What are emerging data findings from rural cancer patients in Wisconsin?

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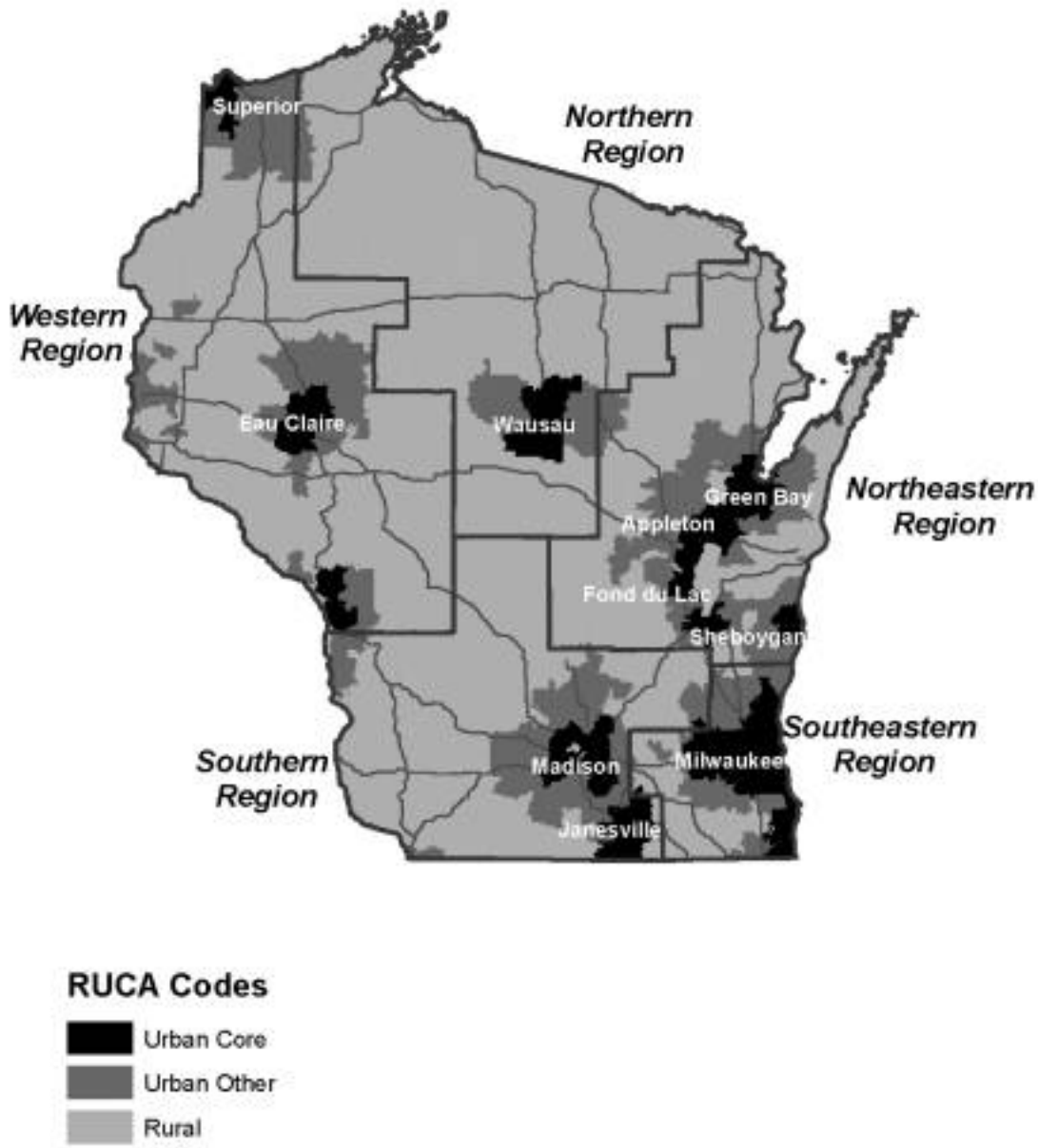
Disclosures/FCOI

- None

How do we define “rural”?

