POPULATION HEALTH

Dr. Samuel Breeding, Chief Medical Officer of Holston Medical Group
Disclosure Statement of Financial Interest

- I, Samuel Breeding M.D.,
  DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.
Population Health

One Patient at a Time
Healthiest U.S. City: Lincoln, Nebraska

CDC: At the Bottom of the List is Huntington, W.V., Deemed Least Healthy U.S. City

By Daniel J. DeNoon
WebMD Health News

Nov. 17, 2008 - Lincoln, Neb. is the healthiest city in the U.S., and Huntington, W.V. is the least healthy, 2007 CDC data reveal. The CDC’s city-by-city report is based on annual health surveys. Residents were asked to rate their health as excellent, very good, good, fair, or poor.

Topping the list was Lincoln, Neb., where 92.8% of residents say their health is good or better and only 7.2% report fair or poor health.

At the bottom of the list is Huntington, W.V., where only 68.8% of residents say they enjoy good or better health, and a whopping 31.2% report only fair or poor health.

Some news reports have put Burlington, Vt., at the top spot. Those reports are based on 2006 CDC data. In the most recent available data, from 2007, Burlington ranks fourth behind Lincoln, Fargo, N.D., and Boulder Colo., according to the CDC’s Selected Metropolitan/Micropolitan Area Risk Trends (SMART) database.

Healthiest Cities:

1. Lincoln, NE Metropolitan Statistical Area
2. Fargo, ND-MN Metropolitan Statistical Area
3. Boulder, CO Metropolitan Statistical Area
4. Burlington-South Burlington, VT Metropolitan Statistical Area
5. Ogden-Clearfield, UT Metropolitan Statistical Area
6. Provo-Orem, UT Metropolitan Statistical Area
7. Concord, NH Micropolitan Statistical Area
8. Sioux Falls, SD Metropolitan Statistical Area
9. Barre, VT Micropolitan Statistical Area
10. Cambridge-Newton-Framingham, MA Metropolitan Division
11. Kingsport-Bristol, TN-VA Metropolitan Statistical Area
12. Fort Smith, AR-OK Metropolitan Statistical Area
13. Chattanooga, TN-GA Metropolitan Statistical Area
14. El Paso, TX Metropolitan Statistical Area
15. Okeechobee, FL Micropolitan Statistical Area
16. Brownsville-Harlingen, TX Metropolitan Statistical Area
17. Mobile, AL Metropolitan Statistical Area
18. McAllen-Edinburg-Mission, TX Metropolitan Statistical Area
19. Laredo, TX Metropolitan Statistical Area
20. Huntington-Ashton, WV-KY-OH Metropolitan Statistical Area
America's least healthy cities

Thomas C. Frohlich and Alexander E.M. Hess, 24/7 Wall St. 9:32 p.m. EDT April 13, 2014


- Physical Health Index: 70.5
- Obesity rate: 30.9% (25th highest)
- Blood pressure: 40.6% (3rd highest)
- Poverty rate: 16.4% (176th highest)

Kingsport area residents suffered from a variety of health issues the past few years, including chronic pain and heart problems. More than 31% of respondents reported recurring knee and leg pain, and 40.6% complained of high blood pressure, both among the nation's worst rates. The region's health concerns may be tied to low rates of educational attainment and low incomes. Less than 20% of Kingsport area adults had at least a bachelor's degree in 2012, a considerably lower rate than the nearly 30% of Americans with at least a bachelor's degree. The area was also not particularly wealthy. A typical family in the Kingsport metro area earned just $37,769 in 2012, among the lowest median incomes nationwide.

America's Unhealthiest Cities

1. Huntington-Ashland, W.Va.-Ky.-Ohio
4. Columbus, Ga.-Ala.
5. Redding, Calif.
7. Clarksville, Tenn.-Ky.
9. Spartanburg, S.C.
Kingsport issues building permit for new Krispy Kreme

April 23rd, 2014 3:55 pm by MATTHEW LANE

KINGSPORT — Krispy Kreme is coming back to Kingsport.

