Maximizing quality measurement and improvement
Of frameworks and leveraging existing data and methods

Christina Bethell, PhD, MBA, MPH
Professor, School of Medicine, Department of Pediatrics
Oregon Health & Science University
Director, The Child & Adolescent Health Measurement Initiative

Tri-State Children’s Health Improvement Consortium Presentation

September 14, 2011

Overview

• **Using a Framework for Measurement** -- *Why we need one and what components must be addressed.*
  – What does the CHIPRA Legislation suggest about a Framework?

• **The National Surveys** -- *Why Wait? Using available data to look at children’s health care quality.*
  – What National Survey data are available to address the CHIPRA Core Measure domains.

• **A Closer Look at the value of National Survey Data for State-Level Quality Improvement** –
  – How to think about using the data to support state-level QI?
Why a Framework for Measurement?

Meeting the Needs of Multiple Audiences

A roadmap to ensure measures are strategically selected to provide comprehensive coverage of the dimensions of children’s health care quality in the most actionable and efficient manner possible!

- CMS Core Measures
- State-Specific Measures
- Meaningful Use Measures
- CHIP Annual Reports
- EPSDT Reporting
- Medicaid Reporting
- Title V Needs Assessment
- MCO Performance Measures
- EQRO Reporting
Building on Earlier Work

A look back at the Consumer Information Framework

- Initially developed by FACCT for CMS (then HCFA) – June 1997 (CAHMI)
- Adopted by IOM, AHRQ, NCQA, FEHB
- Tested with 700+ consumers:
  - Medicare
  - Commercial
  - Chronic disease
  - Parents of sick children
  - Medicaid

Consumer Information Framework – 4 M’s

Key Components to Inform Current Approaches

- **Model**: to articulate priorities and organize quality information for decision-making
- **Messages**: to inform and empower key stakeholders to take action (consumers, purchasers, providers, policymakers)
- **Measures**: relevant, understandable evaluations of health care performance maximizing and integrating all sources of data; iterative consideration of set and measure criteria
- **Methods**: Integrated case finding, sampling, data collection, scoring, grading and reporting methods
**Consumer Information Framework**

**Component: Measurement Model**

**Model:** to articulate domains and organize quality information for decision-making

- Topics (Goals of care; outcomes!)
- Type of measure (process, outcome, experience of care—OR--steps to good care; experience of care; results of good care)
- Unit of analysis (patient, practice, plan, medical group, state, nation, county, etc.)
- Population (ages, health status, race/ethnicity, etc.)

**Measurement Model – What the CHIPRA Legislation Says**

- **Topics (Goals of Care-Outcomes?)**
  - Clinical quality
  - Health Care Safety
  - Family Experience with Care
  - Health Care in the Most Integrated Setting
  - Elimination of Disparities

- **Types of measure (process, outcome, experience of care)**
  - Structure of the Clinical Care System
  - Process of Care
  - Outcome of Care
  - Patient Experiences of Care

"clinical quality, health care safety, family experience with health care, health care in the most integrated setting, and elimination of racial, ethnic, and socioeconomic disparities in health and health care."

-- CHIPRA § 401, 123 Stat. 73

"the term 'pediatric quality measure' means a measurement of clinical care... including the structure of the clinical care system, the process of care, the outcome of care, or patient experiences of care."

-- CHIPRA § 401, 123 Stat. 75
Consumer Information Framework

Messages – What the CHIPRA Legislation Says

**Messages:** to inform and empower key stakeholders to take action (establish interest, gain credibility, guide action)

Messages for a broad range of audiences

- Purchasers
- Families
- Health Care Providers

Audiences Suggested by the CHIPRA legislation

“Allow purchasers, families, and health care providers to understand the quality of care in relation to the preventive needs of children, treatments aimed at managing and resolving acute conditions, and diagnostic and treatment services whose purpose is to correct or ameliorate physical, mental, or developmental conditions that could, if untreated or poorly treated, become chronic.” -- CHIPRA § 401, 123 Stat. 73
Consumer Information Framework

Methods & Measures – What the CHIPRA Legislation Says

Methods: Scoring, grading and presenting performance scores—alone and across domains!

