Quality Leadership Summit

Achieving Breakthrough Performance in Rural Health Quality

December 2010

Jeff Spade, FACHE
Executive Director, NC Center for Rural Health Innovation and Performance
Vice President, NCHA
jspade@ncha.org
Acknowledgements

The Duke Endowment

NC Office of Rural Health

Institute for Healthcare Improvement

North Carolina Hospital Association
Leadership for Breakthrough Performance

- NC CAH and Small Rural Hospital Performance Improvement Portfolio
- NC Rural Hospital Lean Transformation Collaborative
- Leadership for Improvement: Models and Principles
- Observations and Lessons Learned
Fundamentally, the only way to achieve exceptional performance in any complex organization ..... is by generating, then sustaining, high speed, broad-based, non-stop improvement and innovation.

Stephen Spear
Why Breakthrough Performance in Rural Health?

Because In Rural Hospitals, We Can Lead:

• Quality of Care and Patient Safety
• High Value Customer Service
• Cost Effectiveness and Efficiency

Adopting a Quality Improvement Culture Drives Breakthrough Performance !!!
NC Rural Hospital Performance Improvement Portfolio

- CMS Core Measures (inpatient & outpatient)
- Board Quality Curriculum
- 340B Drug Program
- AHRQ Culture of Patient Safety Survey
- HIT Strategic Plan
- Lean Culture Transformation Collaborative
- Quality Assessment Tool (HLQAT)
- Trauma, Cardiac and Stroke System Development
- Pediatric Emergency Care Pilot
- Community Paramedic Program
- Telehealth

North Carolina Hospital Association
Core Measure Improvement Collaborative

- Commitment by 30 small, rural hospitals to improve core measure performance.
- Working to accomplish 95% process reliability.
- Partnership with NC Office of Rural Health, NCHA and CCME.
- Small, rural hospitals will enroll in the Hospital Outpatient Quality Data Reporting Program by submitting data for 11 quality measures for Acute Myocardial Infarction (AMI), Chest Pain (CP), Surgery, and Imaging Efficiency Measures.
- **Purpose:** Small, rural hospitals working together to achieve high reliability in CMS core measures.
- **Outcomes:** Over 200% improvement in pneumonia care and more than 120% improvement in heart failure care.
Outpatient Quality Measures

OP-1 Median Time to Fibrinolysis
OP-2 Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival
OP-3 Median Time to Transfer to Another Facility for Acute Coronary Intervention
OP-4 Aspirin at Arrival
OP-5 Median Time to ECG
OP-6 Prophylactic Antibiotic Initiated Within One Hour Prior to Surgical Incision
OP-7 Prophylactic Antibiotic Selection for Surgical Patients
OP-8 MRI Lumbar Spine for Low Back Pain
OP-9 Mammography Follow-up Rates
OP-10 Abdomen CT Use of Contrast Material
OP-11 Thorax CT Use of Contrast Material
Pneumonia Composite Score
Time Period: April 2009 through April 2010

Mean of CAH / Rural Hospitals
Benchmark for NC Hospitals
Reliable Care

95% Reliability
NC Top 10%

Pneumonia Composite
Pneumonia Trend
Composite Aggregate

Aggregated Pneumonia Composite

Rolling Year Time Periods

NOTE: The data points represented here represent the group of hospitals and the makeup of the composite at the time that time frame was originally ran. Changes to the measure definition and group definition have occurred over time.

26.4% in 2004

203% Improvement

NC Top 10%

Mean of CAH/Rural Hospitals
Benchmark for NC Hospitals
Heart Failure Composite Score
Time Period: April 2009 through April 2010

Mean of CAH / Rural Hospitals
Benchmark for NC Hospitals
Reliable Care

95% Reliability
NC Top 10%
Heart Failure Trend
Composite Aggregate

Aggregate Heart Failure Composite

Rolling Year Time Periods

Mean of CAH/Rural Hospitals
Benchmark for NC Hospitals

NOTE: The data points represented here represent the group of hospitals and the makeup of the composite at the time that time frame was originally ran. Changes to the measure definition and group definition have occurred over time.
CAH Combined Indicator Scores
Time Period: April 2009 through April 2010

HF - 1 Disc. Inst: 87%
HF - 2 LVF Assess: 92%
HF - 3 ACEI or ARB: 91%
HF - 4 Smk Cess: 91%
HF Composite: 80%

PN - 2 Inpt PPV: 93%
PN - 3p Blood CX Abx: 94%
PN - 4 Smk Cess: 94%
PN - 5c Timing Int. Abx: 95%
PN - 6 Abx. Selct: 88%
PN - 7 Inpt Flu: 92%
PN Composite: 82%
## Pneumonia Measures for Wilmington/Southern Area for six months ending 03/31/2009