- Multiple measures – RUCA (zip), RUCA (census tract), RUCC, IRR, etc.
- 1,567 pancreatic cancer pts from the UW Cancer Registry, representing 84 counties and 452 zip codes, were assigned rurality codes based on three indices spanning 1983-2013
- Rurality was compared across the three indices and over time
  - via the median and interquartile range
  - inspected visually with violin plots
- 31% of patients had a change in urban to rural despite no change in address
- **RUCC performed best** – better distribution, less change over time (change in census tracts), widely available

- Abstract: Taylor A, Schiefelbein A, Zhang J, Krebsbach J, Skala M, Eason JM, LoConte NK. “Getting rurality right: investigating cancer across the urban-rural interface.” DOI: 10.1200/JCO.2020.38.15_suppl.e19063 *Journal of Clinical Oncology* 38, no. 15_suppl



Guerrero
WMJ 2014

Cancer mortality and SDOH

- Counties were defined as rural (N=19, RUCC 7-9) or non-rural ("urban", N=53, RUCC 1-6)
- Age-adjusted county-specific cancer mortality rates for all cancer sites combined were obtained from the state cancer registry
- Health factor data (County Health Rankings methodology)
  - health behaviors (smoking, drinking alcohol, obesity, physical activity)
  - clinical care (HPV vaccination; breast, cervical, and colorectal cancer screening; density of primary care physicians)
  - Socioeconomic factors (Area Deprivation Index* based on 17 census items)
  - Physical environment (access to grocery stores and alcohol outlets, air quality, pesticide use).

•Trentham-Dietz A, LoConte NK, Rolland B, Cadmus-Bertram L, Downs TM, Eason JM, Fredrick CM, Hampton J, Zhang X, Gangnon RE. Associations between multilevel health factors and cancer mortality according to rural residence [abstract] AACR; Cancer Epidemiol Biomarkers Prev 2020;29(6 Suppl_2):Abstract nr D002.

Mortality/SDOH continued

- Cancer mortality: 181 (rural) vs 164 (non-rural) per 100,000.
- The composite health ranking was positively associated with cancer mortality rates (Pearson correlation coefficient 0.38, 95% CI 0.17-0.57), with worse rankings for rural (average 44, interquartile range, IQR 39-51) than for urban counties (average 34, IQR 25-42)
- Health factor category rankings between rural and urban counties may explain the difference in cancer mortality
  - socioeconomic factors (average rank 50 vs 32)
  - clinical care (43 vs 34)
  - behavioral factors (40 vs 35)
- Physical environment factor rankings were better for rural (average 33) than urban (average 37) counties

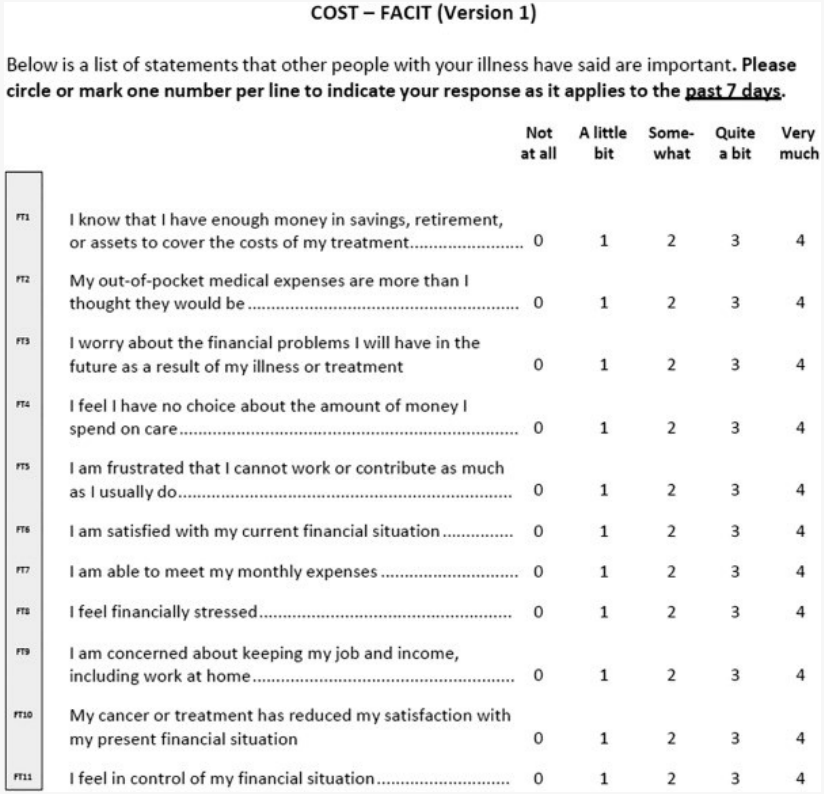
Health Communcation

- Facilitated interviews with 17 Wisconsin rural community and 8 research partners
- Interviewees were asked open-ended questions about facilitators and barriers to rural cancer prevention, screening, treatment, and research. Interview transcripts were analyzed using inductive and deductive coding.
- Bird J, SOPHE 2020 abstract

