State of Public Health
WEST VIRGINIA

Rahul Gupta, MD, MPH, FACP
Commissioner and
State Health Officer
Public Health Impact Task Force Meeting
Charleston, West Virginia
April 29, 2015
## Public Health Eras in America

<table>
<thead>
<tr>
<th>Period</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 1850</td>
<td>Battling Epidemics</td>
</tr>
<tr>
<td>1850-1949</td>
<td>Building State and Local Public Health Infrastructure</td>
</tr>
<tr>
<td>1950-1999</td>
<td>Filling Gaps in Medical Care Delivery</td>
</tr>
<tr>
<td>After 1999</td>
<td>Preparing for and Responding to Community Health Threats</td>
</tr>
<tr>
<td>2010 onwards</td>
<td>Chronic Disease Management</td>
</tr>
</tbody>
</table>
Unique Features of Public Health

“Science and Social Values”

- Social Justice Perspective
- Inherently Political
- Evolving Expectations = Expanding Agenda
- Link with Government
- Grounding in Science
- Focus on Prevention
- Uncommon Culture
U.S. Life Expectancy at Birth – Selected Years

Source: www.healthypeople.gov
Leading Causes of Death

## WV Risk Factor Indicators

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>WV Prevalence</th>
<th>Rank</th>
<th>U.S. Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Smoking</td>
<td>27.3%</td>
<td>1</td>
<td>18.1%</td>
</tr>
<tr>
<td>Smokeless Tobacco Use</td>
<td>9.4%</td>
<td>1</td>
<td>3.7%</td>
</tr>
<tr>
<td>Fair/Poor Health Status</td>
<td>25.7%</td>
<td>2</td>
<td>18.2%</td>
</tr>
<tr>
<td>Lack of Physical Activity</td>
<td>31.4%</td>
<td>9</td>
<td>26.6%</td>
</tr>
</tbody>
</table>

Data Source: WV Health Statistics Center, Behavioral Risk Factor Surveillance System, 2013

West Virginia ranks among the bottom in America’s Health Rankings
## WV Morbidity Indicators

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>WV Prevalence</th>
<th>Rank</th>
<th>U.S. Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis</td>
<td>36.2%</td>
<td>1</td>
<td>25.0%</td>
</tr>
<tr>
<td>Disability</td>
<td>27.6%</td>
<td>1</td>
<td>19.8%</td>
</tr>
<tr>
<td>Cardiovascular Disease</td>
<td>13.7%</td>
<td>1</td>
<td>8.6%</td>
</tr>
<tr>
<td>Obesity</td>
<td>35.1%</td>
<td>1</td>
<td>28.3%</td>
</tr>
<tr>
<td>COPD</td>
<td>10.6%</td>
<td>2</td>
<td>6.4%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>41.0%</td>
<td>2</td>
<td>32.5%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>13.0%</td>
<td>4</td>
<td>10.3%</td>
</tr>
<tr>
<td>Kidney Disease</td>
<td>3.3%</td>
<td>7</td>
<td>2.6%</td>
</tr>
<tr>
<td>Depression</td>
<td>22.0%</td>
<td>9</td>
<td>17.7%</td>
</tr>
<tr>
<td>Cancer</td>
<td>13.0%</td>
<td>10</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

Data Source: WV Health Statistics Center, Behavioral Risk Factor Surveillance System, 2013

**In 2013, WV ranked 46 (Overall)**
# WV Mortality Indicators

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>WV Rate</th>
<th>Rank</th>
<th>U.S. Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents</td>
<td>70.7</td>
<td>1</td>
<td>38.8</td>
</tr>
<tr>
<td>Diabetes</td>
<td>34.1</td>
<td>1</td>
<td>21.2</td>
</tr>
<tr>
<td>Drug Induced</td>
<td>32.9</td>
<td>1</td>
<td>14.6</td>
</tr>
<tr>
<td>CLRD</td>
<td>64.5</td>
<td>2</td>
<td>42.1</td>
</tr>
<tr>
<td>All Causes</td>
<td>923.8</td>
<td>3</td>
<td>731.9</td>
</tr>
<tr>
<td>Cancer</td>
<td>190.8</td>
<td>3</td>
<td>163.2</td>
</tr>
</tbody>
</table>

Rates are Age-Adjusted per 100,000 Population
1. Median age 41.3 years
   • 3rd highest in nation based on 2010 census data

