IMPROVING DENTAL CARE ACROSS KENTUCKY: THE ROLE OF HEALTH SERVICES RESEARCH

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  • ROB KOVARIK
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  • KELLY DINGRANDO
  • JUDY SKELTON
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  • KEITH WHITE – PADUCAH/BENTON
  • DAVID GRAHAM - MOREHEAD
  • JENNY STIGERS - FULTON
  • HEATHER WITT – BIG SANDY
  • COMMUNITY-BASED FACULTY

• FRANKFORT
  • CABINET OF HEALTH AND FAMILY SERVICES (JULIE MCKEE, JIM CECIL; STATE DENTAL DIRECTORS)
  • STATE MEDICAID OFFICE - KEN RICH (DENTAL), JOHN LANGEFELD (MEDICAL)
“Oral Health is Integral to General Health”

Oral Health in America: A Report by the Surgeon General
Dr. David Satcher, 2000
(1) UK COLLEGE OF DENTISTRY, DENTAL HOSPITAL, & OUTREACH
(2) ORAL HEALTH ACROSS THE LIFESPAN (ORAL-SYSTEMIC DISEASE)
(3) KENTUCKY ORAL HEALTH NETWORK (KOHN)
(4) STATEWIDE ORAL HEALTH SURVEILLANCE
(5) ORAL HEALTH LITERACY (POHEK, ARDEP)
(6) CENTERING PREGNANCY WITH SMILES™
(7) LKLP OUTREACH PROGRAM
(8) MEDICAID EXPANSION: 2014 DENTAL OUTCOMES
  UTILIZATION OF DENTAL SERVICES
  DENTIST PARTICIPATION IN MEDICAID
(9) WORKPLACE WELLNESS
(10) ECONOMICS OF DENTAL PRACTICE
OUTREACH PROGRAMS – APPALACHIA & WESTERN KY

UK North Fork Valley Community Health Center

Hopkins County Health Dept. - Madisonville

Fulton County Schools - Hickman

UK/MSU/St. Claire Medical Center

Marshall County Health Dept. - Benton
Fayette County
Central Kentucky Van
Appalachian Van – Hazard
Western KY Van - Madisonville

OUTREACH PROGRAM – MOBILE DENTAL VANS
“HIDDEN COSTS” OF ORAL INFECTIONS ACROSS THE LIFE SPAN

• **CHILDREN**
  - NORMAL GROWTH & DEVELOPMENT
  - NUTRITION
  - SLEEP
  - PAIN
  - ABILITY TO LEARN
  - MISSED SCHOOL DAYS
  - SELF-IMAGE / APPEARANCE

• **EMPLOYEES**
  - HIGH OUT-OF-POCKET COSTS
  - LOST WORK DAYS
  - CAREGIVING
  - ADVERSE BIRTH OUTCOMES
  - PRESENTEEISM - PRODUCTIVITY
    - IMPACT ON GENERAL HEALTH
    - DIABETES, CVD, STROKE, RESPIRATORY INFECTIONS

• **EMPLOYERS**
  - DIRECT COSTS OF DENTAL BENEFITS/TREATMENT
  - ABSENTEEISM
  - PRESENTEEISM - PRODUCTIVITY
  - RETIREE HEALTH CARE COSTS

• **SENIOR CITIZENS/RETIREES**
  - HIGH OUT-OF-POCKET COSTS
  - LACK OF DENTAL INSURANCE
    - NO OUTPATIENT MEDICARE BENEFITS
  - IMPACT ON GENERAL HEALTH
    - LOST YEARS OF QUALITY OF LIFE AND LIFESPAN
ORAL-SYSTEMIC DISEASES