<table>
<thead>
<tr>
<th>Pneumonia</th>
<th>Pneumonia Vaccine</th>
<th>Antibiotic at Arrival</th>
<th>Smoking Counseling</th>
<th>Appropriate Antibiotic</th>
<th>Blood Culture</th>
<th>Flu Vaccine</th>
<th># of Patients</th>
<th>Optimal Care PN Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average for NC Hospitals</td>
<td>92%</td>
<td>94%</td>
<td>94%</td>
<td>88%</td>
<td>93%</td>
<td>90%</td>
<td>157</td>
<td>80%</td>
</tr>
<tr>
<td>Top 10% of NC Hospitals</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>98%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td>94%</td>
</tr>
<tr>
<td>Anson Community Hospital</td>
<td>98%</td>
<td>100%</td>
<td>92%</td>
<td>100%</td>
<td>98%</td>
<td>96%</td>
<td>54</td>
<td>95%</td>
</tr>
<tr>
<td>Betsy Johnson Regional Hospital</td>
<td>85%</td>
<td>92%</td>
<td>68%</td>
<td>88%</td>
<td>93%</td>
<td>90%</td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td>Bladen County Hospital</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75%</td>
</tr>
<tr>
<td>Brunswick Community Hospital</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td>Cape Fear Valley</td>
<td>95%</td>
<td>91%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>82%</td>
</tr>
<tr>
<td>Central Carolina Hospital</td>
<td>99%</td>
<td>98%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td>Columbus Regional Healthcare System</td>
<td>95%</td>
<td>79%</td>
<td>100%</td>
<td>61%</td>
<td>91%</td>
<td>95%</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>First Health Montgomery Mem Hosp</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>96%</td>
<td>100%</td>
<td>30</td>
<td>97%</td>
</tr>
<tr>
<td>First Health Moore Regional Hosp</td>
<td>95%</td>
<td>96%</td>
<td>100%</td>
<td>91%</td>
<td>97%</td>
<td>94%</td>
<td>338</td>
<td>86%</td>
</tr>
<tr>
<td>First Health Richmond Mem Hosp</td>
<td>95%</td>
<td>89%</td>
<td>100%</td>
<td>81%</td>
<td>91%</td>
<td>98%</td>
<td>58</td>
<td>72%</td>
</tr>
<tr>
<td>J. Arthur Dosher Memorial Hospital</td>
<td>88%</td>
<td>100%</td>
<td>88%</td>
<td>91%</td>
<td>80%</td>
<td>81%</td>
<td>25</td>
<td>65%</td>
</tr>
<tr>
<td>New Hanover Reg Medical Ctr</td>
<td>75%</td>
<td>89%</td>
<td>100%</td>
<td>87%</td>
<td>76%</td>
<td>71%</td>
<td>114</td>
<td>61%</td>
</tr>
<tr>
<td>Sampson Regional Medical Center</td>
<td>87%</td>
<td>97%</td>
<td>100%</td>
<td>86%</td>
<td>88%</td>
<td>83%</td>
<td>125</td>
<td>74%</td>
</tr>
<tr>
<td>Sandhills Regional Medical Center</td>
<td>100%</td>
<td>92%</td>
<td>100%</td>
<td>95%</td>
<td>98%</td>
<td>98%</td>
<td>62</td>
<td>92%</td>
</tr>
<tr>
<td>Scotland Memorial Hospital</td>
<td>79%</td>
<td>100%</td>
<td>100%</td>
<td>81%</td>
<td>98%</td>
<td>82%</td>
<td>80</td>
<td>76%</td>
</tr>
<tr>
<td>Southeast Regional Med Ctr</td>
<td>81%</td>
<td>85%</td>
<td>97%</td>
<td>87%</td>
<td>94%</td>
<td>78%</td>
<td>252</td>
<td>69%</td>
</tr>
</tbody>
</table>

Hover over the column names at the top of the table for explanations of individual measures.
NP indicates that there were no patients in this category.
TF indicates "too few" patients or "too few" months of data.
* indicates a measure that is not included in the Optimal Care score.
Hospitals highlighted in green reported all measures for this condition and are in the top 10% for the optimal care score.
The optimal care score is the percent of patients that received each and every recommended treatment for which they were eligible.
The number of patients is the denominator for the optimal care score.

What do these numbers mean?
Why isn’t my hospital shown on this table?
Heart Failure Measures for Greenville/Eastern Area for six months ending 03/31/2009

