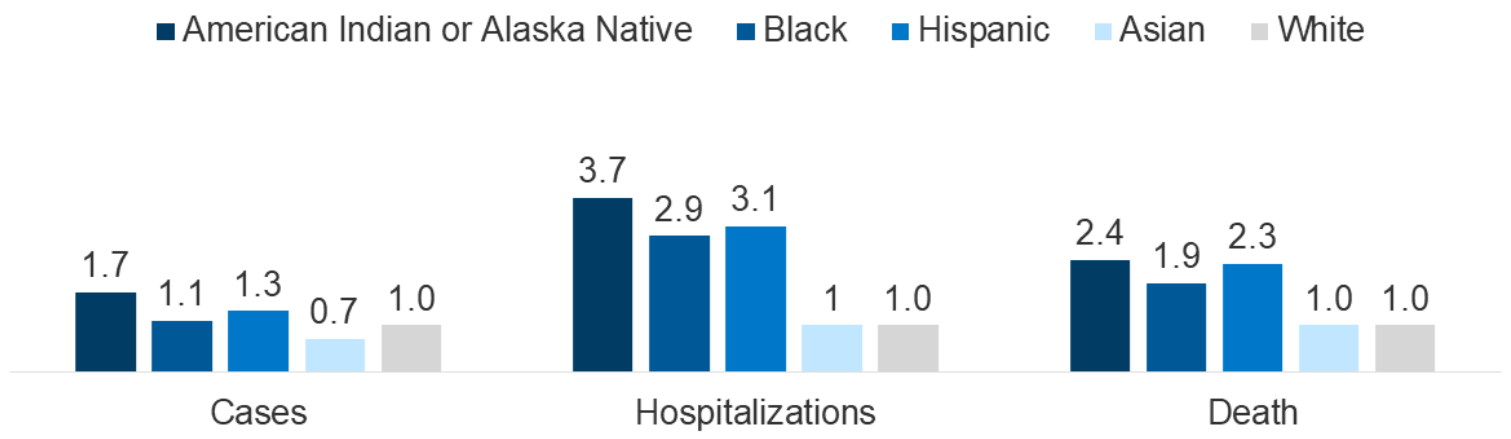
AI/AN Health



Indian Health Services. (2019) Disparities. https://www.ihs.gov/newsroom/factsheets/disparities/

AI/AN Health

Risk of Infection, Hospitalization, and Death Compared to White People in the U.S., Adjusted for Age



NOTE: Persons of Hispanic origin may be of any race but are categorized as Hispanic; other groups are non-Hispanic.

SOURCE: CDC, Risk for COIVD-19 Infection, Hospitalization, and Death by Race/Ethnicity, //www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html, accessed 4/5/2021.

KFF

AI/AN Public Health Services

- The Indian Health Service (IHS) is tasked with providing health care to members of federally-recognized tribes at no cost.
  - Only 3% of IHS funding is allocated to preventive health and 6% of funding is devoted to mental and behavioral health services.[1]

- AI/AN residents living outside of tribal lands are under the purview of the IHS as well as non-tribal, state and local public health agencies.

- The responsibility to deliver public health services to communities living on tribal lands primarily remains with tribes and tribal health organizations.

1. Heisler, EJ. Indian Health Service(IHS) Funding: Fact Sheet. 2017. Congressional Research Service. https://crsreports.congress.gov/product/pdf/R/R44040.

AI/AN Public Health Services

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Table 8 THO PUBLIC HEALTH NEEDS

Need	Additional Resources (n=86)		CDC % (n=89)		Other Federal Agencies (n=84)		States % (n=77)		TOTAL
	N	%	N	%	N	%	N	%	N
Funding support	34	40%	36	40%	33	39%	34	44%	137
Training (including technical assistance)	7	8%	27	30%	12	14%	8	10%	54
Partnership support	3	3%	2	2%	9	11%	21	27%	35
Public health education/materials support (culturally relevant, including public health education, public health law; communication)	13	15%	14	16%	3	4%	3	4%	33
Staffing support	26	30%	2	2%	2	2%	2	3%	32
Data support	10	12%	10	11%	2	2%	8	10%	30
Honoring the federal trust responsibility through consultation and respecting Tribal sovereignty			3	3%	6	7%	5	6%	14
IT support (including equipment and telehealth)	14	16%							14
Infrastructure support	10	12%							10
Public health accreditation support	1	1%	2	2%	1	1%	3	4%	7
Transportation support	7	8%							7
Loan repayment/forgiveness			1	1%	1	1%	4	5%	6
Public Health Associate Program (PHAP, CDC-specific program) support			4	4%					4
Reimbursement for non-clinical services							4	5%	4

National Indian Health Board. *Public Health in Indian Country Capacity Scan Report, 2019*.

