Identifying Vulnerable Communities in Health Impact Assessments

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Acknowledgements

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  - Team members:
    - Tatiana Lin, M.A.
    - Shawna Chapman, Ph.D., M.P.H.
    - Sheena Smith, M.P.P.
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Kansas Health Institute (KHI)

- **Vision:** *Healthier Kansans through effective policy.*
- **Mission:** *To improve the health of all Kansans by supporting effective policy making, engaging at the state and community levels, and providing non-partisan, actionable and evidence-based information.*
  - State-level public health and health policy
  - Nonprofit, unaffiliated with academia, non-advocacy

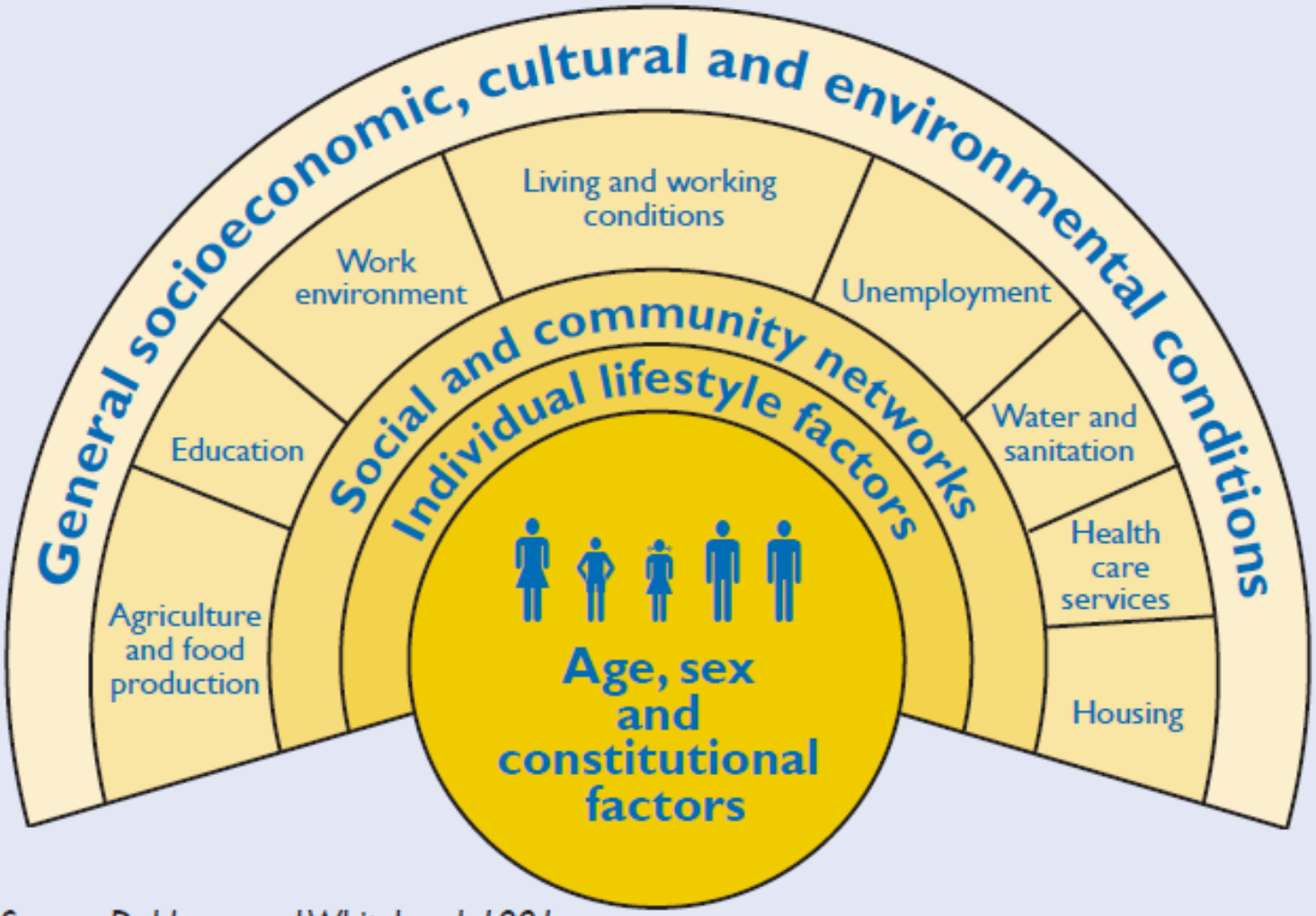
Background

St Joseph
Kansas City
Topeka
Olathe
Wichita
Map data ©2015 Goog

Objectives

- List key values in HIA
- Describe the need for a tool to identify vulnerable populations in HIA
- Illustrate the usage of the tool: a topic-tailored vulnerability score
- Discuss the application of the tool in HIA and other areas