<table>
<thead>
<tr>
<th>Heart Failure</th>
<th>ACE Inhibitor</th>
<th>LVS Evaluation</th>
<th>Discharge Instructions</th>
<th>Smoking Counseling</th>
<th># of Patients</th>
<th>Optimal Care HF Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average for NC Hospitals</td>
<td>91%</td>
<td>95%</td>
<td>83%</td>
<td>96%</td>
<td>131</td>
<td>80%</td>
</tr>
<tr>
<td>Top 10% of NC Hospitals</td>
<td>100%</td>
<td>100%</td>
<td>99%</td>
<td>100%</td>
<td></td>
<td>96%</td>
</tr>
<tr>
<td>Albemarle Hospital</td>
<td>93%</td>
<td>98%</td>
<td>73%</td>
<td></td>
<td></td>
<td>75%</td>
</tr>
<tr>
<td>Beaufort County Medical Center</td>
<td>83%</td>
<td>96%</td>
<td>73%</td>
<td></td>
<td></td>
<td>73%</td>
</tr>
<tr>
<td>Bertie Memorial Hospital</td>
<td>100%</td>
<td>82%</td>
<td>100%</td>
<td>TF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CarolinaEast Medical Center</td>
<td>77%</td>
<td>98%</td>
<td>65%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carteret County General Hospital</td>
<td>82%</td>
<td>96%</td>
<td>71%</td>
<td></td>
<td></td>
<td>70%</td>
</tr>
<tr>
<td>Chowen Hospital</td>
<td>93%</td>
<td>96%</td>
<td>85%</td>
<td></td>
<td>50</td>
<td>92%</td>
</tr>
<tr>
<td>Duplin General Hospital</td>
<td>100%</td>
<td>100%</td>
<td>97%</td>
<td></td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Halifax Regional Medical Center</td>
<td>91%</td>
<td>100%</td>
<td>82%</td>
<td></td>
<td>170</td>
<td>92%</td>
</tr>
<tr>
<td>Heritage Hospital</td>
<td>98%</td>
<td>99%</td>
<td>80%</td>
<td></td>
<td>125</td>
<td>89%</td>
</tr>
<tr>
<td>Lenoir Memorial Hospital</td>
<td>86%</td>
<td>97%</td>
<td>53%</td>
<td></td>
<td>205</td>
<td>93%</td>
</tr>
<tr>
<td>Nash Health Care Systems</td>
<td>86%</td>
<td>97%</td>
<td>95%</td>
<td></td>
<td>299</td>
<td>90%</td>
</tr>
<tr>
<td>Onslow Memorial Hospital</td>
<td>93%</td>
<td>97%</td>
<td>85%</td>
<td></td>
<td>115</td>
<td>94%</td>
</tr>
<tr>
<td>Pitt County Memorial Hospital</td>
<td>96%</td>
<td>99%</td>
<td>79%</td>
<td></td>
<td>494</td>
<td>79%</td>
</tr>
<tr>
<td>Pungo District Hospital Corp</td>
<td>50%</td>
<td>55%</td>
<td>100%</td>
<td></td>
<td>11</td>
<td>45%</td>
</tr>
<tr>
<td>Roanoke-Chowan Hospital</td>
<td>97%</td>
<td>100%</td>
<td>81%</td>
<td></td>
<td>94</td>
<td>92%</td>
</tr>
<tr>
<td>The Outer Banks Hospital</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td>&lt; 10</td>
<td>TF</td>
</tr>
<tr>
<td>Washington County Hospital</td>
<td>100%</td>
<td>86%</td>
<td>100%</td>
<td></td>
<td>24</td>
<td>98%</td>
</tr>
<tr>
<td>Wayne Memorial Hospital</td>
<td>93%</td>
<td>99%</td>
<td>93%</td>
<td></td>
<td>239</td>
<td>91%</td>
</tr>
<tr>
<td>Wilson Medical Center</td>
<td>100%</td>
<td>100%</td>
<td>86%</td>
<td></td>
<td>115</td>
<td>83%</td>
</tr>
</tbody>
</table>

Hover over the column names at the top of the table for explanations of individual measures.
NP indicates that there were no patients in this category.
TF indicates "too few" patients or "too few" months of data.
* indicates a measure that is not included in the Optimal Care score.
Hospitals highlighted in green reported all measures for this condition and are in the top 10% for the optimal care score.
The optimal care score is the percent of patients that received each and every recommended treatment for which they were eligible.
The number of patients is the denominator for the optimal care score.
What do these numbers mean?
Why isn't my hospital shown on this table?
## N.C. Quality Dashboard for Sample Hospital

### HCAHPS Patient Perceptions Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Category</th>
<th>Apr 2008-Mar 2009</th>
<th>Quartiles are developed from the scores of 108 N.C. Hospitals. To see more detail and definitions of the measures please visit <a href="http://www.NCHospitalQuality.org">www.NCHospitalQuality.org</a> or <a href="http://www.hospitalcompare.hhs.gov">www.hospitalcompare.hhs.gov</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you Recommend?</td>
<td>Yes, Definitely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How would you rate hospital overall? (Scale of 1-10)</td>
<td>9 or 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Optimal Care Score</th>
<th>Mortality Rate</th>
<th>Readmission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Attack(^a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Failure</td>
<td>80%</td>
<td>9%</td>
<td>23%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>70%</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Surgical Care</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Color Codes:
- NC Top Quartile
- Second Quartile
- Third Quartile
- Lowest Quartile
- No Data

### Measure Benchmarks

<table>
<thead>
<tr>
<th>Measure Benchmark</th>
<th>NC 25th %-ile Score(^b)</th>
<th>NC 50th %-ile Score(^c)</th>
<th>NC 75th %-ile Score(^d)</th>
<th>National Rate</th>
<th>Measure Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, would recommend</td>
<td>64%</td>
<td>71%</td>
<td>77%</td>
<td>68%</td>
<td>4/08-3/09</td>
</tr>
<tr>
<td>Rating of 9 or 10</td>
<td>64%</td>
<td>68%</td>
<td>72%</td>
<td>64%</td>
<td>4/08-3/09</td>
</tr>
<tr>
<td>H.F. Optimal Care</td>
<td>76.3%</td>
<td>86.2%</td>
<td>92.7%</td>
<td>83%</td>
<td>4/09-9/09</td>
</tr>
<tr>
<td>H.F. Mortality Rate</td>
<td>11.7</td>
<td>10.9</td>
<td>10.1</td>
<td>11.1</td>
<td>7/05-6/08</td>
</tr>
<tr>
<td>H.F. Readmission Rate</td>
<td>25.4</td>
<td>24.4</td>
<td>23.2</td>
<td>24.5</td>
<td>7/05-6/8</td>
</tr>
<tr>
<td>AMI Optimal Care</td>
<td>90%</td>
<td>95.2%</td>
<td>98.4%</td>
<td>92%</td>
<td>4/09-9/09</td>
</tr>
<tr>
<td>AMI Mortality Rate</td>
<td>17.4</td>
<td>16.5</td>
<td>15.4</td>
<td>16.6</td>
<td>7/05-6/08</td>
</tr>
<tr>
<td>AMI Readmission</td>
<td>20.8</td>
<td>20.0</td>
<td>19.3</td>
<td>19.9</td>
<td>7/05-6/08</td>
</tr>
<tr>
<td>PN Optimal Care</td>
<td>80.9%</td>
<td>87.2%</td>
<td>91.5%</td>
<td>77%</td>
<td>4/09-9/09</td>
</tr>
<tr>
<td>PN Mortality Rate</td>
<td>13.4</td>
<td>11.9</td>
<td>11.0</td>
<td>11.5</td>
<td>7/05-6/08</td>
</tr>
<tr>
<td>PN Readmission Rate</td>
<td>19.7</td>
<td>18.7</td>
<td>17.5</td>
<td>18.2</td>
<td>7/05-6/08</td>
</tr>
<tr>
<td>SCIP8 Optimal Care</td>
<td>83.0%</td>
<td>89.4%</td>
<td>93.2%</td>
<td>85%</td>
<td>4/09-9/09</td>
</tr>
</tbody>
</table>