**Altered Microbiota**
**Increased Pathogenicity**
**Altered Inflammation**

**Translocated Infection**

**Diabetes**
- Endothelium & altered vascular responses
- Atherosclerotic changes
- Coronary Artery Disease (MI)

**CVD**

**Systemic Inflammatory Mediators**

**Alzheimer's Disease**

**PTB/IUGR**
“A Collaborative, Community-Based Oral Health Disparities Initiative”

MISSION: Family Oral and General Health Improvement

To reduce oral health disparities and improve the oral and general health of families in rural Kentucky and other underserved populations of Kentucky.
DENTAL UTILIZATION
Dental Utilization by Medicaid/KCHIP Preschool Children by Region
Medicaid/KCHIP 2006-09 Procedures (0-5 years old)
Kentucky

Fluoride Varnish Kits Provided

- 0
- 1-50
- 51-100
- 101-200
- 201-500
- >500

* One kit/one child
## Statewide Sealant Utilization (2008-09)

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Sealants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid/KCHIP</td>
<td>80471</td>
<td>16.66</td>
</tr>
<tr>
<td>Private</td>
<td>76110</td>
<td>29.20</td>
</tr>
<tr>
<td>Uninsured</td>
<td>18616</td>
<td>18.63</td>
</tr>
<tr>
<td>DK/NR</td>
<td>5333</td>
<td>19.47</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>180530</td>
<td><strong>22.23</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Sealants</th>
<th>Used</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid/KCHIP</td>
<td>80471</td>
<td>13404</td>
<td>16.66</td>
</tr>
<tr>
<td>Private</td>
<td>76110</td>
<td>22224</td>
<td>29.20</td>
</tr>
<tr>
<td>Uninsured</td>
<td>18616</td>
<td>3468</td>
<td>18.63</td>
</tr>
<tr>
<td>DK/NR</td>
<td>5333</td>
<td>1038</td>
<td>19.47</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>180530</td>
<td>40135</td>
<td><strong>22.23</strong></td>
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</tbody>
</table>
Medicaid Utilization by Area Development Districts (2-18 years old)

<table>
<thead>
<tr>
<th></th>
<th>Private Practice</th>
<th>Rural &amp; Primary Care</th>
<th>No Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># Eligible</td>
<td># Utilize</td>
<td>Rate</td>
</tr>
<tr>
<td>State</td>
<td>348723</td>
<td>150794</td>
<td>43.24%</td>
</tr>
</tbody>
</table>
## Dental Utilization

<table>
<thead>
<tr>
<th></th>
<th>Kentucky</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0-20</td>
<td></td>
<td>46%</td>
<td>46%</td>
</tr>
<tr>
<td>Ages 21+</td>
<td></td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>34%</td>
<td>31%</td>
</tr>
</tbody>
</table>

## No Dental Visit

<table>
<thead>
<tr>
<th></th>
<th>Kentucky</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0-20</td>
<td></td>
<td>308,262</td>
<td>334,896</td>
</tr>
<tr>
<td>Ages 21+</td>
<td></td>
<td>353,411</td>
<td>652,081</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>661,673</td>
<td>986,977</td>
</tr>
</tbody>
</table>
SUCCESES OF A CHILDREN’S DENTAL OUTREACH PROGRAM IN RURAL APPALACHIA – SEVEN YEARS OF PREVENTION

UNIVERSITY OF KENTUCKY
NORTH FORK VALLEY COMMUNITY HEALTH CENTER (FQHC)
HAZARD, PERRY COUNTY, KENTUCKY
DENTAL DIRECTOR: NIKKI STONE, DMD
DARIA.STONE@UKY.EDU (606) 439-3557
LINKING AT RISK POPULATIONS TO EDUCATION, PREVENTION, AND TREATMENT
SYSTEMIC SCREENING AND ASSESSMENT OF WORKFORCE INNOVATIONS IN THE PROVISION OF PREVENTIVE ORAL HEALTH SERVICES

2013 ROBERT WOOD JOHNSON FOUNDATION (RWJF) REPORT

“25 INNOVATIVE NATIONAL MODELS SELECTED”
Over 2,400 children are seen every year at 40 different sites in area Head Start centers and elementary schools.
BASELINE DATA