According to the city’s building department, a $525,000 building permit was issued Wednesday for a Krispy Kreme establishment on Stone Drive, across the parking lot from the new Popeye’s restaurant, on the site where the Beach Hut used to stand.

The 2,464-square-foot building will be a stand-alone structure, and according to the building department, construction is expected to begin soon.

The Model City has been without a Krispy Kreme for more than four years since the Center Street location changed to a Seavers establishment, following the death of Ralph Coomer, who had started the franchise in Kingsport in 1968.

Krispy Kreme Doughnuts opened its first location in Winston-Salem, N.C., in 1937 and since then has grown to thousands of locations around the world, including stand-alone stores and in grocery stores, convenience stores and gas stations, along with 500 international stores.

For more information visit www.krispykreme.com.
MISSION
To provide quality medical care that exceeds patient expectations and builds lasting relationships.

VISION
Engaging our patients and our communities to be the healthiest region in America.

CORE VALUES
We, at Holston Medical Group, adopt these values as our essential guiding principles and the foundation for every decision we make.
The Problem

- The United States has a “sick care” system that is not designed to take good care of chronically ill patients who generate about 75% of healthcare cost.
- The system does a poor job in preventing people from getting sick.
- American adults receive recommended care only 55% of the time.
- Gaps in treatment lead to unnecessary complications, emergency room visits and hospitalizations—major components of the waste of healthcare dollars.
- Poor handoff from inpatient to outpatient care contribute to lack of follow-up after discharge. This can lead to readmits.
- No financial incentives for physicians to engage in the home care of patients beyond the general supervision of the home health nurses.
- Non-medical determinants of health are not being properly addressed.
- Cost of healthcare in the United States is about twice as much as other advanced countries.
- Healthcare is becoming unaffordable for many people.
Geographic Variation in Medicare Spending

"Marked differences in spending occur at both state and regional levels."

**EXHIBIT 1**

Five Hospital Referral Regions (HRRs) with the Highest and Lowest Actual Per Capita Medicare Spending in 2012

<table>
<thead>
<tr>
<th>Highest per capita HRR</th>
<th>2012 actual per capita spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miami, Fla.</td>
<td>$15,357</td>
</tr>
<tr>
<td>Bronx, N.Y.</td>
<td>$14,699</td>
</tr>
<tr>
<td>Manhattan, N.Y.</td>
<td>$13,699</td>
</tr>
<tr>
<td>Los Angeles, Calif.</td>
<td>$13,319</td>
</tr>
<tr>
<td>Chicago, Ill.</td>
<td>$13,059</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lowest per capita HRR</th>
<th>2012 actual per capita spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honolulu, Hawaii</td>
<td>$6,790</td>
</tr>
<tr>
<td>Dubuque, Iowa</td>
<td>$6,716</td>
</tr>
<tr>
<td>Bend, Ore.</td>
<td>$6,667</td>
</tr>
<tr>
<td>Missoula, Mont.</td>
<td>$6,633</td>
</tr>
<tr>
<td>Grand Junction, Colo.</td>
<td>$6,569</td>
</tr>
</tbody>
</table>

*source* CMS.gov, "Geographic Variation Public Use Files," updated December 2013.

$9,503

Per beneficiary

In 2012 Medicare spent an average of $9,503 nationally per beneficiary, but spending varied considerably from one region to another.

2.5 times

In 2012 Medicare spent almost 2.5 times as much per beneficiary in Miami, Fla., than it spent per beneficiary in Grand Junction, Colo.
Healthcare Spending In The Last Year of Life

[Bar chart showing healthcare spending in the last year of life, with categories ranging from 11 to 6 months to the last month, and spending categories for hospital and other expenses.]
2009 DATA

Healthcare Spending per capita vs. Average Life Expectancy Among OECD Countries

- USA
- Japan
- S. Korea
- Mexico
- Hungary
- UK

Average Life Expectancy at Birth (Years)

Total Expenditure on Health per capita in USD

Linear Trend line
Per Capita Medicare Spending Is Actually Falling

SEPT. 3, 2014

Medicare Spending in 2014 Dollars, Per Beneficiary

That Relatively Flat Line May Look Boring, but It’s a Big Deal
Medicare spending almost always goes up.
Changing the Way Medicare Pays for Care Could Save Billions

A Commonwealth Fund study proposes replacing Medicare’s current formula for determining physician fees with a pay-for-value approach that would:

⇒ Increase payments for providers in accountable care organizations, patient-centered medical homes, and other innovative models of care
⇒ Strengthen primary care and care teams
⇒ Promote bundled payments that combine fees for hospital services, physician services, and some follow-up care.