\(^a\) Heart Attack O.C. does not use Quartiles: Red for < 85%, yellow 85 to < 90%, green 90 to < 95%, and blue for 95% or better.

\(^b\) Hospitals with a score worse than this threshold fall in the lowest 4\(^{th}\) quartile.

\(^c\) Hospitals with a score equal to or better than the 25\(^{th}\) %-ile but worse than this threshold fall in the 3\(^{rd}\) quartile.

\(^d\) Hospitals with a score equal to or better than the 50\(^{th}\) %-ile but worse than the NC 75\(^{th}\) %-ile threshold fall in the 2\(^{nd}\) quartile.

A score equal to or better than the 75\(^{th}\) %-ile puts a hospital in the top, most favorable quartile.
NC Rural Hospital Performance Improvement Portfolio

- CMS Core Measures (inpatient & outpatient)
- Board Quality Curriculum
- 340B Drug Program
- AHRQ Culture of Patient Safety Survey
- HIT Strategic Plan
- Lean Culture Transformation Collaborative
- Quality Assessment Tool (HLQAT)
- Trauma, Cardiac and Stroke System Development
- Pediatric Emergency Care Pilot
- Community Paramedic Program
- Telehealth
Performance Improvement Primer

- Family and Patient Centered Care
- Design for Reliability (zero defect rates)
- Evidence-based Practice
- The Model for Improvement (PDSA)
- Rapid Cycle Improvement
- Collaborative Learning and Spreading Innovations
- Measurement and Segmentation (small tests of change, testing reliability)
- Leadership Framework for Improvement
- This is THE WORK of Healthcare Organizations and Professionals
Board Governance of Quality

• Board governance curriculum on the critical topic of **Improving Board Governance of Quality and Patient Safety**.
• Organized as a four to six-hour board retreat.
• designed to help hospital trustees understand, evaluate and improve their governance of quality by creating a board action plan.
• Quality Curriculum may be offered as a one-day board retreat or a two-day session.
• **Purpose:** To improve Board Governance of Quality for 30 small, rural NC hospitals.
• **Eligibility:** Small, rural hospitals and CAHs (rural hospitals less than 50 ADC)
AHRQ Culture of Patient Safety Survey

- The NC Center for Hospital Quality and Patient Safety has partnered with The Patient Safety Group to provide an electronic tool to administer this important measurement of culture.
- The AHRQ survey is easy to setup, simple to administer and the results are instant.
- Hospitals can benchmark results to the national AHRQ data.
- **Purpose:** All CAHs and small, rural hospitals (< 30 ADC) to perform AHRQ survey to guide quality and patient safety improvements.
- **Eligibility:** CAHs and small, rural hospitals (< 30 ADC).
HCAHPS

• A national, standardized survey instrument and data collection methodology for measuring patients’ perceptions of their hospital experience and their perspectives of care.

• **Purpose:** To ensure that all small, rural hospitals and CAHs collect, report and improve HCAHPS measures.

• **Eligibility:** All hospitals are eligible for technical assistance.

• **Outcomes:** 11 CAHs currently reporting HCAHPS measures.

• **Funding Source:** Assistance made possible through the NC Flex Grant.

• **Internet Resources:** [www.hcahpsonline.org](http://www.hcahpsonline.org)

• **To Enroll:** Complete an application for Flex Funding.

• **For Questions:** Matt Womble, NCORHCC (matt.womble@dhhs.nc.gov)
Medication Safety Project

- 29 SHIP-eligible hospitals joined together to form the NC Collaborative for Medication Safety (NCCMedS).
- The pilot began September 1, 2010, through August 31, 2011.
- **Purpose:** To collectively improve the safety of inpatient medication delivery.
- **Eligibility:** Only SHIP-eligible hospitals can participate at this time.
- **Expectations:** Hospitals voluntarily submit SHIP funding for the project and are expected to participate in the on-site consultation and engage the hospital and medical staff in the medication safety improvement effort.
Purpose: A state-wide effort to improve the system of care for patients who suffer from traumatic injury, myocardial infarctions and stroke.

Funding Source: Rural Trauma System Coordinator is funded 100% by the NC Flex Grant.