Measures: relevant, understandable evaluations of health care performance—allow stratification; maximize value across sources of data and over time

Stratification to Examine Disparities
- Children with special health care needs
- Race/ethnicity
- Socioeconomic status

"The types of measures that, taken together, can be used to estimate the overall national quality of health care for children, including children with special needs, and to perform comparative analyses of pediatric health care quality and racial, ethnic, and socioeconomic disparities in child health and healthcare for children -- CHIPRA § 401, 123 Stat. 72"

Identifying Measures Using a Framework

CAHMI Framework for Selection & Application of Pediatric Measures

USER FILTER: Who and for what purpose
- Consumers: selection, education & empowerment
- Purchasers: value-based purchasing
- Program Managers: program evaluation
- Providers: quality improvement

RELEVANT CATEGORIES FILTER:
- Performance areas of interest
  - The Basics
  - Getting Better
  - Staying health
  - Living w/ illness
  - Changing Needs

UNIT OF ANALYSIS FILTER:
- Setting(s) for measurement activities
  - PCPs or Medical Groups
  - Community Wide
  - Agencies/ Orgs
  - Public Health

Core Set of Pediatric Quality Measures
Consider Measures that can be used at Multiple Levels

- Used to collect data across geographic areas and system and service settings
- Yield data comparable across units of analysis and key subgroups
- Have benchmarks available
- Currently collected and have potential to be adapted through sampling strategies, etc. to yield more robust data for relevant subgroups

Why Wait? Working with what we have available.

Using the National Survey Indicators

- National Survey of Children’s Health (NSCH)
- National Survey of Children with Special Health Care Needs (NS-CSHCN)
- Both surveys are conducted using State and Local Area Integrated Telephone Survey (SLAITS)
  - Surveys are administered using Computer-Assisted Telephone Interviewing (CATI) Instruments
National Survey Data

Applying the Results at Multiple Levels

• Sampling weights permit national and state-specific estimates of health and well-being
  – Sub-state data for Rural/Urban areas is available on DRC website
  – Local – County estimates not available in the survey, however, synthetic estimates are possible!

• Weights are adjusted to match American Community Survey population totals for various demographic groups

National and State Survey Data

Indicators by CHIPRA Core Measure Domain*

<table>
<thead>
<tr>
<th>Prevention &amp; Health Promotion</th>
<th>Availability**</th>
<th>Management of Acute Conditions</th>
<th>Management of Chronic Conditions</th>
<th>Family Experiences of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Well Visits</td>
<td>• Mental health Care Access</td>
<td>N/A</td>
<td>• CSHCN with unmet needs</td>
<td>• Family-Centered Care</td>
</tr>
<tr>
<td>• Dental Visits</td>
<td>• Specialist Access</td>
<td></td>
<td>• CSHCN with unmet needs - family support services</td>
<td></td>
</tr>
<tr>
<td>• Developmental Surveillance</td>
<td></td>
<td></td>
<td>• CSHCN with difficulty getting referral</td>
<td></td>
</tr>
<tr>
<td>• Developmental Screening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Immunizations (3 indicators)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* All indicators available to be stratified by CSHCN, SES and Race/Ethnicity

** Also includes: Adequacy of Health Insurance and Consistency of Health Insurance
ARTICLES—STATE PROFILES, DURATION OF COVERAGE, AVAILABILITY OF SERVICES, QUALITY MEASURES, MEASURING FAMILY EXPERIENCES OF CARE, STATE QUALITY MEASURE NEEDS, REPORTING QUALITY

A National and State Profile of Leading Health Problems and Health Care Quality for US Children: Key Insurance Disparities and Across-State Variations

Christina D. Bethel, PhD, MBA, MPH; Michael D. Rogers, PhD; Bonnie L. Stooland, PhD; Edward C. Scher, MD, MPH; Robert L. Roberts, MD; Paul W. Nowacki, MPH

From the Olmsted County Health Insurance Project, Department of Pediatrics, School of Medicine, Oregon Health & Science University, Portland; Children's Oncology Group, Portland; University of Minnesota, Minneapolis; and Children's Hospital of Wisconsin, Milwaukee. Address correspondence to Bonnie L. Stooland, Ph.D., University of Wisconsin-Madison, 600 Highland Ave., C.S. 2001, Madison, WI 53706; bstooland@wisc.edu

Objectives: To identify and describe health problems and key insurance disparities for US children, including disparities between public and private insurance and across states. The study also describes key insurance disparities and the effect of state-specific policies on insurance coverage.

Research Design: The study used data from the 2001-2002 National Medical Expenditure Survey, a nationally representative survey of the civilian noninstitutionalized population. The survey includes data on healthcare utilization, expenditures, and insurance coverage. The study also includes data from the Children's Health Insurance Program (CHIP), a state-based program made possible by the Balanced Budget Act of 1997, which provides health insurance to low-income children.

Results: The study found that children with public insurance have lower healthcare utilization and spending than children with private insurance. Children with public insurance were more likely to be uninsured, and they were less likely to receive preventive care, such as immunizations and well-child visits. Children with public insurance were also more likely to be hospitalized and to have more chronic conditions, such as asthma and diabetes.

Conclusions: The study highlights the importance of state-specific policies and the need for more research on the impact of insurance coverage on healthcare utilization and spending. The study also highlights the need for more research on the impact of insurance coverage on healthcare utilization and spending.