OVER 10 YEARS, THESE POLICIES COULD SAVE:

FEDERAL GOVERNMENT $788 billion

HOUSEHOLDS $291 billion

PRIVATE EMPLOYERS $91 billion

STATE & LOCAL GOVERNMENTS $163 billion

$1.3 TRILLION IN SYSTEMWIDE SAVINGS
Doctors' Pay Will Be Linked to Quality in Historic U.S. Overhaul of Medical Billing

By Alex Wayne | Jan 26, 2015 12:30 PM ET | 211 Comments Email Print Speed

The Obama administration will make historic changes to how the U.S. pays its annual $3 trillion health-care bill, aiming to curtail a costly habit of paying doctors and hospitals without regard to quality or effectiveness.

Starting next year Medicare, which covers about 50 million elderly and disabled Americans, will base 30 percent of payments on how well health providers care for patients, some of which will put them at financial risk based on the quality they deliver. By 2018, the goal is to put half of payments under the new system.
The set of announcements around Medicare payment reform released by HHS makes the core direction of federal reimbursement absolutely clear.

Jan 26, 2015

A Signal Moment in Healthcare Reimbursement: The Feds Send a Clear Signal on Payment Reform

The bundle of announcements that came out of the U.S. Department of Health and Human Services (HHS) around payment reform on Jan. 26 was extremely important, and anyone in the U.S. healthcare system who would even think about ignoring or dismissing the impact of those announcements would have to be considered foolish or shortsighted.

As this publication reported on Monday afternoon, officials at HHS announced that the agency wants 30 percent of traditional Medicare fee-for-service payments to be tied to a quality-driven, alternative payment model, such as an accountable care organization (ACO), by the end of the year. Further, HHS has set a goal of 50 percent of traditional fee-for-service (FFS) Medicare payments to be tied to quality-driven, value-based reimbursement models. The agency wants 85 percent of Medicare FFS payments tied to quality or value by 2016, and 90 percent by 2018, by leveraging the Hospital Value-Based Purchasing Program and Hospital Readmissions Reduction Program.

Yes, that’s right, 90 percent of Medicare fee-for-service reimbursement, linked either to value-based purchasing or to some sort of quality measure. And, no question about it, that’s big. Really big.
Hey, I Found Your Nose

It Was In My Business Again!
Reforming health care
This is going to hurt
Doctors Are No Different
You Herd Cats

By Moving Their Food
“Triple Aim” of the Institute for Healthcare Improvement

1. Improve the experience of care
2. Improve the health of populations
3. Reduce the per capita costs of care
Population Health Management (PHM)

- Population health management addresses the care of populations and the engagement of patients across care settings and over time. Above all, it requires an organized system of care.

  Richard Hodach, M.D., MPH, PhD
Barriers to PHM

• Fragmentation of care delivery
• Misaligned financial incentives
• Lack of managed-care knowledge
• Insufficient use of health information technology
Figure 1. Percentage of office-based physicians with EHR systems: United States, 2001–2013

NOTES: EHR is electronic health record. "Any EHR system" is a medical or health record system that is either all or partially electronic (excluding systems solely for billing). Data for 2001–2007 are from in-person National Ambulatory Medical Care Survey (NAMCS) interviews. Data for 2008–2010 are from combined files (in-person NAMCS and mail survey). Estimates for 2011–2013 data are based on the mail survey only. Estimates for a basic system prior to 2006 could not be computed because some items were not collected in the survey. Data include nonfederal, office-based physicians and exclude radiologists, anesthesiologists, and pathologists.

SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey and National Ambulatory Medical Care Survey, Electronic Health Records Survey.
3 Pillars of Population Health Management

• Strengthen and expand the doctor patient relationship through the care team
• Reach out beyond the 4 walls of the office
• Optimize patient visits

Automation tools and analytics HELP make this happen
<table>
<thead>
<tr>
<th>Chronic Condition</th>
<th>% of Prevalence in Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td>34.6%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>18.2%</td>
</tr>
<tr>
<td>Depression</td>
<td>17.6%</td>
</tr>
<tr>
<td>Asthma</td>
<td>14.0%</td>
</tr>
<tr>
<td>CAD</td>
<td>5.5%</td>
</tr>
<tr>
<td>COPD</td>
<td>4.6%</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>3.8%</td>
</tr>
<tr>
<td>AFIB</td>
<td>2.0%</td>
</tr>
<tr>
<td>Gout</td>
<td>1.7%</td>
</tr>
<tr>
<td>Kidney Dysfunction</td>
<td>1.7%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1.7%</td>
</tr>
<tr>
<td>CHF</td>
<td>1.6%</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>1.2%</td>
</tr>
<tr>
<td>Stroke</td>
<td>0.9%</td>
</tr>
<tr>
<td>ASCVD</td>
<td>0.8%</td>
</tr>
<tr>
<td>MI</td>
<td>0.1%</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
Patient Stratification

Level 1 - patient with zero or one chronic medical problem and no identifiable risk of needing to be seen in the ER or hospital.

Would receive
- preventative care
- primary care visits in the office
- urgent care
- specialty care as needed
- PCP office outreach
- Coordination of care
Patient Stratification

**Level 2** - patient with 2-4 chronic medical conditions and no identifiable risk of needing to be seen in the ER or hospital

Would receive
- All level 1 services
- Additional care coordination
- Value coordination
Patient Stratification

**Level 3** – patient with 5 or more chronic medical conditions or risk of being seen or has recently been seen in an emergency room or hospital

**Would receive**
- All level I and all level 2 services
- Hospitalist/extensivist transition of care and clinic visits
Patient Stratification

Level 3 AOS – alternative outreach services to care for patient with a need to be seen in the place they call “home” including assisted living and nursing home

Level 3 HP – patient in need of Hospice and Palliative Care
HMG Population Risk Levels

- Level 1 (0 to 1 conditions): 80%
- Level 2 (2 to 4 conditions): 18%
- Level 3 (5+ conditions): 2%

- This process allowed for immediate action on Level 2 & 3 patient
HMG High Risk Patient Management Model

**Extensivist Clinic Management**
- Multiple Chronic Disease
- Readmission Risk Assessment
- Future Cost Containment

**Moderate Risk**
- Stable 1 Disease State

**Low Risk**
- Preventative Population

**Aggressive Management**
- Primary Care Level
- Maintain Wellness

**Moderate Rising Risk**
- 2-4 Chronic Disease
- Smoke, >35 BMI, Behavioral Health

**5 or > Chronic and/or IP discharge with Readmission Risk**

**Care Team Concept**
- Case Load 200
- Outreach with Mailings, Close Gaps

**AOS/Palliative Care**
- Debilitating Long Term address needs of patient and caregivers

**AOS/Palliative Care**
- Catastrophic Cases: Cancer, End-Stage Chronic Disease

**Case Management**
- Source of Case Load: Hospital Census Stratification
- Referrals from PCP
- Case Load – 125
Care Team

- Physicians
- Mid-Level Practitioners
- Nurses and Medical Assistants
- Social Workers
- Nurse Educators
- Care Coordinators
Electronic Registries

• Provides lists of patient with particular health conditions and shows what has been done for them and when
• Use automated method of communicating with patients who are over-due for preventative or chronic care services
Optimize Patient Visits

Patient
• Fills out a health risk assessment (HRA)
• Receives educational materials including online media tools to prepare them for the office visit