To Enroll: Express interest in participating in a community assessment to Matt Womble, NCORHCC.

For Questions: Beth Diaz, Rural Trauma System Coordinator with the NC Office of EMS: (Beth.Diaz@dhhs.nc.gov) or 919-855-3965.

General questions: Matt Womble, NCORHCC (matt.womble@dhhs.nc.gov)
Patient Centered Care

**Dignity and respect:** Health care providers listen to and honor patient perspective and choices.

**Information sharing:** Patients and their families receive information that is timely, accurate and understandable so that they can participate in decision making.

**Participation:** Patients and their families are encouraged and supported to participate in their care and decision making at the level they choose.

**Collaboration:** Patients are included in program and policy development.
Mission

To be an active partnership model spreading lean culture transformation across healthcare organizations in the Carolinas.

Goals

- To achieve successful lean culture transformations in early adopter, leadership hospitals and healthcare systems by 2011.
- To spread lean healthcare transformation to other hospitals and healthcare sectors.
Carolinas Lean Healthcare Roundtable

• Piloting a Rural Hospital Lean Transformation Collaborative engaging eleven rural hospitals in Eastern and Western NC.

• Three year collaborative to accomplish lean culture transformation.

• Partnering with rural hospitals, Simpler HealthcareSM and NC State University IES.

• There is power in Lean AND in Collaborative Learning.
Creating a Lean Collaborative

- Invited Lean Managed hospitals to NC to share their journey.

- Organized informal workshops and learning sessions to create dialogue among CEOs.

- Developed partners and learning relationships to guide development of Collaborative.
• Utilizes a funding collaborative, however ROI is clearly advantageous.

• Hospitals must commit their management team and leadership, plus invest in lean coordinators and managers.

• In the first year, the Collaborative accomplished 20+ Rapid Improvement Events for three rural hospitals.

• More than 35 Rapid Improvement Events are scheduled for Year 2 at five rural hospitals.
What Lean is …

- Lean is an approach that **enables** the true performance **potential** of a process or business to be realized.

- Lean achieves this through the fundamental use and applications of various **tools** to see waste and eliminate waste.

**Lean is an approach that enables Revolutionary Levels of Performance: 10%, 25%, 50%, 100%, 200% gains**
Carolinas Lean Healthcare Roundtable

Lean is …
- Human Resource Development
- Culture Transformation
- Aligning Strategy, Culture and Execution

Lean is NOT …
- Deploying Tools
- Cost Reduction
- Quick Fix
- Less People
Breakthrough Improvement Results

Think Half of Everything

- 50% less time
- 50% less steps
- 50% less waste
- 50% less handoffs
- 50% less errors
- 50% less inventory
- 50% less space
Understanding Value

From the Patient’s Point of View

Value Added: what the patient is willing to pay for --- activity that changes form, fit or function.

Non-Value Added: no added value based on the patient’s perspective.

Waste: what the patient is unwilling to pay us to do.
Collaborative Results

**The Simpler Solution >**

**Carolinas Lean Healthcare Roundtable**
- 5 Hospital Collaborative in Western NC
- Shared resources and funding for lean transformation
- 20 RIEs held at 3 hospitals during Year 1
- Solutions developed in value streams including: Surgical Services, the Emergency Department, InPatient Flow, Radiology/Imaging, and Revenue Cycle

**Spread**
Over 150 Employees from all 5 hospitals engaged in RIEs during Year 1 spreading specific implemented ideas plus lean learnings.

**Savings**
Total Savings (both "hard" and "soft") for the 3 active hospitals in Year 1 exceeds $2,554,000.
Collaborative Results

- $160K in ED supply charge recapture.
- Increased to 70% the proportion of pre-registered imaging patients.
- For ED patients: 35% reduction in laboratory turnaround time; 40% improvement in radiology process time; 50% improvement in time to initial treatment.
- 50% improvement for inpatient bed preparation time.
- 40% reduction in time for OR preparation.
Leadership for Improvement

Models and Principles

- Triple Aim
- Model for Improvement
- Leadership Framework
- Kotter Change Model
- Spread of Innovation
- Strategic Execution of Improvement
- Baldrige Framework
The Triple Aim

The Simultaneous Pursuit of Population Health, Enhanced Individual Care and Controlled Costs for a Population

- Improve Population Health
- Enhance Experience of Care
- Reduce Per Capita Cost
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population Health</strong></td>
<td>1. Health/Functional Status: single-question (e.g. from CDC HRQOL-4) or multi-domain (e.g. SF-12, EuroQol)</td>
</tr>
<tr>
<td></td>
<td>2. Risk Status: composite health risk appraisal (HRA) score</td>
</tr>
<tr>
<td></td>
<td>3. Disease Burden: Incidence (yearly rate of onset, avg. age of onset) and/or prevalence of major chronic conditions; summary of predictive model scores</td>
</tr>
<tr>
<td></td>
<td>4. Mortality: life expectancy; years of potential life lost; standardized mortality rates. <strong>Note:</strong> Healthy Life Expectancy (HLE) combines life expectancy and health status into a single measure, reflecting remaining years of life in good health. See <a href="http://reves.site.ined.fr/en/DFLE/definition/">http://reves.site.ined.fr/en/DFLE/definition/</a></td>
</tr>
<tr>
<td><strong>Patient Experience</strong></td>
<td>1. Standard questions from patient surveys, for example:</td>
</tr>
<tr>
<td></td>
<td>- Global questions from US CAHPS or How’s Your Health surveys</td>
</tr>
<tr>
<td></td>
<td>- Experience questions from NHS World Class Commissioning or CareQuality Commission</td>
</tr>
<tr>
<td></td>
<td>- Likelihood to recommend</td>
</tr>
<tr>
<td></td>
<td>2. Set of measures based on key dimensions (e.g., US IOM Quality Chasm aims: Safe, Effective, Timely, Efficient, Equitable and Patient-centered)</td>
</tr>
<tr>
<td><strong>Per Capita Cost</strong></td>
<td>1. Total cost per member of the population per month</td>
</tr>
<tr>
<td></td>
<td>2. Hospital and ED utilization rate</td>
</tr>
</tbody>
</table>
Determinants of health