Health communication continued

- 53% prioritized increasing knowledge among residents
  - Resources for cancer screening and preventive behaviors
- 41% see attitudes and perceptions as barriers
  - Lack of trust in healthcare workers
  - fear of cancer diagnoses
- 29% saw cultural opportunities
  - Stoicism and behavioral norms
  - Need for culturally tailored communications for rural communities
- 41% reported lack of knowledge among rural communities surrounding research processes and trust in researchers
- 25% had negative experiences with researchers in rural communities
- 25% perceived that reluctance from community partners to participate in research stemmed from a lack of knowledge of the research process

Financial burden



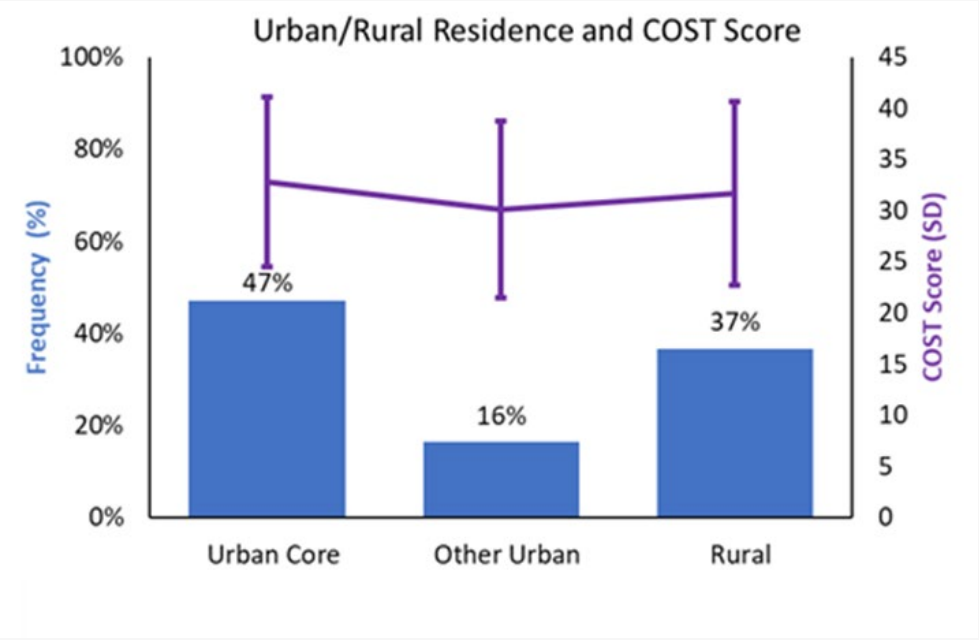
COST – FACIT (Version 1)

Below is a list of statements that other people with your illness have said are important. **Please circle or mark one number per line to indicate your response as it applies to the past 7 days.**

		Not at all	A little bit	Some-what	Quite a bit	Very much
FT1	I know that I have enough money in savings, retirement, or assets to cover the costs of my treatment	0	1	2	3	4
FT2	My out-of-pocket medical expenses are more than I thought they would be	0	1	2	3	4
FT3	I worry about the financial problems I will have in the future as a result of my illness or treatment	0	1	2	3	4
FT4	I feel I have no choice about the amount of money I spend on care	0	1	2	3	4
FT5	I am frustrated that I cannot work or contribute as much as I usually do	0	1	2	3	4
FT6	I am satisfied with my current financial situation	0	1	2	3	4
FT7	I am able to meet my monthly expenses	0	1	2	3	4
FT8	I feel financially stressed	0	1	2	3	4
FT9	I am concerned about keeping my job and income, including work at home	0	1	2	3	4
FT10	My cancer or treatment has reduced my satisfaction with my present financial situation	0	1	2	3	4
FT11	I feel in control of my financial situation	0	1	2	3	4

- SHOW, 2019: 306 Wisconsin cancer survivors (81% response rate)
- COmprehensive Score for financial Toxicity (COST) to test whether scores differed by urban/rural residence (RUCA)
- Lower scores indicate worse financial toxicity

Results



- Cancer survivors across all cancer types
- Mostly over age 65 (67%), white (91%), privately insured (79%), and female (59%)
- 37% live in rural areas
- 8% had to borrow money/go into debt due to cancer; 6% didn't receive treatment due to cost.
- More financial hardship was reported for survivors who are younger, Black, had public only or no health insurance, or lived in non-core urban places

Conclusions

- RUCC is preferred measure of rural vs. urban
- Rural communities' strengths include better physical environment, cohesive norms
- Opportunities for rural messages around cancer prevention and control
- Opportunities for universities to be better research partners
- Access to care (including telemedicine, rides) is key
- Financial toxicity is similar across urban-rural populations