Healthcare Disparities in Appalachian TN: “The Perfect Storm”

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No Disclosures
“Appalachia missed out on the abundance which has been granted the rest of the nation.”

Lyndon B. Johnson, 1964
Appalachian Regional Commission

• 1960 – Conference of Appalachian Governors formed strategic plan

• 1963 – JFK formed Presidents Appalachian Regional Commission to “draw up comprehensive plan for the economic development of the Appalachian Region”

• 1964 – PARC Report

• March 9, 1965 – Appalachian Regional Development Act signed into law (PL 89-4) by President LBJ

• ARC reduced number of distressed Appalachian counties 60% (223 to 89) by year 2000
Agenda

• Appalachia
  – geography
  – sociodemographics

• Social Determinants of Health

• Strategies to achieve health equity

• Getting started

• Local Example
13 states

205,000 sq. miles

420 counties

25 million people

42% rural

12% non-white

Socioeconomic Overview of Appalachia 2010; courtesy of ARC
Appalachian County Economic Status

1960

2015

Distressed Counties of the Appalachian Region: 1960

219 Counties

County Economic Levels
- Distressed (48)
- At-Risk (106)
- Transitional (210)
- Competitive (16)
- Attainment (2)
- Classified by homogeneous characteristics:
  - Topography
  - Demographics
  - Economics

- UTMC 21-county service area
  - 9 counties in C. App
    - Usually distressed or at-risk
  - 11 counties in S.C. App
    - Knox MSA usually transitional
Education – HS and College Completion Rates: Appalachian TN (2008-12)

• 82.1% with HS diploma
  – US = 85.7%
  – TN = 83.9%
  – App = 84.1%
  – Knox = 89.7%; Campbell = 70.6%

• 20.4% with > Bachelor’s Degree
  – US = 28.5%
  – TN = 23.5%
  – App = 21.3%
  – Knox = 34.3%; Morgan = 6.1%
Economic Status (Poverty, PCMI, Unemployment): Appalachian TN (FY 2015)

• 17.8% live in poverty
  – US = 14.9%
  – TN = 17.3%
  – App = 16.6%
  – Hancock = 32.7%; Blount = 12.7%

• 2012 PCMI = $25,995
  – US = $36,223
  – TN = $30,741
  – App = $27,359
  – Knox = $34,122, Campbell = $11,267
Economic Status (Poverty, PCMI, Unemployment): Appalachian TN (FY 2015)

- 8.9% 3-year avg. unemployment
  - US = 8.9%
  - TN = 9.0%
  - App = 8.9%
  - Scott = 18.8%; Knox = 7.0%

- Industry Summary
  - Disproportionately more mining, agriculture, construction, manufacturing; contracted 2000-10 (nationally)
  - Underdeveloped service sector; expanded 2000-10 (nationally)
  - Employment lagged in boom years and fell further during recession
Prevalence of Self-Reported Obesity Among Non-Hispanic White Adults, by State, BRFSS, 2011-2013

Data not reported*         15%–<20%          20%–<25%         25%–<30%        30%–<35%        ≥35%

* Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.

http://www.cdc.gov/obesity/data/prevalence-maps.html
Tennessee Tobacco Use (Adults)*

Cigarette Use, 2013

*15.4% (15.7%) of 6-12 graders smoke

Poor Access to Care

- Shortage of primary and specialty care services in rural areas
- Geographic isolation without public or private transportation to/from health care facilities
- Hilly and mountainous terrain
- High percentage of underinsured
Appalachian Population Change

2000-2010
### 2012 Well Being Index: Appalachia is America’s “Sadness Belt”

<table>
<thead>
<tr>
<th>State</th>
<th>Life Evaluation</th>
<th>Emotional Health</th>
<th>Work Environment</th>
<th>Physical Health</th>
<th>Healthy Behaviors</th>
<th>Basic Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>WV #50</td>
<td>50</td>
<td>50</td>
<td>38</td>
<td>50</td>
<td>48</td>
<td>49</td>
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<tr>
<td>KY #49</td>
<td>49</td>
<td>49</td>
<td>31</td>
<td>49</td>
<td>50</td>
<td>38</td>
</tr>
<tr>
<td>TN #47</td>
<td>45</td>
<td>47</td>
<td>41</td>
<td>46</td>
<td>42</td>
<td>36</td>
</tr>
<tr>
<td>VA #14 (VA-9) (#321)</td>
<td>9 (332)</td>
<td>16 (387)</td>
<td>24 (426)</td>
<td>18 (289)</td>
<td>22 (57)</td>
<td>15 (313)</td>
</tr>
</tbody>
</table>