2. Medicaid: 510,675* persons or 28% of the population

3. 18% report being disabled
   • Compared to 12% of the U.S. population

*Medicaid data as of (4/25/15)
4. Lowest in nation: Bachelor’s degree or higher (18.9%)*

5. Third lowest in nation: Median household income ($41,253)

6. Tenth highest: Percentage below poverty level (18.5%)

College Retention Rates, 2010

Retention Rates - First-Time College Freshmen Returning Their Second Year: Four-Year Total - 2010


WV 3rd Lowest Rate 68.3%
CA Highest Rate 84.0%

AK 63.3
SD 68.2
WV 68.3
MT 68.4
ID 68.5
OK 69.1
AR 69.9
AZ 70.0
NM 70.5
KY 71.8
AL 72.1
KS 72.7

Source: NCES, IPEDS Fall 2010 Enrollment Retention Rate File
Poor health is related to inequality in U.S. States, 1999

Source: Author’s analysis of 1999 Census Bureau Gini Coefficient Calculations and 1999 CDC Data on Health Status from the Behavioral Risk Factor Surveillance System.

Source: Equal Health Network
Comparison of Daily Smoking Rates Nationwide and in West Virginia

- Nationwide smoking rate decreased from 20% to approximately 12.3%

- In contrast to the nationwide smoking rate, WV’s daily smoking rate has remained elevated

Daily Smoking Rates

Comparison of Daily Smoking Rates in West Virginia to Select States

- West Virginia’s trend was not consistent with the other five states
- Five States, minus West Virginia decreased their daily smoking rates by 2010
- Kentucky, Ohio, and Tennessee all had daily smoking rates drop to under 20% by 2010
- Pennsylvania and Virginia experienced even greater results, with their daily smoking rates dropping under 15% by 2010

Birth Outcomes

- 25.6% of mothers smoked during pregnancy in WV in 2013 compared to 8.9% of mothers in the U.S.
- 9.4% of births were low birthweight in 2013 in WV compared to 8.0% of births that were low birthweight in the U.S.

Data Source: WV Health Statistics Center, Behavioral Risk Factor Surveillance System, 2013
The infant mortality rate in West Virginia in 2013 was 7.6 infant deaths per 1,000 live births compared to the U.S. infant mortality rate which was 6.0 per 1,000 live births.

Data Source: WV Health Statistics Center, Behavioral Risk Factor Surveillance System, 2013
Deaths from Drug Overdoses Have Increased Dramatically

2010 Rank: Highest
2010 Mortality Rate (per 100,000): 28.9
1999 Mortality Rate (per 100,000): 4.1
Rate Change 1999-2010: increased by 605 percent

Source: Prescription Drug Abuse: Strategies to Stop the Epidemic, Trust For America’s Health, 2013
• WV rate increased by six-fold since 1999

Source: Prescription Drug Abuse: Strategies to Stop the Epidemic, Trust For America’s Health, 2013
BPH-Funded Study
Conducted in August 2009

Results: Cord Blood Confirmed 19% of Babies Born in WV had at least one substance in their system.

(Drug or Alcohol)
<table>
<thead>
<tr>
<th>Obesity Grade</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men (total)</strong></td>
<td>$1,143</td>
<td>$2,491</td>
<td>$6,078</td>
</tr>
<tr>
<td>Medical</td>
<td>$475</td>
<td>$824</td>
<td>$1,269</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>$277</td>
<td>$657</td>
<td>$1,026</td>
</tr>
<tr>
<td><strong>Presenteeism</strong></td>
<td>$391</td>
<td>$1,010</td>
<td>$3,792</td>
</tr>
<tr>
<td><strong>Women (total)</strong></td>
<td>$2,524</td>
<td>$4,112</td>
<td>$6,694</td>
</tr>
<tr>
<td>Medical</td>
<td>$1,274</td>
<td>$2,532</td>
<td>$2,395</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>$407</td>
<td>$67</td>
<td>$1,262</td>
</tr>
<tr>
<td><strong>Presenteeism</strong></td>
<td>$843</td>
<td>$1,513</td>
<td>$3,037</td>
</tr>
</tbody>
</table>

## Costs of Obesity 1998-2008

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Costs</td>
<td>$78 B/y</td>
<td>$147 B/y</td>
</tr>
<tr>
<td>Medical Costs</td>
<td>6.5%</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