AI/AN Public Health Services

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Study Objective

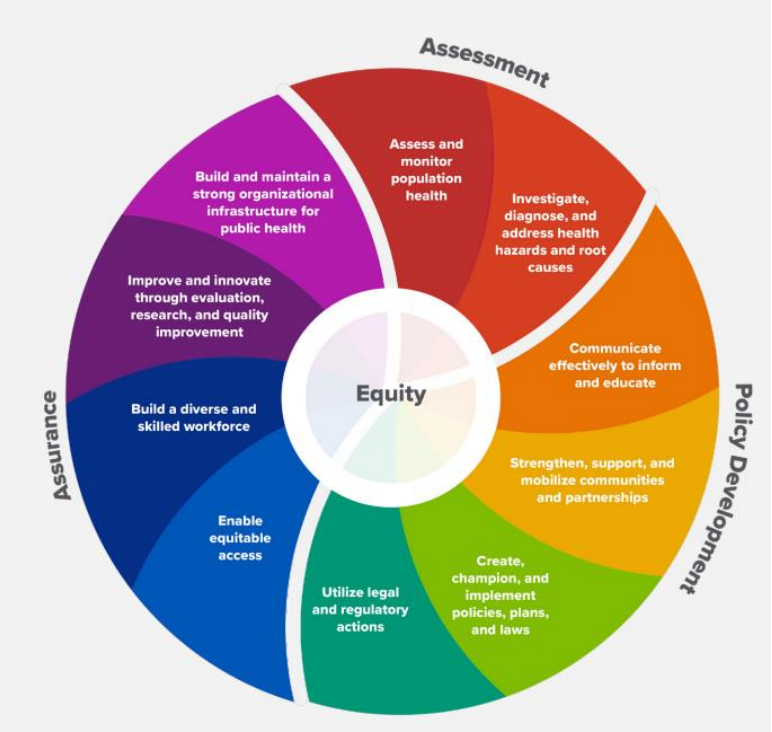
To understand the variation of inclusion of tribal organizations in community health networks and the predictors of inclusion.

NALSYS Data

We used 2018 data from the National Longitudinal Survey of Public Health Systems (NALSYS).

NALSYS collects information about **19** public health activities.

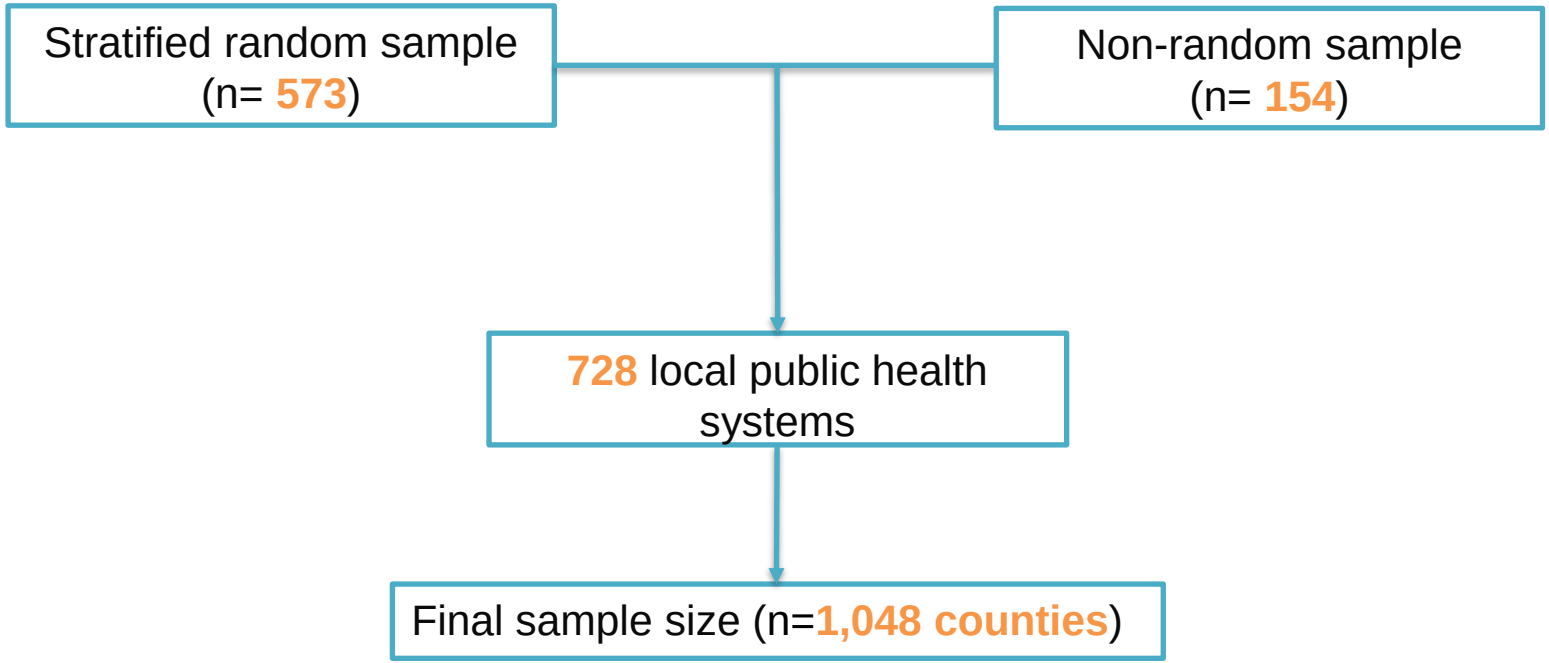
1) Whether the activity was implemented in the community during the past 3 years.
2) The network of organizations involved in activity implementation.
   - In 2018, “tribal organization” was added as an organization choice.