Main Determinants of Health

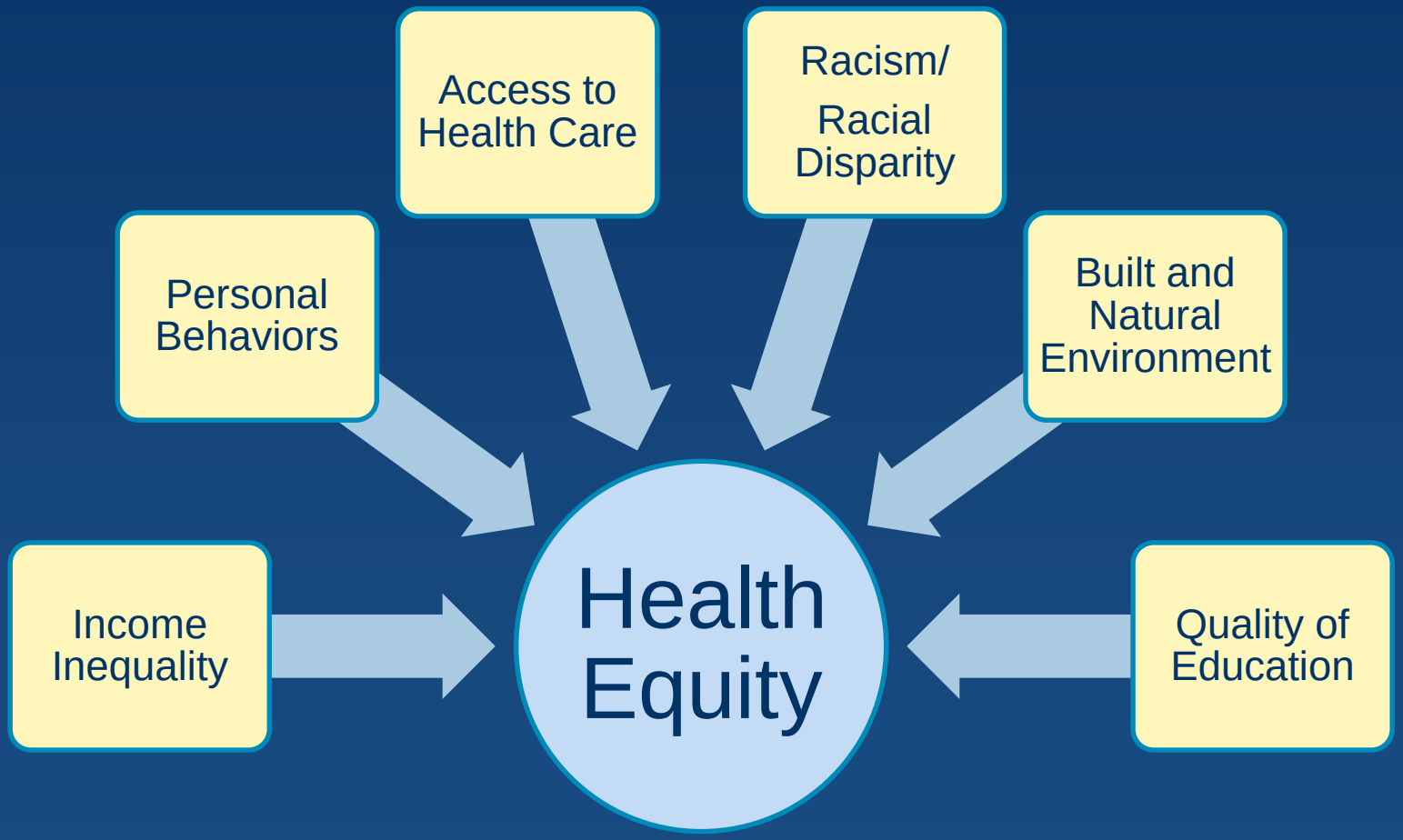


Source: Dahlgren and Whitehead, 1991

Health Impact Assessment Values

- HIAs identify harms and benefits **before** decisions are made.
- HIAs identify **evidence-based strategies** to promote health and prevent disease.
- HIAs increase transparency, support inclusiveness, democracy, and community engagement in the policy decision-making process.
- **HIAs advance equity and justice:**
  - **Focus on populations likely to be disproportionately affected (vulnerable populations).**

Health Equity: Key Contributors



Defining the Need

- HIAs could benefit from a more intentional approach to addressing equity
  - Tools exist (Equity matrix: http://www.humanimpact.org/component/jdownloads/finish/9/294)
  - … but more are needed
- Decision-makers are faced with multiple decisions and tight timelines
- Making HIA findings relevant in a succinct way is a challenge for practitioners

Topic-Tailored Vulnerability Index

- Relatively simple quantitative tool to identify disproportionately affected communities across various topics
- Needed elements:
  - Zip code or county-level data
  - Prioritized list of indicators
- Demonstration case: Kansas' Medical Marijuana HIA

Potential Health Effects of Legalizing Medical Marijuana

Health Impact Assessment

Kansas Health Institute (KHI)

Issues Addressed

In Kansas, three bills related to medical marijuana were introduced in the 2015 legislative session: Senate Bill 9/House Bill 2011, and House Bill 2282. The first two bills would legalize medical marijuana use for 12 defined symptoms and conditions. The third would allow only high-THC marijuana to be used for patients with epilepsy/seizures.