• UNTREATED TOOTH DECAY RATES
  • SIGNIFICANTLY HIGHER THAN STATE RATES
  • SIGNIFICANTLY HIGHER THAN NATIONAL AVERAGES
  • COMPARED TO NATIONAL ETHNIC DATA, RURAL APPALACHIAN CHILDREN HAVE THE SECOND HIGHEST RATES OF UNTREATED TOOTH DECAY IN THE USA

• URGENT DENTAL NEEDS
  • DEFINED AS PAIN, INFECTION/ABSCESS, RAMPANT DECAY
  • SIGNIFICANTLY HIGHER THAN STATE RATES
The two schools with LOWEST decay rates have the HIGHEST test scores.
SUCCESSFUL PARTNERSHIP
TO PROVIDE SPECIALTY CARE TO CHILDREN WITH URGENT DENTAL NEEDS

2007-08

Follow-up Care

Only 8% completed care

One year later

Follow-up Care

64% completed care

56% increase!

Green=COMPLETED CARE
Yellow=PARTIALLY COMPLETED CARE
Red=NO CARE AT ALL
## PROGRESS TOWARD A SET TARGET

<table>
<thead>
<tr>
<th>Age 2-4 (Head Start/Preschool)</th>
<th>Age 6-8 (Elementary School)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce the proportion of very young children with untreated dental decay in their primary teeth.</td>
<td>Reduce the proportion of young children with untreated dental decay in primary and permanent teeth.</td>
</tr>
<tr>
<td><strong>USA TARGET:</strong> 9%</td>
<td><strong>USA TARGET:</strong> 21%</td>
</tr>
<tr>
<td><strong>BASELINE east KY in 2007:</strong> 58%</td>
<td><strong>BASELINE east KY in 2007:</strong> 68%</td>
</tr>
</tbody>
</table>
| **CURRENT east KY in 2012:** 42%  
**Decreased by 28%!** | **CURRENT east KY in 2012:** 55%  
**Decreased by 19%!** |
| **URGENT dental needs in 2007:** 19% | **URGENT dental needs in 2007:** 22% |
| **URGENT dental needs in 2012:** 9%  
**Decreased by 53%!** | **URGENT dental needs in 2012:** 14%  
**Decreased by 36%!** |
SUCCESSFUL PARTNERSHIP

• A four-way PARTNERSHIP was formed between a local pediatric dentist, the four-county Head Start program, UK dental outreach program, and the local hospital to provide dental care to very young children with extremely urgent dental needs (in the operating room).

• Case management and locally accessible specialty care have improved the rates of treatment completion in these very young children with urgent dental needs from a baseline of only 8% to over 60% after the partnership was formed!

PREVENTION + PARTNERSHIPS = LESS PAIN
CENTERING PREGNANCY SMILES™: A NEW PRENATAL CARE MODEL
WHAT IS CENTERING PREGNANCY SMILES™?

- Bringing women out of exam rooms into group care

- Model of empowerment
  - Empowering women to take control of their bodies, their pregnancies, and their families, and empowerment to health care providers to share their care-giving with their clients.
Current model of oral care has not been effective in rural populations.

30% of Mothers had Tooth Abscesses
80% had inflamed gums
RESULTS

- Designed to create an integrated oral/medical health education and an intervention model
- Demonstration that oral health care/education can be assimilated into the Centering Pregnancy™ prenatal care model
BIRTH OUTCOMES: PRETERM BIRTHS (SINGLETON ONLY)

USA 2004: 10.8%
KY 2004: 12.6%
HC 2004: 14.0%
CP 2006-08: 6.6%
Non-compliant: 14.1%
Compliant: 3.9%

N=379
N=99
N=280

p<0.002
p<0.001
RESULTS

- Multiple other behavioral modifications
  - Increase in breast-feeding (20% → 80%)
  - Increase in smoking cessation
  - Less ER calls/visits late in gestation
  - Women more involved in their gestation and delivery
  - Reduced use of pain medications during delivery
MEDICAID DENTAL EXPANSION
# Medicaid Expansion, Enrollment Increases, All Ages, 2013-2014

