Wisconsin Lung Cancer Initiative:

NLCRT 2019 Annual Meeting
Monday, December 9th
Cancer Disparities are Complex and Multi-Factorial

Figure 1: Risk Factors Contributing to Cancer Disparities. A complex combination of factors contribute to cancer incidence and progression (A) [Figure adapted from Rebbeck, T., AACR Science of Cancer Disparities, 2017 and the County Health Rankings Model, University of Wisconsin-Madison Population Health Institute, 2014].
INVESTING, CONNECTING AND INFLUENCING FOR IMPACT

Since 2004, AHW has worked to serve as a catalyst for positive change in the health of Wisconsin communities. Today, AHW calls this work changemaking, which encompasses the investing, connecting, and influencing activities through which AHW seeks to advance population health.

AHW invests in changemaking initiatives through two complementary programs:

The Healthier Wisconsin Partnership Program (HWPP) promotes community health improvement initiatives statewide by funding community-MCW academic partnership projects that address public and community health promotion, disease prevention initiatives, and works to enhance community capacity to effect positive change by supporting Change Incubator and Community-to-Community Mentoring opportunities.

The Research and Education Program (REP) supports new scientific discovery and innovative programs that enhance the education of patients, public health professionals, health providers, residents, fellows, and medical and graduate students.

During this reporting period, AHW made significant progress in key initiatives and in advancing projects with a variety of partners statewide.

AHW’s strategy is aimed at supporting long-term health impacts. Through strategic initiatives and high-impact work, we’re confident that the collective impact of our own efforts and the work of funded partners will lead to transformative successes statewide.”

Joseph E. Kershner, MD, Dean of the School of Medicine Executive Vice President of MCW MCW Consortium member
Lung Cancer Incidence Rate
Wisconsin, 2010-2015

The lung cancer incidence rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 20 closest diagnosed cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.

Lung Cancer Mortality Rate
Wisconsin, 2008-2013

The lung cancer mortality rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate mortality rates continuously across the map, based on the 40 closest lung cancer mortality cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.
A Multidisciplinary Team to Tackle a Multi-factorial Problem

Kirsten Beyer, PhD, MPH
Assistant Professor, Institute for Health and Society, MCW

David Frazer, MPH
Associate Director, Center for Urban Population Health, UW School of Medicine and Public Health

Lyle Ignace, MD, MPH
Executive Director, Gerald L Ignace Indian Health Center

Jose Salazar,
Director of Community Programs, 16th Street Community Health Center

Melinda Stolley, PhD
Professor of Medicine and Associate Director of Cancer Prevention and Control, MCW Cancer Center

Sandra Underwood, RN, PhD
Professor of Nursing, UW Milwaukee

Al Walker, MD
Professor Ruth Teske Professor in Surgical Oncology, MCW

Carol Williams, PhD
Professor of Pharmacology and Toxicology, MCW

Knowledge Development
Partner Cultivation
Collaborative Work Group Design
Statewide Listening Sessions and Questions

Question
1) Research: How would you describe the health of Wisconsin communities? Community: How would you describe the health of your community?
2) If money or resources were not an issue, what would you do to improve cancer disparities?
3) Why do maps of breast and lung cancer incidence and mortality look the way that they do?

Probe (if needed)
1) Rank your community’s health (A = excellent, F = terrible) and describe why you gave it that grade.
2) Are there assumptions that people make about [your community/research]?
3) Are there things that surprise you or don’t surprise you?
<table>
<thead>
<tr>
<th>Research</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>C2</td>
</tr>
<tr>
<td>R2</td>
<td>C3</td>
</tr>
<tr>
<td>R3</td>
<td>C4</td>
</tr>
<tr>
<td>R4</td>
<td>C5</td>
</tr>
</tbody>
</table>

### Biologic and Genetic Pathways
- Availability of Technology, Samples, and Models
- Genetic Predisposition
- Mechanisms of Protection or Damage

### Biological Responses
- Alcohol, Obesity, and Stress

### Individual Risk Factors
- Medical Mistrust, Delay/Adherence to Care
- Reproductive/Gynecologic Factors
- Individual Diet, Alcohol, Tobacco, and Drug Use

### Individual Demographics
- Access to Care
- Childhood and Community Education
- Cultural and Acculturation
- Gender and Race
- Employment and Socioeconomic Status

### Physical Context
- Environment (Community/Workplace Exposures)
- Location (Urban, Rural, Green, Isolated)

### Social Relationships
- Acceptability of Alcohol Consumption and Smoking
- Social Factors (Support, Isolation, Self-Efficacy)

### Social Context
- Partnerships

### Institutional Context
- Adequate Patient Support and Physician Training
- Capacity for Multi-Disciplinary Work
- Hospital Volume and Improved Cancer Detection
- Need for Champions and Funding Opportunities

### Social Conditions and Policy
- Environment, Housing, and Insurance-Based Policy
- Insurance Issues
- Social Inequality and Societal Poverty

---

**Listening Sessions Identify Need and Desire for Collaborative, Interdisciplinary Approaches.** Results of focus groups with diverse groups of people (200+ participants) with expertise in either cancer or the communities impacted by cancer disparities. Blue boxes show areas where group had expertise, white boxes are areas where the group had no knowledge, or did not bring up a topic. (R = Research, C = Community, R1-3 = Basic and Clinical Researchers, R4 = Population Health Researchers)
Results

- **Biologic/Genetic Pathways**: We have an understanding of the interplay between genetics, race, SES, lifestyle, and cancer. **But we need better technology, more samples, and appropriate models.**
- **Biological Responses**: Obesity, alcohol consumption, and tobacco use are established risk factors, but stem from **deeper issues of stress and poverty.**
- **Individual Risk Factors**: **Medical mistrust and interest in making changes** are prevalent issues.
- **Individual Demographics**: Access to care (geographical, insurance, and tourism-based), cultural barriers, childhood education, and SES need to be addressed.
- **Physical Context**: Environmental hazards (wood milling & burning in homes, noncompliance with PPE) and geographical issues exist throughout Wisconsin.
- **Social Relationships**: **Tobacco & alcohol are widely accepted**, isolation is high, self efficacy is low.
- **Social Context**: Partnerships are needed and feasible, but **competitiveness** is an issue.
- **Institutional Context**: Health care professional training, capacity to do this type of work, guideline concordant care, and **need for champions and funding** would all improve outcomes.
- **Social Conditions and Policy**: **Adherence to smoke free laws**, environment/housing/insurance-based policy, social inequality & poverty
The NLCRT and its activities are supported by an educational grant from AstraZeneca