The study analyzed five health issues related to this bill:

- Access to Marijuana
- Consumption of marijuana
- Marijuana-related crime
- Driving under the influence of marijuana
- Accidental ingestions

Geographic Scope & Populations Impacted

Geographic Scope

State of Kansas (entire state)

Populations Impacted

Kansas residents, including:

- At-risk youth
- Children under 5
- Individuals with certain medical conditions
- Vulnerable populations, including low-income individuals

Decision Making Process Targeted

Kansas Legislation introduced in 2015.

- KHI presented neutral testimony on SB 9 and HB 2282
- HB 2282 was passed out of committee
- Stakeholders believe the bill still has a chance to be worked in the 2015 session

Findings & Recommendations

Legalization of Medical Marijuana may result in:

- Little to no overall consumer consumption
- Increased consumption among at-risk youth
- No increase in crime
- An increase accidental ingestion, primarily in children under 5 years of age

Recommendations:

- Add questions to the state-added module of the BRFSS related to marijuana use
- Ensure that law enforcement prosecutes those that willingly share marijuana with unauthorized individuals
- Educate students about risks associated with marijuana use
- Implement protective packaging requirements to deter young children from ingesting marijuana

Application of the Tool

- What communities in Kansas will be disproportionately affected by the legalization of medical marijuana?
- What characteristics are associated with marijuana use and related factors (i.e. crime)?