<table>
<thead>
<tr>
<th>Region</th>
<th>2013</th>
<th>2014</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appalachian</td>
<td>387,760</td>
<td>537,670</td>
<td>+ 38.66%</td>
</tr>
<tr>
<td>Central Triangle</td>
<td>353,747</td>
<td>525,492</td>
<td>+ 48.55%</td>
</tr>
<tr>
<td>West/West Central</td>
<td>156,651</td>
<td>222,874</td>
<td>+ 42.27%</td>
</tr>
<tr>
<td>Mississippi Delta</td>
<td>107,823</td>
<td>153,117</td>
<td>+ 42.01%</td>
</tr>
<tr>
<td><strong>State Totals</strong></td>
<td>1,005,981</td>
<td>1,439,153</td>
<td>+ 43.06%</td>
</tr>
</tbody>
</table>

433,173 more Kentuckians with Medicaid benefits
### MEDICAD EXPANSION, ENROLLMENT INCREASES, ADULTS 21 AND OVER

<table>
<thead>
<tr>
<th>REGION</th>
<th>2013</th>
<th>2014</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPALACHIAN</td>
<td>191,327</td>
<td>328,255</td>
<td>+ 71.57%</td>
</tr>
<tr>
<td>CENTRAL TRIANGLE</td>
<td>131,087</td>
<td>280,957</td>
<td>+ 114.33%</td>
</tr>
<tr>
<td>WEST/WEST CENTRAL</td>
<td>63,618</td>
<td>121,477</td>
<td>+ 90.95%</td>
</tr>
<tr>
<td>MISSISSIPPI DELTA</td>
<td>45,395</td>
<td>85,319</td>
<td>+ 87.95%</td>
</tr>
<tr>
<td>STATE TOTALS</td>
<td>431,427</td>
<td>816,008</td>
<td>+ 89.14%</td>
</tr>
</tbody>
</table>

**INCREASE OF 384,582 KENTUCKIANS WITH MEDICAID, AGED 21 AND OVER**
### PATIENT DENTAL SERVICE OUTCOMES: MEDICAID EXPANSION

**PATIENTS RECEIVING DENTAL SERVICES**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2013</th>
<th>2014</th>
<th>Change</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0 – 20</td>
<td>266,292</td>
<td>288,249</td>
<td>21,957</td>
<td>+8%</td>
</tr>
<tr>
<td>Ages &gt;21</td>
<td>78,016</td>
<td>163,928</td>
<td>85,912</td>
<td>+110%</td>
</tr>
<tr>
<td>Total</td>
<td>344,308</td>
<td>452,177</td>
<td>107,869</td>
<td>+31%</td>
</tr>
</tbody>
</table>
## TOTAL PATIENT VISITS TO DENTISTS

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>CHANGE</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KENTUCKY</td>
<td>677,058</td>
<td>889,246</td>
<td>212,188</td>
<td>+ 31%</td>
</tr>
</tbody>
</table>

## TOTAL PAID DENTAL CLAIMS TO DENTISTS

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>CHANGE</th>
<th>%CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KENTUCKY</td>
<td>$105,204,320</td>
<td>$134,326,172</td>
<td>+$29,121,852</td>
<td>+28%</td>
</tr>
</tbody>
</table>
VERY POSITIVE OUTCOMES AFTER YEAR ONE!

SUBSTANTIAL INCREASES

✓ PATIENTS RECEIVING DENTAL SERVICES
✓ PATIENT VISITS
✓ PAID DENTAL CLAIMS
DENTIST PARTICIPATION
Number of Dentists (2006)

2350 PRACTICING DENTISTS

FUTURE ESTIMATES

• A LOSS OF 286 DENTISTS BY 2016
• DISTRIBUTION PROBLEMS WILL GET WORSE
Dentist-to-Population Ratios, 2010

KY POPULATION: 4,339,367 (2010 CENSUS)

DENTIST TO POPULATION RATIOS (PER 10,000 POPULATION)