Care Team
• Actionable, patient specific reports to show what has been done for the patient and the gaps in care that need to be filled
• Nonmedical issues that may be impeding patient’s ability to manage their health and health risks
• Population level reports that help them figure out how to help improve the quality of care
Broad View of Population Health

Health Role

Health Care Role

Determinants & Factors

Genetic Endowment

Socioeconomic factors

Prevention & Health Promotion

Physical Environment

Disparities

Behavioral Risk Factors

Physiological Risk Factors

Resilience

Disease & Injury Burden

Medical Care

Health & Function

Morbidity & Death

Well-Being Thriving Resilient

Intermediate Outcomes

States of Health

Quality of life, Able to do your Job

Individual Risk Factors
Episodic vs. Population Health Models – transitioning from *volume to value*

**Episodic Model**
- Patient Schedules Appointment
- PCP Provides Care
- PCP Bills Medicare

**Population Health Model**
- **Financial Responsibility**
- **Cost & Quality Outcomes**
- **Coding Accuracy: MRA**
- **Patient Experience**
- **Predictive Modeling/ Mbr Stratification**
- **Mbr Gaps in Care ID & Closure**

- **Specialists: Referrals & Provider Network Mgmt**
- **Hospital: Acute / Post-Acute Coordination**
- **Patient Access: Telemed, eVisits, Remote Monitoring**
- **Prevention & Wellness**
- **Chronic Care Mgmt: In-home & telephonic**

**IT Enablement & Support: HIE Connectivity**
- Provider Coordination and Workflow

*Humana*
PCMH 2014
(6 standards/27 elements/100 points)

1) Patient-Centered Access (10)
   A) *Patient-Centered Appointment Access
   B) 24/7 Access to Clinical Advice
   C) Electronic Access

2) Team-Based Care (12)
   A) Continuity
   B) Medical Home Responsibilities
   C) Culturally and Linguistically Appropriate Services
   D) *The Practice Team

3) Population Health Management (20)
   A) Patient Information
   B) Clinical Data
   C) Comprehensive Health Assessment
   D) *Use Data for Population Management
   E) Implement Evidence-Based Decision Support

* Must-pass

4) Care Management and Support (20)
   A) Identify Patients for Care Management
   B) *Care Planning and Self-Care Support
   C) Medication Management
   D) Use Electronic Prescribing
   E) Support Self-Care & Shared Decision Making

5) Care Coordination and Care Transitions (18)
   A) Test Tracking and Follow-Up
   B) *Referral Tracking and Follow-Up
   C) Coordinate Care Transitions

6) Performance Measurement and Quality Improvement (20)
   A) Measure Clinical Quality Performance
   B) *Measure Resource Use and Care Coordination
   C) Demonstrate Continuous Quality Improvement
   D) Report Performance
   E) Use Certified EHR Technology
Different levels of recognition for different levels of ability

Level 1  35-59 points

Level 2  60-84 points

Level 3  85-100 points
PCMH

- Studies show that it added $2.26 per patient per month in operating costs
- It saved $18 per patient per month in averted hospitalizations and emergency room visits, most of the savings went to the payers

How can this be made financially feasible?

How about sharing the savings with the providers?
Accountable Care Organizations (ACO)

What’s an ACO?

Accountable Care Organizations (ACOs) are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their Medicare patients.

The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors.

When an ACO succeeds both in delivering high-quality care and spending health care dollars more wisely, it will share in the savings it achieves for the Medicare program.

Medicare offers several ACO programs:

- Medicare Shared Savings Program—a program that helps a Medicare fee-for-service program providers become an ACO. Apply Now.
- Advance Payment ACO Model—a supplementary incentive program for selected participants in the Shared Savings Program.
- Pioneer ACO Model—a program designed for early adopters of coordinated care. No longer accepting applications.

Organizations across the country have already transformed the way they deliver care, in ways similar to the ACOs that Medicare supports.
Qualuable is comprised of more than 500 primary care providers and specialists who represent Highlands Physicians, Inc., Holston Medical Group, Medical Care, LLC, Mountain Region Family Medicine and State of Franklin Healthcare.