- Environment
  - National economic strategy
- Education
- Agriculture and food
- Recreational and culture
- Eating habits
- Traffic
- Drugs
- Exercise
- Living situation
- Alcohol
- Social network
- Unemployment
  - Tobacco
  - Work environment
  - Social support
- Sex and peaseful Coexistence
  - Childrens contact with adults
  - Sleeping habits
  - Public Assistance
  - Health care
- Age
- Sex
- Heredity
Improve the Health of the Population

Public Health – Hospital Collaborative
  • Reduce Incidence of Obesity
  • Improve Tobacco Policy

Consistent, Transparent Health Measures
  • Healthy NC 2020 Objectives
    • Healthiest State in the Nation
  • MATCH/CATCH County Health Rankings

Collaborative Improvement Initiatives
  • Care Share Health Alliance
  • Safety Net Advisory Committee (SNAC)
  • Community Care North Carolina
Enhance Patient Experience of Care

Public Health – Hospital Collaborative
  • Center for Public Health Quality

NC Center for Hospital Quality and Patient Safety
  • Teamwork and communication
  • Just Culture
  • Process reliability
  • Collaborative learning

Consistent, Transparent Quality Measures
  • Improving Core Measures (95% reliability)
  • Reducing hospital readmissions
  • Eliminating avoidable hospital acquired infections
NC per Capita Health Expenditures

$5,227 Annually

Annual Spending, adjusted to 2004 dollars


$3,288

Medicaid
Medicare
Other, including Private
Total

Focused, measureable Aim Statement - **How Good by When?**
- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in an improvement?
Leadership for Improvement

Setting Direction: Mission, Vision and Strategy

PUSH → Changing the old

Making the future attractive

PULL

Will → Ideas → Execution

Establish the Foundation

North Carolina Hospital Association
Leading Improvement

1. Establish a **Sense of Urgency**
2. Form a Powerful Guiding Coalition
3. Create a Vision
4. Communicate the Vision
5. Empower Others to Act on the Vision
6. Plan and Create Short-Term Wins
7. Consolidate Improvements and Produce More Change
8. Institutionalize the New Approaches

*From: John Kotter, *Leading Change*
Kotter’s 8 Stages of Change (middle) and Associated Pitfalls (sides)

1. Establish a sense of urgency
   - Weak teamwork at the top

2. Form a powerful guiding coalition
   - Marginalizing senior line management

3. Create a vision
   - Under-communicating the vision

4. Communicate the vision
   - Behaving inconsistently with vision

5. Empower others to act on the vision
   - Ignoring importance of short-term wins

6. Plan for and create short-term wins
   - Failure to secure short-term wins

7. Consolidate improvements and produce more change
   - Not creating new social norms and shared values

8. Institutionalize new approaches
   - Promoting leaders who don’t personify the new approach

- Not driving people from their comfort zones
- Becoming paralyzed by risks
- Creating a vision that is too complicated or vague
- Failure to remove powerful individuals who actively resist the change
- Declaring victory too soon
- Allowing resistors to convince participants that the change effort is complete
Performance Improvement Primer

The Concepts of Innovation, Diffusion and Spread

Spread is the Diffusion of Innovation
Spread Model
The Nature of People (Everett Rogers)

- Innovators: 2%
- Early Adopters: 13%
- Early Majority: 35%
- Pragmatists
- Late Majority: 35%
- Conservatives: 35%
- Traditionalists: 15%
### Rural Hospital Engagement Model