[http://appvoices.org/2013/03/25/americas-sadness-belt/](http://appvoices.org/2013/03/25/americas-sadness-belt/)
Our Mission
To serve through healing, education and discovery
“The Perfect Storms”
Socioeconomic Distress

Obesity, Smoking, EtOH

Poor Access

Growing

Aging
TN Cancer Incidence/Death Rate

TN cancer incidence rate exceeds US by 2.5%

TN cancer death rate exceeds US by 12.7%
Disparate Diseases

- Heart disease
- Asthma
- Obesity
- DM
- HIV/AIDS
- HBV/HCV
- Infant mortality
- Violence
Economic Impact

2003-06 - $1.24t (16%) would have been saved with elimination of health disparities
- $1t in indirect cost associated with illness and premature death
- $230b in direct medical expenditures

ROI always > 1:1

Why?

“Health disparities not only affect the day-to-day experiences of individuals, but also threaten the prosperity and well-being of entire communities.” – AMA

“America is its best when everyone has an opportunity to live a long, healthy, and productive life.” – HHS
I can't hear you!
La-la-la-la-la-la-la-la-
I can't hear you!

QUIT MAKING EXCUSES, PUTTING IT OFF, COMPLAINING ABOUT IT, DREAMING ABOUT IT, WHINING ABOUT IT, CRYING ABOUT IT, BELIEVING YOU CAN'T, WORRYING IF YOU CAN, WAITING UNTIL YOU'RE OLDER, SKINNIER, RICHER, BRAVER, OR ALL AROUND BETTER. SUCK IT UP, HOLD ON TIGHT, SAY A PRAYER, MAKE A PLAN &

JUST DO IT.
Health disparity – significant difference in health outcome between populations

Health Equity – attainment of the highest level of health for all people
• requires valuing everyone equally

Social Determinants of Health

The conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.
Economic Stability

- Poverty
- Employment
- Food Security
- Housing Stability
Education

– School Graduation
– Enrollment in Higher Education
– Language and Literacy
– Early Childhood Education and Development
Social and Community Context
- Social Cohesion
- Civic Participation
- Perceptions of Discrimination and Equity
- Incarceration/Institutionalization
Health and Health Care

- Access to Health Care
- Access to Primary Care
- Health Literacy
Neighborhood and Built Environment

- Access to Healthy Foods
  - Quality of Housing
  - Crime and Violence
  - Environmental Conditions
Central Appalachian SDH

Higher
• Rural residences
• Poverty rate
• Unemployment
• Obesity
• Social cohesion

Lower
• Educational attainment
• Physical activity
• Fruits and vege
• Wellness attitude
• Health literacy
Patient-centered care – individualized care by caregivers who acknowledge that patients’ beliefs, behaviors, social and economic challenges, and environment dictate their health outcomes
“Action on the social determinants of health must involve the whole of government, civil society and local communities, business, global fora, and international agencies. Policies and programs must embrace all the key sectors of society, not just the health sector.”

-WHO Commission on Social Determinants of Health, 2008, Geneva
1. Raise Awareness
2. Community Needs Assessment
3. Develop A Strategic Plan
4. Plan, Do, Study, Act (PDSA)
5. Form Partnerships

http://ctb.ku.edu/en
Raise Awareness

1. Create a burning platform
   – “If-thens” work well

2. Create coalitions

3. ID at-risk populations in your community using SDH

4. Tie initiative to your organizational MVV
Community Needs Assessment

1. Gain initial community acceptance
2. Listen; people will convey their needs
3. ID community leaders and champions
4. Root Cause Analysis/Value Hierarchy
Root Cause Analysis

Tool Example - Ask Why 5 Times

5-"Why’s"
Develop Strategic Plan

1. Mission, Vision, Value, Objectives, Action
   – Where are we going and how do we get there?
   – Timeline?

2. Develop organizational structure

3. Cultural competency training for participants/volunteers
   – healthcare team should reflect population being served
Plan, Do, Study, Act

• **P**
  – revisit MVVOA often, change based on D,S

• **D**
  – be hesitant to “do” without a solid plan based on needs assessment;
  – standardize
  – empower community members, teach skills, mentor

• **S**
  – collect deidentified data and revue regularly
  – toolkits available (AHA)