https://debeaumont.org/10-essential-services/

http://systemsforaction.org/national-longitudinal-survey-public-health-systems

Study Population



Key Measures

Tribal Inclusion in Community Health Networks

- **Extensive Margins:** Binary indicator for whether tribal organizations participated in at least one of the 19 public health activities.
- **Intensive Margins:** Proportion of activities with tribal organization participation out of the total number of activities implemented.

Diversity in Partnerships

- **Tie Strength:** Proportion of activities jointly contributed with other organizations.

Community Characteristics

- AI/AN population size (American Community Survey)
- Presence of AI/AN-serving health facilities (IHS Facility Tracker)
- Distance to nearest reservation land (US Census Bureau's American Indian Reservation Statistical Area Database)
- Demographic and socioeconomic characteristics (Area Health Resources Files)

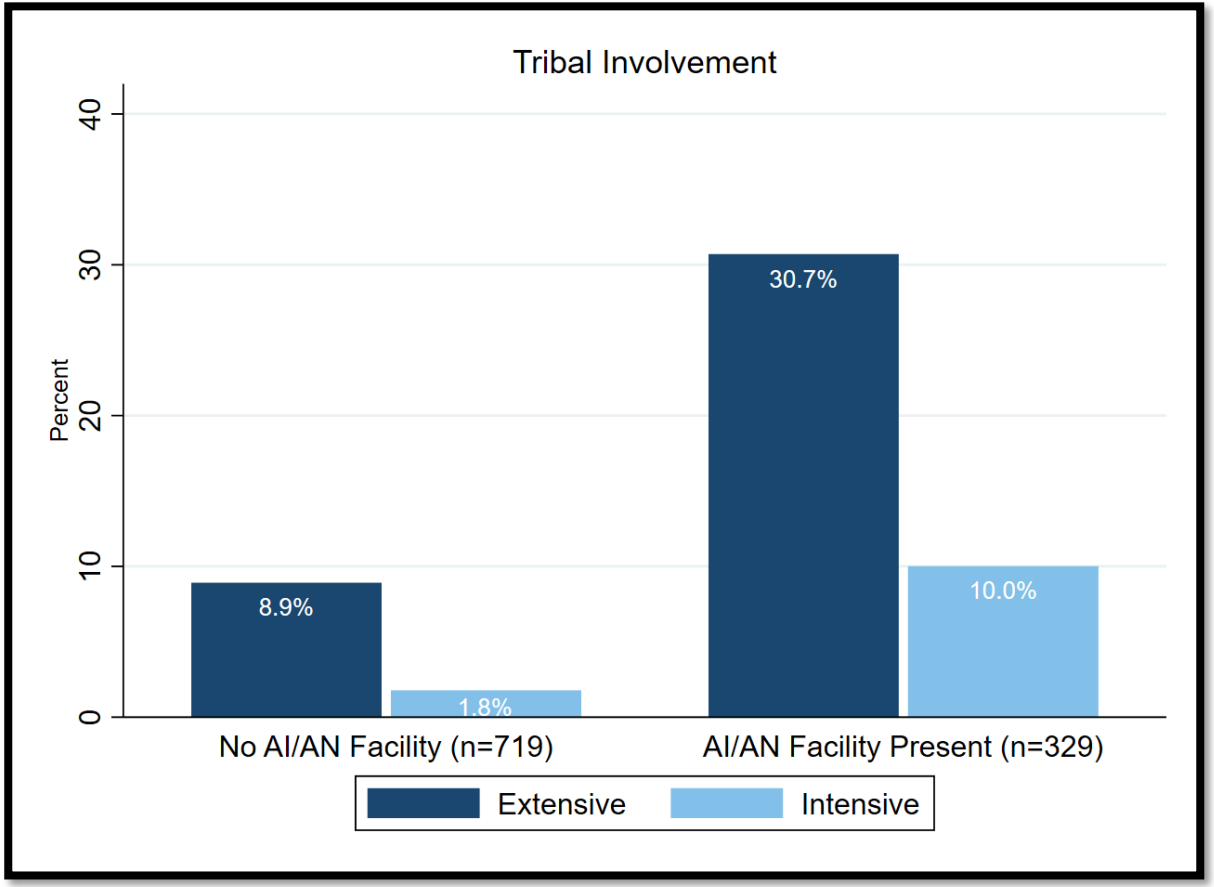
Analysis

- Two-part regression models were used to estimate predictors of tribal inclusion.
  - 1st stage – Logistic regression model (*extensive margins*)
  - 2nd stage – Generalized linear model with a log link and gamma distribution (*intensive margins*)