Source: Finkelstein et al. Health Affairs 2009; 28:w822
Obesity Trends

Source: Behavioral Risk Factor Surveillance System
Determinants of Health

Source: countyhealthrankings.com
Related Measures
Smoking

Related Measures
Explore the relations between ranking measures

Closely Related Measures
Related Measures

Click on any measure to see its related measures

Source: www.americashealthrankings.org/ALL/Smoking
Health Connections

Related Measures
Explore the relations between ranking measures

Closely Related Measures
Related Measures

Diabetes

Source: www.americashealthrankings.org/ALL/Diabetes
Health Connections

Cancer

Related Measures
Cancer Deaths

Explore the relations between ranking measures

Closely Related Measures
Related Measures

Cancer Deaths

http://www.americashealthrankings.org/ALL/CancerDeaths
Related Measures
Cardiovascular Deaths

Explore the relations between ranking measures

Closely Related Measures

Related Measures

http://www.americashealthrankings.org/ALL/CVDDeaths

Heart Disease
Why We Are Here Today

Call to Action:
Charge and Purpose of the Task Force

- Redefining the mission of Public Health in West Virginia for the 21st Century
No Secret!
What we have done in the past has not worked.
1880’s

- State Board of Health was created
- Local boards of health were to make and establish sanitary regulations and enforce rules and regulations of State Board of Health

Early 1900’s

- State Department of Health was created and led by the Commissioner
- County health officer authorized and led the County Board of Health
Historical Perspective: Legal Framework

2000

- Defined powers and duties of board to include environmental health, communicable and reportable disease prevention and control and community health promotion
Vision of DHHR Cabinet Secretary Karen L. Bowling

Better Health

• Achieve better health outcomes, lower health care costs and better health of our citizens

Better Quality

• Continue to reduce the uninsured rate in WV
• Work with our partners to integrate physical and behavioral health into a single care model and expand the managed care program
• Streamline waiver programs to be more efficient and beneficial to West Virginians

Lower Cost

• Exploring a variety of short and long term strategies to lower the cost of health
“Funding” Picture

Health Care
- Medicare
- Medicaid and Children's Health Insurance
- Other health care
- Health research & food safety

National Defense
- Ongoing operations, equipment and supplies
- Other national defense

Income Security
- Other income security
- Food and nutrition assistance
- Unemployment compensation
- Housing assistance
- Earned income and child tax credits

Social Security
- Social Security

Net Interest
- Net interest

Other Government Programs
- Other government programs
- Education and Job Training
- International Affairs
- Development
- Other international affairs
- Seca
- Natural Resources
- Technology Programs
- NASA
- Other science research
- Transportation
- Veteran's benefits
- Income and housing support
- Health care
- Other veterans
- Highways, mass transit, and other ground transportation
- Other transportation and infrastructure
- Immigration & Law Enforcement
- Immigration and other federal law enforcement
- Other science research
- Natural resources
- Transportation
- Veteran's benefits

Military Personnel
- Earned income and child tax credits
- Housing assistance
- Unemployment compensation
- Food and nutrition assistance
- Other income security

Other national defense
- Ongoing operations, equipment and supplies
- Other health care
- Health research & food safety

Other government programs
- Education and Job Training
- International Affairs
- Development
- Other international affairs
- Seca
- Natural Resources
- Technology Programs
- NASA
- Other science research
- Transportation
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- Income and housing support
- Health care
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- Immigration and other federal law enforcement
- Other science research
- Natural resources
- Transportation
- Veteran's benefits

34
Public Health Funding

Related Measures
Explore the relations between ranking measures

Closely Related Measures
Related Measures

Public Health Funding

http://www.americashealthrankings.org/ALL/PH_Spending
IOM Report found that the current funding system does not promote integration:

- Grants from HRSA and CDC aimed to address same issues
- Competing funding streams has created silos at the local level
- Inflexibility of funds limits local entity activities

As a result, CDC and HRSA have strategically shifted funding to support integration and alignment

Source: [www.iom.edu/primarycarepublichealth](http://www.iom.edu/primarycarepublichealth)
Federal Funding (CDC) 2010-2014

