From Medical Model to Population Health

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Acknowledgements

- My wife and family
- My supervisors
- My colleagues at ECU
- My colleagues in the community
- My students
- My friends
- Myriad of others
Involving Students

- Enlightenment
- Engagement
- Evocation
- E-mersion
- Evaluation
My Transition in Thinking – Medical Model to Population Health

ECU Health Sciences Vision: To improve the health of the population of eastern North Carolina

1999 ENC29 rate is 24% greater than RNC71
2007 ENC29 rate is 39% greater than RNC71

Figure 6.5 i. Diabetes Mellitus: Trends in mortality rates for ENC29, RNC71, and NC, 1999-2007 with projections to 2020
The future health of eastern NC will be determined to a large extent by how effectively we work with rural communities to eliminate health disparities among those rural populations experiencing gaps in disease, disability, and death.
Medical, Behavioral, and Many Other Interventions: No Delivery System

Research (Discovery)

Testing

Roadblocks to Delivery
Focused and enhanced effort in translational research, dissemination and diffusion are needed to achieve improved population benefits.
Translational Research -
A Roadmap to Start
Socio-Ecologic Model

**Society**
- nation, state

**Community**
- county, municipality, coalitions

**Organizational**
- organizations, social institutions

**Interpersonal**
- family, friends, social networks

**Individual**
- knowledge, attitudes, skills

Guiding Principles for Research

Start (and continue) with community coalition
Interventions should be designed for dissemination.

Intervention design is part of an engineering process.
Strategy: Bi-Modal Intervention in Doctor’s Office and Community
Improved Outcomes and Reduced Disparities in Diabetes Care For Rural African Americans

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Design/Setting/Patients: Rural Primary Care

Brody School of Med.
East Carolina Univ.

Design: Prospective care redesign and care management intervention with 3 yr follow-up in three purposively selected rural fee-for-service practices compared to usual care in five randomly selected control practices with similar practice and patient characteristics.

 Patients: n = 727 randomly selected AA Type 2 diabetes; n = 368 intervention site pts; n = 359 control site pts.

Outcome Measures: HbA1c, BP, lipids, at baseline & long-term (3 yr) follow-up
Care Redesign and Circuit Rider Care Managers

**Delivery Redesign & Care Management**
1. Schedule diabetics on specific ½ days
2. **Standing orders** for care management and labs, especially if out of control
3. **Standing orders** for visit frequency & follow-up
4. Coaching/goal setting--primary tool for patient self-management
5. Culturally tailored for literacy/relevance
6. Expanded roles for RN/CDE and PharmD, including prescribing
7. Point of care--delivered during PCP visit
8. Physicians and care managers form a team
## Multivariate General Linear Model

*Decrease in HbA₁c as outcome*

<table>
<thead>
<tr>
<th>Variables in Model</th>
<th>Parameter ± Std Error</th>
<th>Significance of effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.022 ± 0.006</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>0.184 ± 0.138</td>
<td>NS</td>
</tr>
<tr>
<td>Duration of Diabetes</td>
<td>-0.026 ± 0.010</td>
<td>P = 0.009</td>
</tr>
<tr>
<td># visits/yr</td>
<td>0.008 ± 0.029</td>
<td>NS</td>
</tr>
<tr>
<td>Baseline a₁c</td>
<td>0.606 ± 0.030</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Intervention clinic effect</td>
<td></td>
<td>F(1, 6) = 17.97, p = 0.005</td>
</tr>
</tbody>
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The EMPOWER Trial

Empowering Rural African American Women and Communities to Improve Diabetes Outcomes
EMPOWER Team and Territory
EMPOWER: A Small Changes Approach

- We are investigating the effectiveness of a small changes approach to lifestyle change to facilitate long term control.
- Design: RCT in 300 women; 150 intervention and 150 delayed participants.
- Culturally relevant behavioral small change intervention (16 sessions) and social support delivered by trained community health workers.
- Outcomes (6 & 12 mo): HbA1c, BP, weight, dietary patterns, pedometer counts, measures of family/social support, diabetes distress, empowerment, depression, self-care, medication adherence, and life satisfaction.
Biological Outcomes

- Step Counts
- Blood Pressure
- Body Mass Index
- HbA1C
Challenge

- Eastern NC health challenges remain substantial.
- Think big with me about how ECU faculty, students and staff can make a difference in the years to come....
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