We are doctors who value the practice of medicine and desire to provide you the very best medicine has to offer. Championing excellence in responsive, patient-centered care, we're committed to you and the communities we're privileged to serve.
MU2: Mission Impossible

Ill-conceived government mandate places unnecessary burden on physicians
Meaningful Use

The HITECH revision of the 2009 American Recovery and Reimbursement Act (ARRA), which established the **Meaningful Use program**, have these objectives:

- Improve quality, safety, and efficiency and reduce health disparities
- Engage patients and their families in their healthcare
- Improve healthcare coordination
- Ensure privacy and confidentiality for personal health information
- **Improve population health**
Population Health Management in MU1

- Show the ability to exchange data with other providers
- Generate lists of patients with specific conditions to use in quality improvement activities
- Send reminders to patients for preventative or follow-up care
PHM in MU2

In stage 2 the requirements have been expended to:

• Use health IT for continuous quality improvement at the point of care
• Exchange information in the most structured format possible such as the electronic transmission of orders entered using computerized provider order entry (CPOE)
• Electronic transmission of diagnostic test results
Population Health Management in MU3

In stage 3 criteria are expected to be:

- Focus on promoting improvement of quality, safety and efficiency
- Focus on decision support for national high priority conditions
- Patient access to self-management tools
- Access to comprehensive patient data
- Improving population health
Technology needed but interoperability is required

“Top Ten List” of health IT-based population health management tools:

- Electronic Health Records (EHRs)
- Patient registries
- Health information exchange
- Risk stratification
- Automated outreach
- Referral tracking
- Patient portals
- Telehealth / telemedicine
- Remote patient monitoring
- Advanced population analytics
OnePartner Health Information Exchange

- Patient information at the point of care, regardless of EMR
- Greater level of coordination, specifically for high-risk patients
- Fewer duplicated services
- Greater cost savings
Population Health Model

- Define Population
- Measure Outcomes
- Manage Care
- Identity Care Gaps
- Stratify Risks
- Engage Patients

CARE PROVIDERS

AUTOMATED & ONGOING

PATIENT POPULATION
Core Competencies Needed To Do Population Health Management

- Ensure that patient received the preventative and chronic care recommendations and evidence-based guidelines
- Patient conditions are tracked in a systematic way
- Practice reaches out to noncompliant patients and those who don’t regularly see their PCP
- Practice provides patient education and self-management coaching
- Steps are taken to address poor health behaviors
Roadmap for Success

- Planning for Population Health Management
- Data Collection, Storage and Management
- Population Monitoring and Stratification
- Patient Engagement
- Team-Based Interventions
- Measuring Outcomes
We should not presume that change will never come. Sometimes change is outside of our control.
Carburetors up through the 1960s were far simpler and cheaper than any fuel injection system, but by the 1970s, exhaust emission regulations became so onerous that carburetors rapidly became horrendously complex devices. I can attest that they were intimidating and difficult to rebuild and tune properly, and car manufacturers eventually had little choice but to switch over to fuel injection to meet the regulations. By that time, the gap in cost between the two systems had closed a lot, making the justification easy.
Choluteca Bridge, Honduras.
Built in 1930.
On the Pan American Hwy
Gift from Japan to Honduras
Hurricane Mitch

1998

75 inches of rain in 4 hours

14,800 deaths

150 bridges destroyed
The Castle Clinic Is Closed

Due to Dr. Allen’s decision to close the business we are no longer in business

Patient’s medical records please call
(613) 879-6297

zellevschloss
Trajectory to Value-Based Purchasing
It is a journey, not a fixed model of care

Value-Based Purchasing: Reimbursement Tied to Performance on Value

Value/Outcome Measurement: Reporting of Quality, Utilization and Patient Satisfaction Measures

Operational Care Coordination: Embedded RN Coordinator and Health Plan Care Coordination

Primary Care Capacity: Patient Centered Medical Home

HIT Infrastructure: EHRs and Connectivity

Supportive Base for ACOs, PCMH Networks, Bundled Payments, Global Capitation

Source: THINC - Taconic Health Information Network and Community