Methodology

- Regressions identified key indicators connected to marijuana use among youth and adults
- Indicators included:
  - Property and violent crime
  - Poverty, income, unemployment
  - Educational attainment
  - Alcohol use
  - Disparities in poverty rates

Methodology

- 15 measures identified at the county level (see handout)
- Z-score distribution calculated for each measure
- Number of measures >1.5 SD tallied for each county
- Tally total=vulnerability index

Methodology

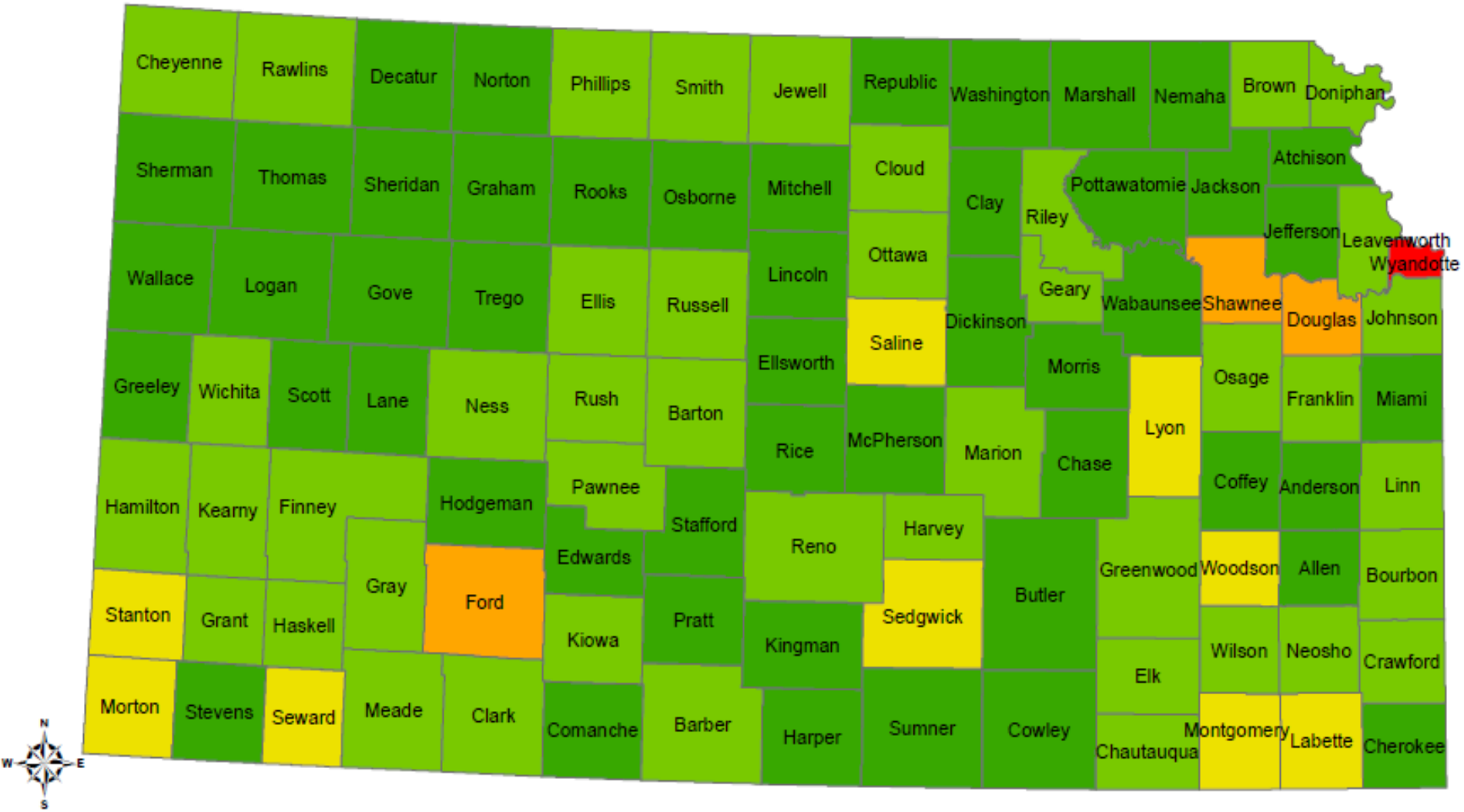
County	lifetime_z	current_z	age_z	poverty_z	HS_z	income_z	unemploy_z	offense_z	lifetimeAlcohol_z	Binge_z	Poverty_disparity_BW	Poverty_disparity_HW	Sum Score
Allen	-0.073895	0.4029177	1.302	1.0985434	-0.03	0.9600103	0.956903042	0.79351941	-0.20641119	0.41476	0.330375333	-0.763833981	0
Anderson	-0.007194	0.6774444	-0.49	0.6451727	-0.03	0.3979727	1.091867386	1.0212054	0.512878774	1.010468	#VALUE!	#VALUE!	0
Atchison	0.7663151	0.7406577	1.105	0.5735878	-0.27	0.2375283	1.484490933	0.02562919	0.37870432	1.376193	-1.114781533	#VALUE!	0
Barber	0.2489607	0.070596	-1.537	-0.786524	-0.82	0.049968	-0.760824974	-0.7439475	1.679006601	1.398699	#VALUE!	#VALUE!	1
Barton	0.2696997	0.7334333	0.399	0.5497262	0.507	0.2002157	-0.27004554	-0.1165038	0.352443876	1.720114	-0.117472759	0.75831924	2
Bourbon	-0.29754	-0.326745	1.72	1.2178515	-0.01	1.1952408	0.871016641	0.49491958	0.511647816	-0.22948	1.004029184	1.895034521	2
Brown	0.5314597	0.0904631	0.677	2.1007314	-0.3	0.6753407	0.11030852	0.9085479	-0.868666754	-0.63177	-0.84757805	1.07189587	1
Butler	0.5847086	0.7695553	0.005	-1.239895	-0.73	-1.84545	1.055058929	0.27705279	-1.535435831	-0.86668	-0.809943757	-0.959819374	0