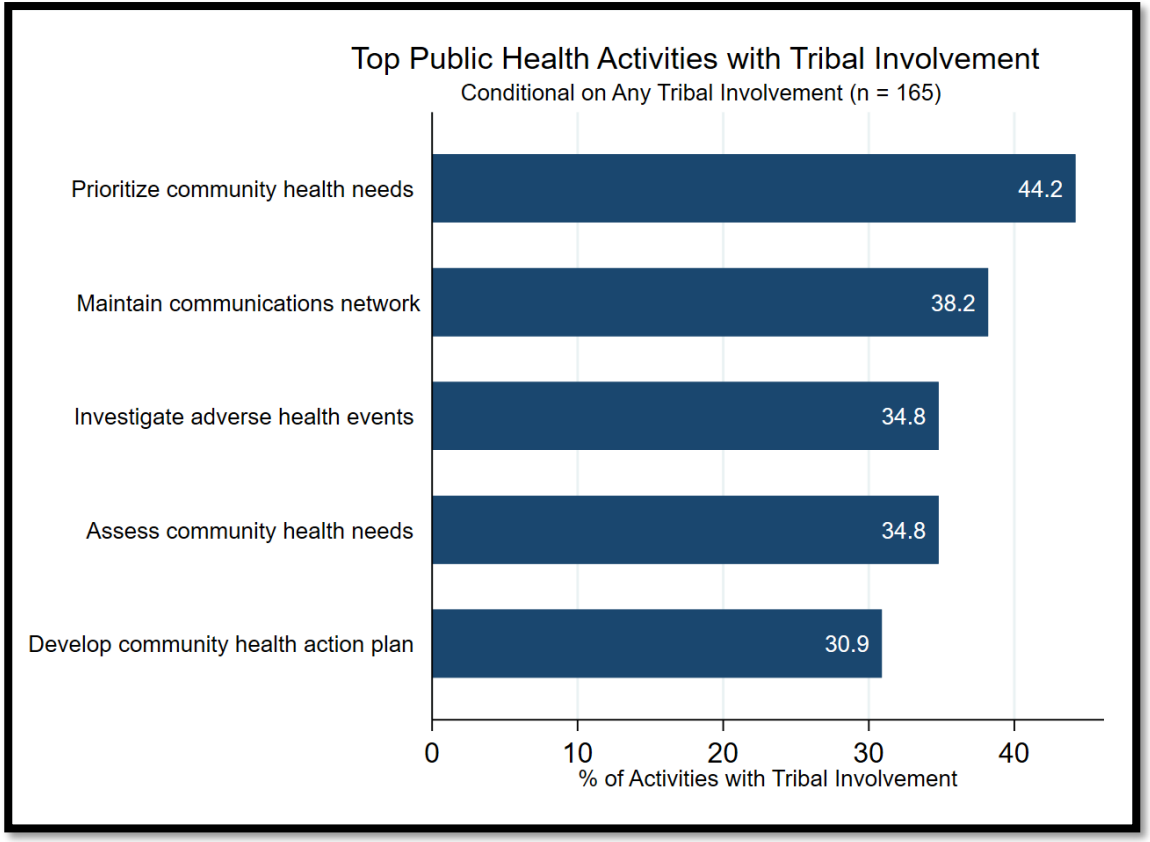
- Social Network Analysis visualizations were created to evaluate the diversity in partners.
  - Dyads represent the tie strength between two sectors.

Results – tribal involvement in community health networks

16% of counties reported any tribal involvement (n=165)