CDC Affordable Care Act Dollars To West Virginia Over Time

<table>
<thead>
<tr>
<th>Year</th>
<th>Dollars Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFY 2010</td>
<td>$1,355,811</td>
</tr>
<tr>
<td>FFY 2011</td>
<td>$5,922,483</td>
</tr>
<tr>
<td>FFY 2012</td>
<td>$3,393,536</td>
</tr>
<tr>
<td>FFY 2013</td>
<td>$3,201,487</td>
</tr>
<tr>
<td>FFY 2014</td>
<td>$1,192,126</td>
</tr>
</tbody>
</table>
Federal Program Funding (CDC) 2010-2014

CDC Chronic Disease and Health Promotion Program Funding in West Virginia

- FFY 2010: $10,208,350
- FFY 2011: $12,181,139
- FFY 2012: $11,757,855
- FFY 2013: $9,890,547
- FFY 2014: $8,324,291

Dollars Granted
BPH Total Sub-Grants By State Fiscal Year

- SFY 2012: 608 ($60.7 million)
- SFY 2013: 590 ($58.2 million)
- SFY 2014: 467 ($51.7 million)
- SFY 2015: 421 ($54 million)
Number of BPH Sub-Grants

BPH Sub-Grant Funding Trends
(Number of Sub-Grants)
State Innovation Models (SIM)

- Initiative to develop and test of state-led, multi-payer health care payment and service delivery models that will:
  - improve health system performance
  - increase quality of care
  - decrease costs for Medicare, Medicaid and Children’s Health Insurance Program (CHIP) beneficiaries

- Medicare - Shift from fees for services to value based payment model

- Key preventive services now covered without cost sharing
Uninsured Vs. Insured in West Virginia

WV Insured vs. Uninsured

2013

- Insured: 83%
- Uninsured: 17%

2014

- Insured: 93.4%
- Uninsured: 6.6%
Value Based Care

• Shared savings model (ACOs, IT systems)
• Measuring performance and data analytics
• 30-day readmissions, community needs assessment, infection reporting, choosing wisely, others
• Value-based environment is based in streamlining operations and eliminating waste
“Risk Shifting”

Payment system reform will require providers to bear greater population-based financial risk

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee for Service</td>
<td>Capitation</td>
</tr>
<tr>
<td>Pay for Coordination</td>
<td>Shared Savings</td>
</tr>
<tr>
<td>Pay for Performance</td>
<td>Episodic Payments</td>
</tr>
<tr>
<td>Episodic Payments</td>
<td>Shared Savings</td>
</tr>
<tr>
<td>Shared Savings</td>
<td>Capitation</td>
</tr>
</tbody>
</table>

- **Fee for Service**: Paid based on volume of services and not linked to quality or efficiency; No constraint on spending
- **Pay for Coordination**: Added per capita payment based on ability to effectively manage the care of population
- **Pay for Performance**: Payments linked to objective measures of performance
- **Episodic Payments**: Payment based on financial and performance accountability for episodes of care
  - Bundled Payment
- **Shared Savings**: Shared savings from better care coordination and disease management
  - ACOs
- **Capitation**: Providers share savings from better care coordination and disease management
  - Per Member/Per Month
The goal of the national accreditation program is to improve and protect the health of the public by advancing the quality and performance of state and local public health departments.

- Document capacity of the health department to deliver the core functions and ten Essential Public Health Services
- Stimulate transparency
- Improve management processes used by the health department

Source: [http://www.phaboard.org/](http://www.phaboard.org/)
• Stimulate quality improvement and performance management

• Improve accountability to community, stakeholders, and policy makers

• Improve communications

• Improve competitiveness for funding
Requires Increasing Efficiency and Effectiveness

- 30% increase in community engagement
- 40% reduction in time it takes to complete a septic and well inspection
- 13% reduction in client wait time in Family Planning clinic
- 45% decrease in no-show rates in HIV clinic
- 49% increase in # of department policies and procedures reviewed and updated in last 3 years
- 100% of rabies reports completed within 3 days

Source: National Association of County and City Health Officials (NACCHO)
• The preparedness and response capabilities of communities served by accredited Local Health Departments (LHDs) exceed those of non-accredited LHDs.

• Accreditation improves the infrastructure of the health department, which has a positive impact on emergency preparedness activities.

Source: John Wayne PhD, MBA, November 6, 2009 - APHA Annual Meeting
• The social determinants of health are the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness.

• These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.

Change
We Must Change the Mindset
"Influencers" of Health

Source: Dahlgren and Whitehead, 1991
What Determines Health?