Chase	0.8184429	0.6124249	-1.35	0.502003	-0.27	0.6125525	-0.196428625	-0.0082777	0.452972137	0.549093	#VALUE!	#VALUE!	0
Chautauqu	0.9238195	0.4092391	0.605	0.6451727	0.381	1.4194383	1.202292759	0.29261635	1.022905829	0.527993	#VALUE!	1.836238904	1
Cherokee	-0.301464	-0.583211	0.278	1.2417131	0.381	1.0370481	1.410874018	0.34227944	-1.07382647	-0.88427	-0.704567735	-0.946753681	0
Cheyenne	-1.981885	-1.763495	1.268	-0.71494	-0.21	1.1140536	-1.030753662	-1.0721207	-1.132091829	-1.87805	#VALUE!	#VALUE!	1
Clark	-0.511657	-0.735826	1.33	0.9792353	-0.34	0.3850097	-0.908058803	0.06944452	0.800923016	1.054074	#VALUE!	1.65985205	1
Clay	0.3307957	-0.08834	-0.269	-0.070676	-1.09	-0.271725	-0.503165771	0.36271299	0.159183424	0.390144	#VALUE!	-0.855293831	0
Cloud	-0.855812	-0.658164	0.115	0.812204	-0.09	0.9034946	-0.638130115	0.18293941	-2.100445689	-1.00453	1.877144791	0.091968903	1
Coffey	-1.7801	-1.535927	-1.153	-0.643355	-0.71	-0.98713	0.502932067	1.3407259	-1.069723276	-1.69238	1.293813243	#VALUE!	0
Comanche	-0.535198	-1.717439	0.25	-1.526235	-0.32	0.8010456	-0.883519832	-0.915414	1.159542199	0.068728	#VALUE!	0.745253547	0
Cowley	0.7125058	0.7234998	0.519	1.313298	0.129	0.6690039	0.662435382	1.38569802	-0.253597925	-0.52839	-0.546503703	0.346749914	0
Crawford	1.1553118	1.4712237	0.399	1.8621152	-0.07	1.415514	1.251370702	0.07199668	-0.554772388	-0.00301	-0.490052263	0.39247984	2
Decatur	0.5740588	0.6295828	-0.072	-0.118399	-0.77	1.022509	-0.834441888	-1.1053688	0.484566733	0.335988	#VALUE!	#VALUE!	0
Dickinson	0.1379789	-0.022418	0.283	-0.28543	-0.45	-0.308426	0.147116978	0.21525176	0.773021294	0.53995	#VALUE!	-0.718104056	0
Doniphan	0.1357368	0.4805799	0.427	0.000909	-0.23	0.1171629	1.631724763	1.65121436	1.103738757	0.5294	0.710481696	-0.286936191	2