Results – by Activity Type



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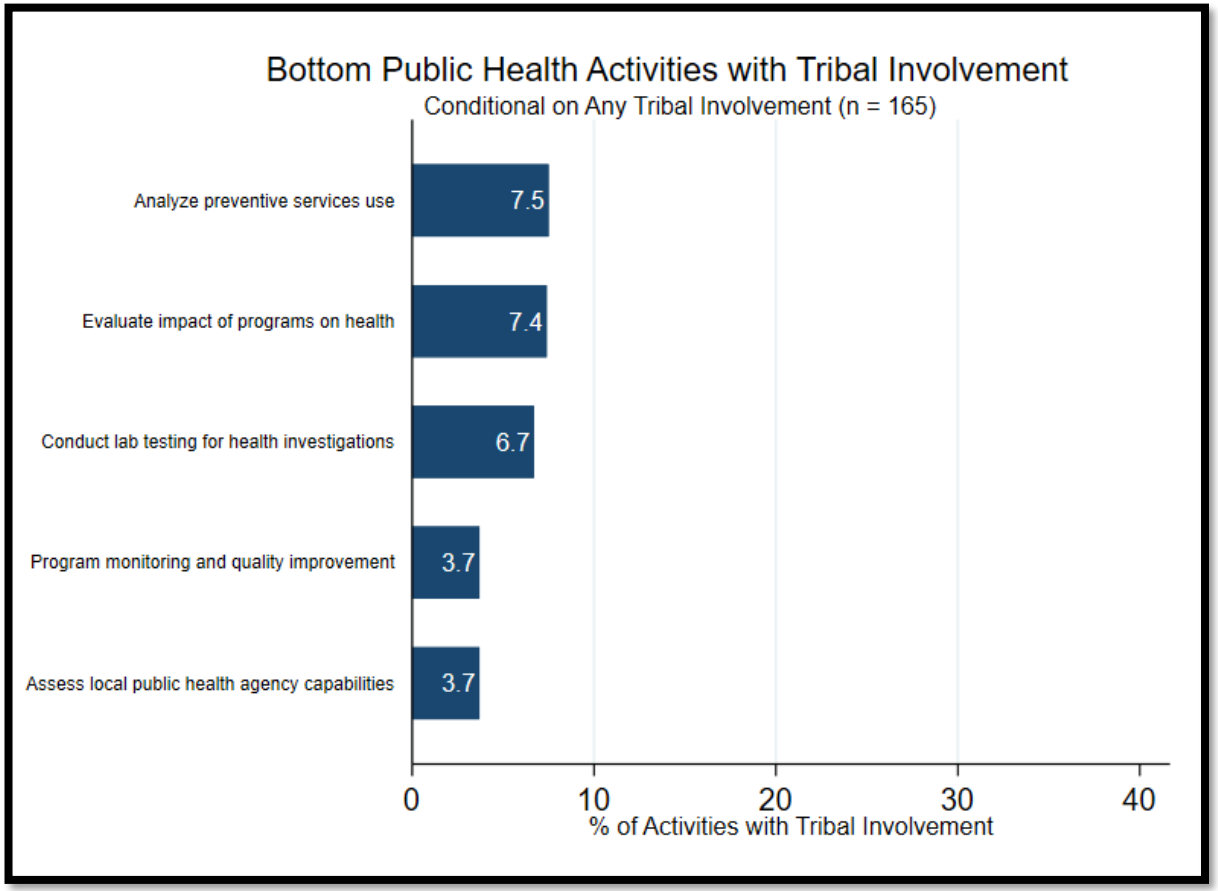

Results – Predictors of Tribal Inclusion

	1st stage Extensive Margin	2nd Stage Intensive Margin	Two-part Model Overall
	(1)	(2)	(3)
AIAN percent – below 1%	0.036	-0.100*	-0.007
	(0.045)	(0.055)	(0.015)
AIAN percent – above 1%	0.018***	0.004**	0.005***
	(0.005)	(0.002)	(0.001)
AIAN-Serving health facilities			
IHS-directed	0.072	-0.006	0.017
	(0.051)	(0.039)	(0.015)
Tribal-led, IHS	0.125**	0.072	0.046**
	(0.062)	(0.049)	(0.020)
Urban Indian Health Program	0.009	-0.000	0.002
	(0.041)	(0.045)	(0.013)
Tribal-led, Non-IHS	-0.057	-0.037	-0.019
	(0.050)	(0.077)	(0.015)
Tribal land distance (10 miles)	-0.008**	-0.009**	-0.003***
	(0.004)	(0.004)	(0.001)
Tribal Epidemiology Center	-0.030	0.085	0.003
	(0.048)	(0.112)	(0.022)

***p<0.01, **p<0.05, *p<0.1; Table presents marginal effects. Models controlled for demographic and socioeconomic variables. Standard errors clustered at survey unit level.

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Results – Social Network Analysis