• **A**
  – make adjustments based on data
Form “Win-Win” Partnerships

1. Create a win-win with the population served

2. Create a win-win within your organization

3. Create win-win partnerships in the community (churches, gov’t, schools, insurers, other providers, etc)

4. Create win-win with industry/government via research funding
# Knox County Example

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>Suburban</th>
<th>Urban</th>
<th>State of TN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>29,037</td>
<td>6,325</td>
<td>6,549,352</td>
</tr>
<tr>
<td>Renter (%)</td>
<td>47</td>
<td>79</td>
<td>34</td>
</tr>
<tr>
<td>Median house value</td>
<td>$256,500</td>
<td>$76,500</td>
<td>$140,300</td>
</tr>
<tr>
<td>Population Density (per Sq mile)</td>
<td>1,533</td>
<td>3,375</td>
<td>155</td>
</tr>
<tr>
<td>High school degree</td>
<td>90.20%</td>
<td>81.10%</td>
<td>8440.00%</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>52.10%</td>
<td>13%</td>
<td>23.80%</td>
</tr>
<tr>
<td>Grad/Prof degree</td>
<td>25.30%</td>
<td>5.70%</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>5.30%</td>
<td>17%</td>
<td>6%</td>
</tr>
<tr>
<td>AGI</td>
<td>$154,003</td>
<td>$22,412</td>
<td>$53,767</td>
</tr>
<tr>
<td>Food stamps received (%)</td>
<td>8.9</td>
<td>58.09</td>
<td>20.04</td>
</tr>
<tr>
<td>Residents with income below poverty line</td>
<td>15.90%</td>
<td>55%</td>
<td>17.80%</td>
</tr>
<tr>
<td>Median # rooms in house</td>
<td>7.7</td>
<td>5.3</td>
<td>6.4</td>
</tr>
<tr>
<td>Single parent households</td>
<td>3.9</td>
<td>20.5</td>
<td></td>
</tr>
<tr>
<td>Number of medical specialists</td>
<td>400</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Number of business</td>
<td>171</td>
<td>2</td>
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</table>
# 2014 Knox County Behavioral Risk Factor Survey

(preliminary data from 4,026 adults)

<table>
<thead>
<tr>
<th>Screening</th>
<th>&lt;$15K</th>
<th>＄50K</th>
<th>＜HS</th>
<th>College</th>
<th>White</th>
<th>Black</th>
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</thead>
<tbody>
<tr>
<td>PAP (ever)</td>
<td>83.2</td>
<td>94.2</td>
<td>91.0</td>
<td>93.3</td>
<td>88.5</td>
<td>95.4</td>
</tr>
<tr>
<td>CBE (ever)</td>
<td>86.6</td>
<td>95.8</td>
<td>77.6</td>
<td>94.5</td>
<td>92.2</td>
<td>90.5</td>
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<tr>
<td>PSA (ever)</td>
<td>36.1</td>
<td>65.6</td>
<td>35.2</td>
<td>72.2</td>
<td>58.8</td>
<td>72.6</td>
</tr>
<tr>
<td>C’ scope (ever)</td>
<td>65.6</td>
<td>79.5</td>
<td>56.4</td>
<td>78.9</td>
<td>73.8</td>
<td>70.4</td>
</tr>
</tbody>
</table>

 Courtesy, Mark Prather, Ph.D., Epidemiologist, Knox County Health Dept.
Members of our community don’t trust us...

- Haven’t always been welcome here
- They go to Fort Sanders and Park West for cancer care
- Feel they may be experimented on at a teaching hospital
- Feel invisible when they come to UTMC
- Spend abnormally long times in the ER
What have we done?

• Participated in community education

• Raised awareness and gained buy-in from leadership, colleagues, community

• Prolonged community assessment phase

• Empowered community and fostered interaction
What more can we do?

• Examples:
  – Ag Center – Farmer’s markets in the neighborhoods
  – Ed Department – after school tutoring hours, mentorship programs
  – Cancer Screening– nights/weekends for the working poor
  – Public Health Education via churches, NGO’s
  – Health Literacy Forum on Nov. 9 at UTMC
Conclusions

• Know your calling and look for opportunities to serve

• Don’t go alone (DPH, students, colleagues)

• Each population is unique

• Adapt your/others’ successes

• Create win-win opportunities for all

• Leverage your influence and findings to the community’s advantage
What will be the impact?

- Improved health outcomes
- Improved graduation rates; return of graduates to community
- Improved employment opportunities
- Learning across boundaries – we will learn and grow as much as we intend for this community to learn and grow
- A reproducible approach for other neighborhoods in our region
- The BEST Knoxville (or Kingsport)
We need to avoid a common temptation nowadays: to discard whatever proves troublesome. Let us remember the Golden Rule: “Do unto others as you would have them do unto you.” This Rule points us in a clear direction. Let us treat others with the same passion and compassion with which we want to be treated. Let us seek for others the same possibilities which we seek for ourselves. Let us help others to grow, as we would like to be helped ourselves. In a word, if we want security, let us give security; if we want life, let us give life; if we want opportunities, let us provide opportunities. The yardstick we use for others will be the yardstick which time will use for us.

Pope Francis, addressing Congress, 9/24/15