Determinants of Health

Policies and Interventions

Physical Environment

Behavior

Biology

Social Environment

Individual

Access to Quality Health Care

Source: www.healthypeople.gov
Assuring the Conditions for Population Health

- Communities
- Healthcare Delivery System
- Employers and Business
- The Media
- Academia
- Government Public Health Infrastructure

Health Impact Pyramid

- Counseling & Education
  - Ongoing interventions: personalized HRA, health information, education, counseling and support
  - Lifestyle interventions connecting personal health services with community-based services: obesity, smoking, YMCA-DPP, etc.

- Clinical Interventions
  - Ongoing interventions: CVD prevention has greatest impact, A1C testing and reporting
  - Medication adherence and personalized behavioral interventions
  - Care coordination, particularly multiple chronic comorbidities

- Long-Lasting Protective Interventions
  - One-time or infrequent interventions: immunizations, colonoscopy
  - Smoking cessation

- Changing Context To Make Individuals’ Default Decisions Healthy
  - Healthy air, water, food
  - Salt iodization
  - Water fluoridation
  - Essential HI benefits packages: high value services

- Socioeconomic Factors
  - Poverty reduction
  - Improved education
  - Health insurance/access to care

Experiencing “Health Culture Shifts”

✓ Moving from sick care to preventive care
✓ Changing ED visits to community medical homes

This Means:

• Wellness Visits
• More Counseling
• More Screenings
• Population Health in 21st Century

1. Traditional Preventive/Clinical Services
2. Innovative Patient-Centered Care; Community Care Coordination
3. Health in All Policies

Source for buckets concept: Auerbach J, CDC, Population Health and the State Innovation Model Grants presentation, NGA meeting, April 2015
Preventive/Clinical Services

- More people have access to Preventive Care services
  - Aspirin Therapy
  - Blood Pressure Control
  - Cholesterol Management
  - Smoking Cessation
  - Healthy Eating
  - Physical Activity

Source: MMWR. 2011;60:1248-51
Preventive Services = New Expectations

- Beyond Immunization, are we providing these services?
- How often are we providing these services?
- Do we have enough staff to provide these services?
- How much funding are we setting aside for this area?
- How are we measuring success in this area?
- Are we billing at market rate?

Public Health has to move away from the “We don’t do that here” approach to stay complementary while generating revenue.
Community Care Coordination

- Meet needs of the individuals at home and in community
- Link clinical and communitywide measures and partners
- Community level clinical interventions
- Community level social and behavioral interventions
- Care transitions and environmental interventions
Community Care Approaches

• Links health systems and communities

• Facilitates access to and improve quality and cultural competence of medical care

• Builds individual and community capacity for health by:
  ✓ Increasing health knowledge and self-sufficiency of the patients
  ✓ Serving as community health educators
  ✓ Providing social support
  ✓ Advocating for the health care needs of patients and communities
Expectations Exist and More Coming

• Grants are becoming more competitive

• Competitive Grants and sub-recipient agreements may require Community Care Coordination components

• Evaluation may require Community Care Coordination as using “Best Practices” models
• Policies that encourage healthy behaviors and healthy lifestyles

• Consider community and state level policies

• Remember that 80% of health factors are NOT related to clinical services
Using Asthma Example

**Bucket 1** – Diagnosis, action plan, medications, clinical guidance

**Bucket 2** – Community health worker does home visit; assesses triggers, counsels patient; offers limited remediation

**Bucket 3** – Community standards on housing; limits to indoor and outdoor pollutants; reductions in smoking rates
Implications for Public Health

**Challenges**

- Shrinking funds to support traditional approaches
- Population health risk shifting from office to community
- Quality measures move from process-based to outcome-based
- Reimbursement shifts from volume to value
- Expectation to achieve accreditation
- Public health and medical care integration required
- Weaknesses inherent to public health

**Opportunities**

- Increase in insured population/demand
- Payment for disease management
- Payment for care coordination
- Improve operational efficiencies
- Align stakeholder interests and incentivize them the right way
- Embrace a culture of health by investing in social determinants
- Develop innovative public health system to improve outcomes
- Align with National Prevention Strategy
Population Health Approaches

The Goal

1. Improve Health
   - Improve Quality
     - Value-Based Care
   - Data Systems and Analytics
   - Traditional Clinical Approaches
   - Innovative Patient-Centered Care in Community
   - Health In All Policies Approach

2. Prerequisite: Supportive and enabling public health system
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Commissioner and State Health Officer  
Bureau for Public Health  

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