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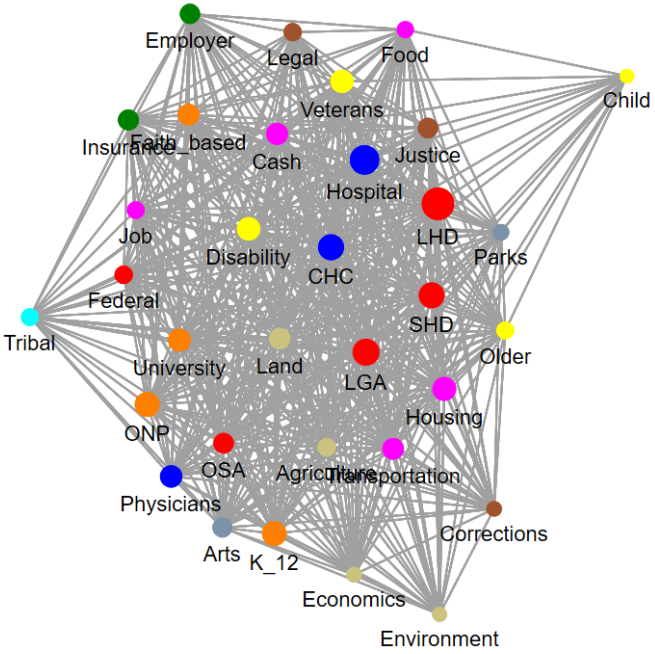
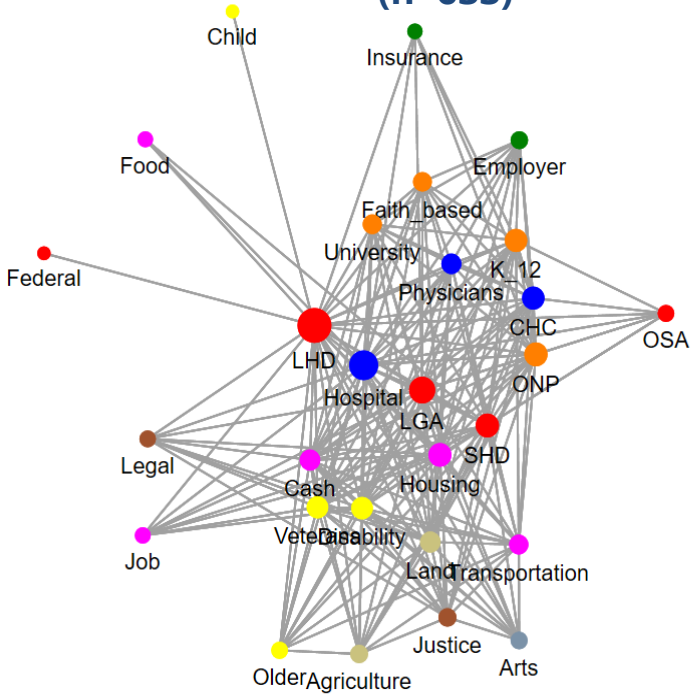
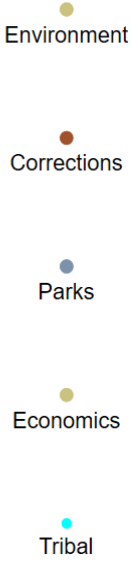
Networks with tribal involvement (n=95)



Networks without tribal involvement (n=633)





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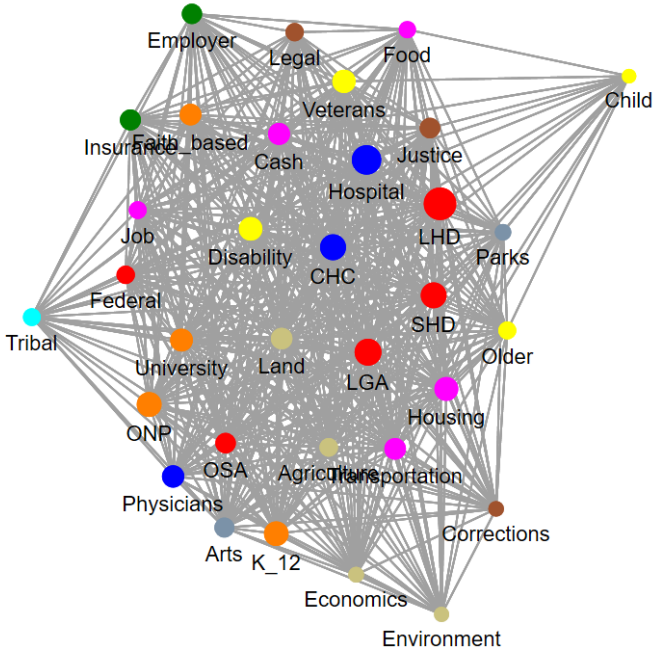
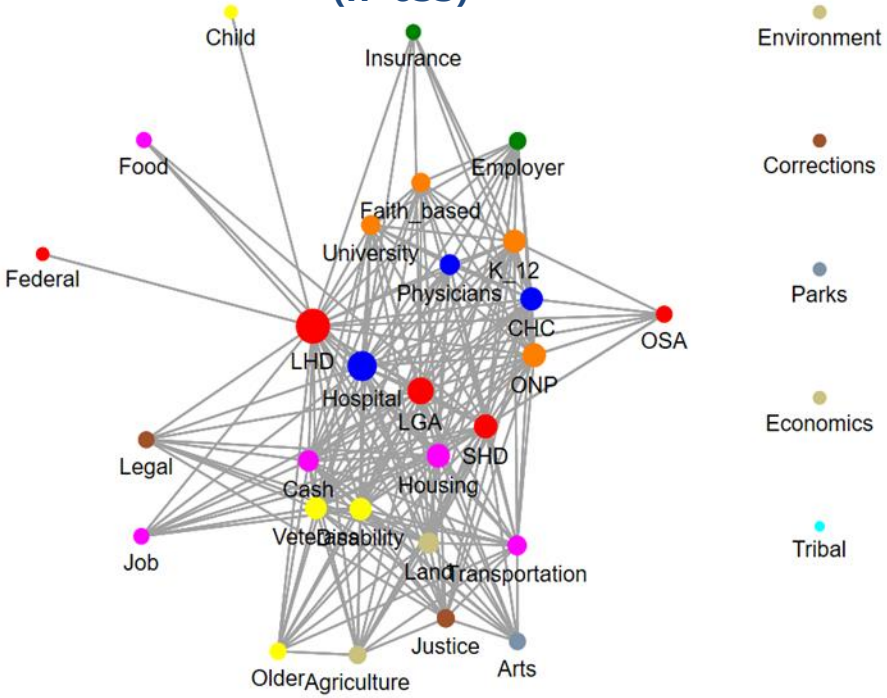