UNITED STATES: 6.0
KENTUCKY: 5.4

EASTERN KENTUCKY: 3.7 WESTERN KENTUCKY: 3.9 LOUISVILLE: 7.9
CENTRAL KENTUCKY: 7.3 NORTHERN KENTUCKY: 4.5
### Age Profile: Dentists in Kentucky, 2010

#### 2348 Practicing Dentists

<table>
<thead>
<tr>
<th>Regions</th>
<th>Total Dentists</th>
<th>Age ≥55</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Kentucky</td>
<td>378</td>
<td>163</td>
<td>44%</td>
</tr>
<tr>
<td>Central Kentucky</td>
<td>589</td>
<td>217</td>
<td>37%</td>
</tr>
<tr>
<td>Northern Kentucky</td>
<td>221</td>
<td>85</td>
<td>38%</td>
</tr>
<tr>
<td>Louisville Region</td>
<td>737</td>
<td>301</td>
<td>41%</td>
</tr>
<tr>
<td>Eastern Kentucky</td>
<td>423</td>
<td>169</td>
<td>40%</td>
</tr>
</tbody>
</table>

- 934 (40% are age ≥55)

#### 403 Practicing Dental Specialists

<table>
<thead>
<tr>
<th>Dental Specialists</th>
<th>Age ≥50</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>29</td>
<td>51%</td>
</tr>
<tr>
<td>112</td>
<td>60</td>
<td>54%</td>
</tr>
<tr>
<td>36</td>
<td>23</td>
<td>64%</td>
</tr>
<tr>
<td>146</td>
<td>86</td>
<td>59%</td>
</tr>
<tr>
<td>52</td>
<td>24</td>
<td>46%</td>
</tr>
</tbody>
</table>

- 222 (55% are age ≥50)
## 2014 Dentist Participation in Kentucky Medicaid Program

<table>
<thead>
<tr>
<th>DENTISTS</th>
<th>STATE TOTALS*</th>
<th>MEDICAID PARTICIPATION</th>
<th>PAID ANNUAL CLAIMS &lt;$50,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL DENTISTS</td>
<td>1,990</td>
<td>790</td>
<td>456</td>
</tr>
<tr>
<td>ORAL SURGEONS</td>
<td>117</td>
<td>59</td>
<td>44</td>
</tr>
<tr>
<td>PEDIATRIC DENTISTS</td>
<td>109</td>
<td>92</td>
<td>72</td>
</tr>
<tr>
<td>ORTHODONTICS</td>
<td>157</td>
<td>63</td>
<td>36</td>
</tr>
<tr>
<td>OTHER DENTAL SPECIALIST</td>
<td>127</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL DENTISTS</td>
<td>2,500</td>
<td>1,018</td>
<td>609 (24%)</td>
</tr>
</tbody>
</table>

*2015 – KY BOARD OF DENTISTRY
SUMMARY

Administrative Complexity
- Multiple MCO’s/Different Policies
- Audits, Recoupments
- Pre-Authorization Requirements
- Delays in Getting Medicaid Numbers

Reimbursements Levels

No Show Rates for Medicaid Patients

Adult Benefit Structure
- Dentures Not Covered
- Root Canals Not Covered
- Periodontal Service Restrictions
- Adult Appointment Restrictions
IMPROVEMENT OF ORAL HEALTH PARADIGM

Need

Demand

Supply
Primary Medical & Behavioral Care

Dental Practice

Public Health

Dental Health Services Research

Courtesy M.R. Mullins
“WE CAN ACHIEVE TOP TWENTY STATUS AS A RESEARCH UNIVERSITY – BUT WE WILL FAIL IF WE DO NOT MAKE A DIFFERENCE IN THE LIVES OF PEOPLE IN KENTUCKY BY ADDRESSING ITS MOST PRESSING PROBLEMS.”

LEE T. TODD
UK PRESIDENT
IF WE KEEP DOING THE SAME THINGS!
“THE FUTURE FACE OF KENTUCKY”
Thanks!

& QUESTIONS?