Results

- Max vulnerability index score was 9 (Wyandotte County)
- Next highest: 5
- Scores categorized as:
  - “Low” (0, 1, or 2)
  - “High” (3, 4, or 5)
  - “Very high” (6+)
- 13 Counties (12%) scored greater than 3

Results

Vulnerable Counties	
County	Vulnerability Score
Douglas	5
Ford	5
Labette	4
Lyon	3
Montgomery	3
Morton	3
Saline	4
Sedgwick	3
Seward	3
Shawnee	3
Stanton	3
Woodson	4
Wyandotte	9



Number of Indicators Where County is >1.5 SD from Kansas mean

- 0
- 1 - 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 - 10

Conclusions

- Combining components of health equity with topic-specific measures helps to identify vulnerable communities
- The tool can be used to succinctly communicate results with decision-makers
- Relatively simple methodology makes the tool widely useful

Other Uses for the Tool

- **Use in screening:** identify projects with bigger potential for impact
- **Use in recommendations:** target interventions to communities which may be impacted most
- **Assist in community engagement:** engage representatives from vulnerable communities to serve on advisory panel
- **Use outside of HIA:** funders can use the tool to target funding opportunities

Limitations

- Most useful when granular data are available
- Need many data points
- Some important indicators may have been left out (due to lack of data or lack of identification)
- All indicators given equal weight- but weights could be developed, if desired

Questions?

- Questions for you:
  - What are your thoughts about this tool?
  - What are some opportunities and limitations?
- Questions for me?

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Links

- **Kansas Casino HIA**
- **Wichita, KS Transit HIA**
- **Kansas Liquor HIA**
- **Kansas Corporate Farming HIA**
- **Kansas Medical Marijuana HIA (coming soon)**

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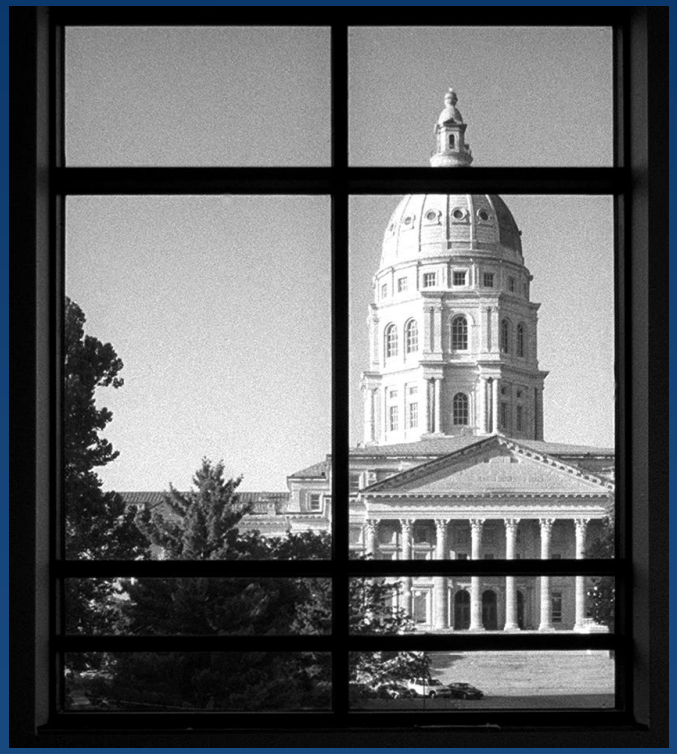

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