Keywords: Children's health insurance, health care quality, state policies, public and private insurance, insurance coverage.
Using National Survey Data:

Myth-Busting: Assumption that Publicly Insured Children Always Fare Worse

- **Insurance Inconsistent (gaps)** (15.1%)
  - Adjusted OR: 2.25 (1.72-2.93)

- **Insurance Inadequate** (23.5%)
  - Adjusted OR: .50 (.41-.60)

- **Specialist Care Access Problems** (23.5%)
  - Adjusted OR: 1.29 (1.03-1.62)

- **Mental Health Access: Did not receive needed care** (40.0%)
  - Adjusted OR: 1.06 (.78-1.43)

---

**Minimal Quality Index**

Minimal Quality of Care Composite Measure (insurance usually or always adequate, at least 1 preventive care visit in previous 12 months, and care meets medical home criteria)

Nationwide: 41.3% of children met indicator.

Higher=Better Performance
- Significantly higher than U.S.
- Higher than U.S. but not significant
- Lower than U.S. but not significant
- Significantly lower than U.S.

Statistical significance: p<.05
Overview of the National Surveys

**National Survey of Children with Special Health Care Needs**
*(2005/06 & upcoming 09/10)*

- Previously conducted in 2001
- Awaiting public release of 2009/10 data
Key Topics Available in NSCH (cont.)

- **Health Care Quality and Equity**
  - Medical home for all children and children and youth with special health care needs
  - Health disparities for vulnerable populations (minorities, low income, by health status/CSHCN)
- **Community and School Activities**
- **Family Health and Activities**
- **Neighborhood Safety and Support**
Illustration: Leverage the NSCH to create a unique synthesis of nationally comparable data

Illustration: Leverage both the NS CSHCN and NSCH to create a unique synthesis of nationally comparable data
Illustration: All of the CSHCN living in California would fill 25,454 school buses and stretch 174 miles

How far would the buses span if they were filled with subgroups of California CSHCN?

- Publicly Insured: 49 miles
- Privately Insured: 111 miles
- Uninsured: 14 miles (CA 40th)
- White: 83 miles
- Non-white: 91 miles

=174 miles

Illustration: Highlights of CSHCN in California

How far would a line of school buses span if they were filled with subgroups of California CSHCN?

- Asthma: 73 miles
- 2+ of 16 more common conditions: 103 miles
- CSHCN who are also overweight or obese: 68 miles
- Complex needs: 73 miles
- Functional difficulties: 152 (many fewer have limitations in daily activities due to difficulties)

=174 miles
Illustration

- **573,000 CSHCN** in CA have asthma, which is the equivalent of enough children to fill **30 Staples Centers**!
  - 29 for CSHCN with 2+ conditions
  - 20 for CSHCN with emotional, developmental or behavioral health issues
  - 17 for ADHD
  - 3.35 for Autism/ASD
  - 1.88 for Cerebral Palsy
  - 1.52 for Epilepsy
  - .78 for Diabetes
  - .57 for Down Syndrome

We all know availability of data does not equal access or effective use of data

Meaningful Data Available

Simple and Usable Quick Access Mechanisms

Application and Interpretation Assistance
What Data are Available on the DRC Website

- Data Snapshots
  - View Multiple Indicators from each survey
  - Compare Multiple Indicators Across Years
  - View Topic Specific Snapshots

- Individual Indicators
  - Available by state, region, and nationwide
  - Can be stratified by subgroups
  - Compare all states on individual indicators

- State Ranking Maps
How the Data Resource Center Can Support Improvement Partnerships

Understand your population
User generated tables, bar and pie charts, and customizable reports supply prevalence estimates and population counts to help define your population of GSCHN and their health needs.

Assess system performance
Immediate access to over 100 state-specific indicators of child health and well-being and system performance for children overall and children with special health care needs (CSHCN).

Examine improvement opportunities
"Point and click" menu allows users to explore disparities and gaps in access and services for different population subgroups of children and CSHCN.

Select priorities
User generated tables, bar and pie charts, and customizable reports supply prevalence estimates and population counts to help guide selection of priority needs.

Set targets
"All States" ranking maps and tables provide benchmark data to assist in identifying state-negotiated performance measure targets.

Identify promising improvement models
Information on national, within and across States variation using standardized indicators helps identify where quality is better and can help in cross-state learning for purposes of identifying promising models for improvement as well as identify key collaborators for improvement.

Monitor progress
Centralized resource for standardized, population-based survey questions to use in collecting child health and health care quality data locally.
Using the National Survey Data for State-Level QI

Progression Through the Data Labyrinth

First Steps

• Our State: What is the prevalence and what are disparities across child subgroups within our state?

Venturing Further

• Compare Our State: Where does our state rank? Is prevalence and are disparities in our state different from other states?

Approaching the Center

• Understand differences within and across states: Are differences across states significant? What is associated with differences within and across states? Do these associations vary? Can they be explained by policy?