<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Discharges</th>
<th>Total Days</th>
<th>ALOS</th>
<th>ADC (calc)</th>
<th>System Relationship</th>
<th>S/R, CAH Core Measures</th>
<th>HIT Strategic Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our Community Hospital</td>
<td>23</td>
<td>52</td>
<td>2.3</td>
<td>0.1</td>
<td>Halifax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blowing Rock Hospital</td>
<td>167</td>
<td>629</td>
<td>3.8</td>
<td>1.7</td>
<td>Appalachian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stokes-Reynolds Memorial Hospital</td>
<td>213</td>
<td>842</td>
<td>4</td>
<td>2.3</td>
<td>Baptist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highlands-Cashiers Hospital</td>
<td>300</td>
<td>919</td>
<td>3.1</td>
<td>3.5</td>
<td></td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Hoots Memorial Hospital</td>
<td>203</td>
<td>1,100</td>
<td>5.4</td>
<td>3.0</td>
<td>HMC</td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Davie County Hospital</td>
<td>463</td>
<td>1,421</td>
<td>3.1</td>
<td>3.9</td>
<td>Baptist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berte Memorial Hospital</td>
<td>433</td>
<td>1,578</td>
<td>3.6</td>
<td>4.3</td>
<td>UHS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swain County Hospital</td>
<td>727</td>
<td>1,607</td>
<td>2.2</td>
<td>4.4</td>
<td>Westcare/CHS</td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>First Health Montgomery Hospital</td>
<td>603</td>
<td>1,835</td>
<td>3</td>
<td>5.0</td>
<td>FirstHealth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washington County Hospital</td>
<td>531</td>
<td>1,849</td>
<td>3.5</td>
<td>5.1</td>
<td>HMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punco District Hospital</td>
<td>755</td>
<td>2,259</td>
<td>3</td>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alleghany Memorial Hospital</td>
<td>849</td>
<td>2,788</td>
<td>3.3</td>
<td>7.6</td>
<td>Quorum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pender Memorial Hospital</td>
<td>806</td>
<td>2,986</td>
<td>3.7</td>
<td>8.2</td>
<td>New Hanover</td>
<td>CCHA</td>
<td></td>
</tr>
<tr>
<td>Chatham Hospital</td>
<td>888</td>
<td>3,342</td>
<td>3.8</td>
<td>9.1</td>
<td>UNC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saint Luke's Hospital</td>
<td>1,041</td>
<td>3,522</td>
<td>3.4</td>
<td>9.6</td>
<td>CHS</td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Anson County Hospital</td>
<td>1,014</td>
<td>4,166</td>
<td>4.1</td>
<td>11.4</td>
<td>CHS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladen County Hospital</td>
<td>1,407</td>
<td>4,312</td>
<td>3.1</td>
<td>11.8</td>
<td>Cape Fear</td>
<td>CCHA</td>
<td></td>
</tr>
<tr>
<td>Outer Banks Hospital</td>
<td>1,832</td>
<td>4,333</td>
<td>2.4</td>
<td>11.8</td>
<td>UHS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Arthur Doshier Memorial Hospital</td>
<td>1,378</td>
<td>4,630</td>
<td>3.4</td>
<td>12.7</td>
<td>New Hanover</td>
<td>CCHA</td>
<td></td>
</tr>
<tr>
<td>Ashe Memorial Hospital</td>
<td>1,586</td>
<td>5,397</td>
<td>3.4</td>
<td>14.7</td>
<td>Quorum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angel Medical Center</td>
<td>1,688</td>
<td>6,089</td>
<td>3.6</td>
<td>16.6</td>
<td></td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Transylvania Regional Hospital</td>
<td>1,858</td>
<td>6,133</td>
<td>3.2</td>
<td>16.8</td>
<td></td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Charles A. Cannon Jr. Memorial Hospital</td>
<td>1,805</td>
<td>6,660</td>
<td>3.7</td>
<td>18.2</td>
<td>Appalachian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The McDowell Hospital</td>
<td>2,108</td>
<td>6,816</td>
<td>3.2</td>
<td>18.6</td>
<td>Mission</td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Blue Ridge Regional Hospital(Spruce Pin)</td>
<td>2,322</td>
<td>6,922</td>
<td>3</td>
<td>18.9</td>
<td>Mission</td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Chowan Hospital</td>
<td>2,347</td>
<td>7,651</td>
<td>3.3</td>
<td>20.9</td>
<td>UHS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin General Hospital</td>
<td>2,443</td>
<td>8,099</td>
<td>3.3</td>
<td>22.1</td>
<td>Community HS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Granville Medical Center</td>
<td>2,596</td>
<td>8,751</td>
<td>3.4</td>
<td>23.9</td>
<td></td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Murphy Medical Center</td>
<td>2,583</td>
<td>8,801</td>
<td>3.4</td>
<td>24.0</td>
<td></td>
<td>WNCHN</td>
<td></td>
</tr>
<tr>
<td>Sampson County Memorial Hospital</td>
<td>3,174</td>
<td>9,610</td>
<td>3</td>
<td>26.3</td>
<td>CCHA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person County Memorial Hospital</td>
<td>2,595</td>
<td>9,937</td>
<td>3.8</td>
<td>27.2</td>
<td>Duke</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Measuring Engagement and Spread

### Rural Hospital Engagement Model

<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Board Quality Curriculum</th>
<th>Lean Culture Collaborative</th>
<th>340B</th>
<th>AHRQ Culture of Patient Safety Survey</th>
<th>HLOAT</th>
<th>HCAHPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest Priority (31)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our Community Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blowing Rock Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stokes-Reynolds Memorial Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highlands-Cashiers Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoots Memorial Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Davie County Hospital</td>
<td>QC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bertie Memorial Hospital</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swain County Hospital</td>
<td>QC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Health Montgomery Hospital</td>
<td>QC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washington County Hospital</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pungo District Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alleghany Memorial Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penter Memorial Hospital</td>
<td>QC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chatham Hospital</td>
<td>QC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saint Luke’s Hospital</td>
<td>QC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anson County Hospital</td>
<td>QC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladen County Hospital</td>
<td>ENC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer Banks Hospital</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Arthur Dosher Memorial Hospital</td>
<td>ENC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ashe Memorial Hospital</td>
<td>X</td>
<td>WNC</td>
<td>QC</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Angel Medical Center</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transylvania Regional Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charles A. Cannon Jr. Memorial Hospital</td>
<td>WNC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The McDowell Hospital</td>
<td>WNC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue Ridge Regional Hospital(Spruce Pin)</td>
<td>WNC</td>
<td>X</td>
<td>QC</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Chowah Hospital</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin General Hospital</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Granville Medical Center</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murphy Medical Center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sampson County Memorial Hospital</td>
<td>ENC</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person County Memorial Hospital</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Leadership**
- **Engagement**
- **Outcomes**
Execution of Strategic Improvement