Network Measures	
Network Density	93.9%
Total Sectors & SS	33
Average Activities	72.2%
PH Dept Centrality	25.7%
Average Betweenness	1.94

Results – Social Network Analysis

Networks without tribal involvement (n=633)



Network Measures	
Network Density	39.8%
Total Sectors & SS	28
Average Activities	62.7%
PH Dept Centrality	14.5%
Average Betweenness	10.2

Results – Social Network Analysis

Networks with tribal involvement

LHD & 12 Others (3.4)

6 Others (1.3)

Networks without tribal involvement

Study Limitations

- NALSYS data is self-reported data by local, **non-tribal**, health officials.

- Cannot assess the strength of collaboration between organizations or the intensity of participation in public health activities.

Key Findings

- The vast majority (84%) of community health networks do not report tribal organization involvement.
- Community health networks with tribal organizations → diverse networks
- Although the presence of tribal-led health facilities increased the likelihood of tribal involvement, IHS direct care facilities and Urban Indian Health Programs were not associated with tribal involvement in community health networks.

Public Health Implications

- Efforts to address AI/AN health should include dedicated funds to support cross-sector collaboration.
- Federal and state health agencies may promote tribal engagement at the local level by hiring a tribal health liaison.
- Community health networks may prioritize the inclusion of tribal organizations in activities where current participation is low and IHS services are insufficiently funded (e.g., preventive health services).

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Local Public Health Systems' Efforts in Addressing Disparities in Community Health

Presented By:

Elleni Mehari, MA
PhD student in Health Services Research
Colorado School of Public Health | Health Systems, Management & Policy
Anschutz Medical Campus

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Outline

Rationale

Research Aim

Data/Methods

Findings

Conclusions, Implications, Future Steps

Community Health

- Barriers to equitable outcomes in health

- Working toward health equity
  - Preventable differences closely linked to social determinants of health
  - Housing and transportation; Schools and workplaces; Social network composition

Image: John Hopkins Bloomberg School of Public Health

Local Public Health Systems

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- Public health systems' efforts in improving community health
  - Capital: breadth and depth of multi-sector relationships
- Inequities in efforts across the United States
- Health action plans and initiatives
  - Which needs are being addressed
  - Emphasis on inequities/disparities
- Creating a context to achieve health equity

Research Aim

Understand the relationship between public health system capital and the proportion of community health initiatives and action plans directed at reducing health inequities/disparities

Data

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2018 National Longitudinal Survey of Public Health Systems (NALSYS)

- Measures implementation and impact of multi-sector population health activities
- Multi-sector engagement
- Nationally representative cohort of U.S. communities
- Survey respondent is designated local public health authority

Methods

- Logistic regression model
- Predictors of interest
  - Primary: Composite score of local public health system capital
    - Limited: lowest density network; narrow scope
    - Conventional: low density network; moderate scope
    - Comprehensive: dense network; broad scope
  - Multi-sector engagement
    - Employers, transportation, assistance with housing, economic development, support services for older adults, hospitals, faith-based organizations
  - Socio-economic demographics

Outcome:

Proportion of community-driven health initiatives and action plans aimed at reducing health inequities/disparities

- Above or below 50% effort
- No distinction between inequities/disparities

Results:
Increased Efforts Toward Reducing Inequities/Disparities

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System Capital

Probability of increased efforts:

15 percentage points higher in comprehensive systems compared to conventional and limited

Multi-Sector Engagement

Involvement of:

- Public health agency
- Employers
- Support services for older adults
- Transportation services