A look at the Medical Home Data for the Tri-States

What percentage of children have a Medical Home in our states?

<table>
<thead>
<tr>
<th>Presence of a medical home for children age 0-17 years in AK, OR and WV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a medical home</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Alaska</td>
</tr>
<tr>
<td>52.3%</td>
</tr>
<tr>
<td>47.7%</td>
</tr>
</tbody>
</table>

A look at the Medical Home Data for the Tri-States

What percentage of children have a Medical Home in our states?
A look at the Medical Home Data for the Tri-States

How does this Vary by Sub-Groups?

Children with a Medical Home by Insurance Type
Children age 0-17 years in AK, OR and WV

A look at the Medical Home Data for the Tri-States

How does this Vary by Sub-Groups?

Presence of a medical home for children age 0-17 years by CSHCN-Status in AK, OR and WV
A look at the Medical Home Data for the Tri-States

Where do our States Rank?
Percent of children with who received care within a medical home
2007 National Survey of Children’s Health

Alaska: 52.3% (44th)
Oregon: 63.4% (12th)
West Virginia: 64.6% (9th)

A closer look at the Medical Home Data for the Tri-States

What percentage of publicly insured meet the indicator criteria for Medical Home?

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Nation</th>
<th>AK</th>
<th>OR</th>
<th>WV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PDN</strong>: Child has personal doctor or nurse (PDN) who knows child and family well and is familiar with child’s health history</td>
<td>90.8%</td>
<td><strong>83.6%</strong> (51st)</td>
<td>91.2% (23rd)</td>
<td>94.1% (8th)</td>
</tr>
<tr>
<td><strong>Usual Source of Care</strong>: Child usually goes to a specific clinic, doctor’s office, or other place for medical treatment or advice when ill</td>
<td>90.5%</td>
<td><strong>92.6%</strong> (22nd)</td>
<td>92.7% (21st)</td>
<td>96.4% (3rd)</td>
</tr>
<tr>
<td><strong>Family-Centered Care</strong>: Parent reports a trusting, collaborative, working partnership with child’s health providers</td>
<td>57.0%</td>
<td><strong>59.8%</strong> (29th)</td>
<td>59.9% (28th)</td>
<td>73.5% (4th)</td>
</tr>
<tr>
<td><strong>No Problems getting Referrals</strong>: Child needed a referral in the previous 12 months and had no problems getting it</td>
<td>76.1%</td>
<td><strong>76.8%</strong> (28th)</td>
<td>70.4% (39th)</td>
<td>85.7% (11th)</td>
</tr>
<tr>
<td><strong>Effective Care Coordination</strong>: Family received all care coordination wanted and is satisfied with communication among providers and with schools</td>
<td><strong>62.7%</strong> (40th)</td>
<td><strong>58.2%</strong> (40th)</td>
<td><strong>60.5%</strong> (29th)</td>
<td><strong>65.0%</strong> (19th)</td>
</tr>
</tbody>
</table>
**A closer look at the Medical Home Data for the Tri-States**

**For Alaska: Do Geography & Perceptions of a PDN play a role?**

**Personal Doctor or Nurse by Urban/Rural**
Children (all insurance types) age 0-17 years in Alaska

![Bar chart showing personal doctor or nurse by urban/rural status for Alaska.

**Care Coordination by Race for Publicly Insured**

**Children who Received Effective Care Coordination by Race**
Publicly insured children age 0-17 years who needed care coordination in AK, OR, and WV

![Bar chart showing care coordination by race and state for Alaska, Oregon, and West Virginia.

---

**CAHMI**

The Child & Adolescent Health Measurement Initiative

Tri-State Learning Collaborative Presentation | September 14, 2011 | 43

---

**CAHMI**

The Child & Adolescent Health Measurement Initiative

Tri-State Learning Collaborative Presentation | September 14, 2011 | 44
A closer look at the Medical Home Data for the Tri-States

Care Coordination by CSHCN Status for Publicly Insured

Children who Received Effective Care Coordination by CSHCN-Status
Publicly Insured children age 0-17 years who needed care coordination in AK, OR and WV

The Aim Statement

Reminder: Components of a SMART Aim Statement

- **Outcome.** What are we trying to accomplish?
- **Numerical Goal.** By how much will this change?
- **Target Population.** Who is the specific target population?
- **Timeframe.** When will this be accomplished?
A look at the Medical Home Data for the Tri-States

Questions to Inform An Aim Statement

• What are the differences in likelihood of having a Medical Home among subgroups in our states?
• Where do our states rank for the percentage of children with a Medical Home?
• How do the differences/disparities with regard to Medical Home differ among states?
• What might account for the disparities/differences among states (policy, culture, other contextual factors)?
• Focus, focus, focus! Win, win, win!