1. Setting Priorities and Breakthrough Performance Goals

2. Developing a Portfolio of Projects to Support the Goals

3. Deploying Resources to the Projects That Are Appropriate for the Aim

4. Establishing an Oversight and Learning System to Increase the Chance of Producing the Desired Change

*Execution of Strategic Improvement Initiatives*

IHI White Paper
Baldrige Criteria for Performance Excellence Framework
A Systems Perspective

1. Leadership
2. Strategic Planning
3. Customer Focus
4. Measurement, Analysis, and Knowledge Management
5. Workforce Focus
6. Process Management
7. Results

Organizational Profile:
Environment, Relationships, and Challenges
The Math of Improvement

Breakthrough Performance = Culture Transformation

Improvement = Measurement

Transparency = Accountability

Quality Improvement = Performance Improvement

Value = (Reliability + Service + Quality) / Cost
A process achieves exactly the results it is designed to achieve.
Of the three major approaches to improving patient safety - regulation/accreditation, financial incentives, and public reporting - the most promising is public reporting of performance information and feedback to providers.
From the standpoint of improving patient safety .... transparency is crucial. It is the cornerstone of the cultural transformation that our health care organizations need to undergo to become safe. Transparency is essential within an institution if caregivers are to feel safe in reporting and talking about their mistakes. The free flow of information is essential for identifying and correcting the underlying systems failures. Transparency is also the key to successful—and ethical—responses to patients when things go wrong. And transparency is essential for accountability, to show the public that the hospital or system responds ethically to its failures. Internal transparency begets external transparency — and vice-versa.
When hospitals’ quality data is reported publicly...

- Performance improves (for the measures being reported).
- Market share doesn’t change appreciably.
- Reputation improves considerably.

Hibbard J, J Stockard, and M Tusler: *Hospital performance reports: impact on quality, market share, and reputation.* Health Affairs 2005, 24, #4: 1150-116025
# Levels of Reliability in Health Care

(Amalberti, Nolan)

<table>
<thead>
<tr>
<th>Chaos</th>
<th>$10^{-1}$</th>
<th>$10^{-2}$</th>
<th>$10^{-3}$</th>
<th>$10^{-5}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processes are largely custom-crafted each time</td>
<td><strong>Standard process, checklists, training, trying hard</strong></td>
<td><strong>Standard process; redundancy, habits and patterns</strong></td>
<td>Obsession with Failure: Prevent Mitigate Redesign</td>
<td>Loss of identity</td>
</tr>
<tr>
<td>Each doctor writes individual orders, gives to RN</td>
<td>Standing orders, feedback on compliance</td>
<td>All MDs use same process, multi-disc. rounds</td>
<td>External approval necessary for certain orders</td>
<td>Equivalent actor</td>
</tr>
<tr>
<td>Preventing, treating acute and chronic disease in US</td>
<td>Typical hospital working hard</td>
<td>Best hospitals Core Measures</td>
<td>ADEs per 1000 doses in best hospitals</td>
<td>Safety in anesthesia</td>
</tr>
</tbody>
</table>
### Concentrate Your Work Here!

<table>
<thead>
<tr>
<th>Chaos</th>
<th>$10^{-1}$</th>
<th>$10^{-2}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processes are largely custom-crafted each time</td>
<td>Standard process, checklists, training, trying hard</td>
<td>Standard process; redundancy, habits and patterns</td>
</tr>
<tr>
<td>Each doctor writes individual orders, gives to RN</td>
<td>Standing orders, feedback on compliance</td>
<td>All MDs use same process, multi-disc. rounds</td>
</tr>
<tr>
<td>Preventing, treating acute and chronic disease in US</td>
<td>Typical hospital working hard</td>
<td>Best hospitals in Core Measures</td>
</tr>
</tbody>
</table>
Definitions of Reliability

Reliability is failure free operation over time.

*David Garvin, Harvard*

Choose the patient focus, who expects optimal care by all-or-none measures.

*IHI Innovation Team*
Starting Labels of Reliability

- **Chaotic process**: Failure in greater than 20% of opportunities

- **10^-1**: 80 or 90 percent success. 1 or 2 failures out of 10 opportunities

- **10^-2**: 5 failures or less out of 100 opportunities

- These are IHI definitions and are not meant to be the true mathematical equivalent.
Leadership for Breakthrough Performance

- NC CAH and Small Rural Hospital Performance Improvement Portfolio
- NC Rural Hospital Lean Transformation Collaborative
- Leadership for Improvement: Models and Principles
- Observations and Lessons Learned
Opportunity is missed by most people because it is dressed in overalls and looks like work.

Thomas A. Edison
Quality Leadership Summit

Achieving Breakthrough Performance in Rural Health Quality

December 2010

Jeff Spade, FACHE
Executive Director, NC Center for Rural Health Innovation and Performance
Vice President, NCHA
jspade@ncha.org
Triple Aim Strategic Model

How Good by When?

Enhance Experience of Care

Improve Population Health

Critical Elements
1. Model Integrator
2. A Defined Population

Reduce Per Capita Cost