Socio-Economic Demographics

Rise in uninsured and nonwhite populations

$p<.05$ for each predictor

Compared to Comprehensive Health Systems

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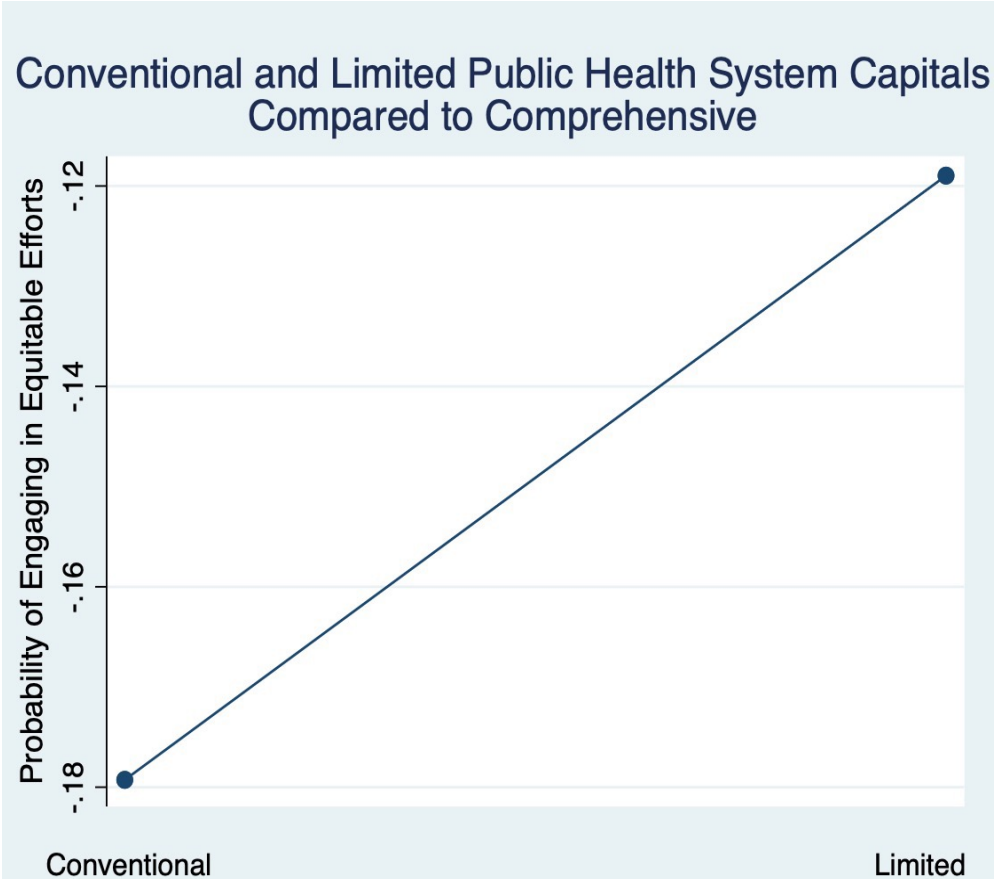
<u>Conventional:</u>
18 percentage points lower* in efforts toward reducing inequities/disparities

<u>Limited:</u>
12 percentage points lower in efforts toward reducing inequities/disparities

- Greater gap between conventional and comprehensive systems



* p<.05

Conclusions and Implications

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Conclusion	Implication
Strongest public health systems were more likely to engage in equity-driven efforts	Prioritize partnerships with community members and multi-sector organizations

Conclusions and Implications

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Conclusion	Implication
Limited public health systems more likely than conventional to target inequities/disparities	Limited systems may be more intentional with distribution of resources

Conclusions and Implications

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Conclusion	Implication
Community health initiatives and action plans can help identify if inequities/ disparities are being addressed	Community-based efforts can be leveraged to improve population health

Future Steps

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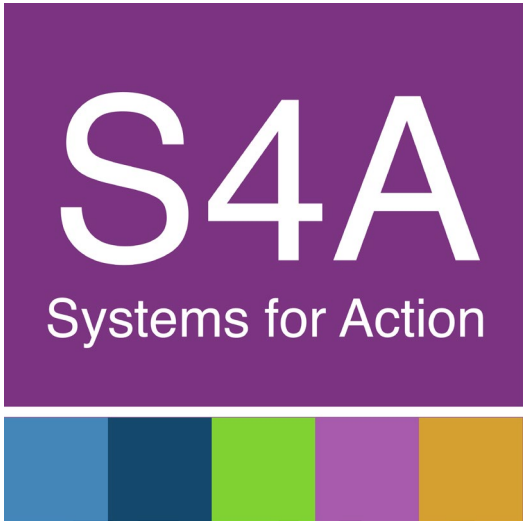
- Importance of cross-sector relationships
- Patterns/trends in communities
  - How do these efforts affect outcomes?
  - Social network analysis
  - Connectedness and influence of community organizations over time

Questions?



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Upcoming Webinars

colorado school of public health

Humana

Glen Mays, PhD

Jessica Dobbins, DrPH

September 15 at 12pm ET

Humana's Bold Goal: A Health Plan-Sponsored Population Health Initiative to Address Social Determinants of Health Webinar

Register at https://ucdenver.zoom.us/webinar/register/WN_mVr8QdloSzKQL9-tbhyeaw

Acknowledgements

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Robert Wood Johnson Foundation

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