Better Care at Lower Cost for Medicaid: What Will It Take

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Neither I, Brent C. James, nor any family members, have any relevant financial relationships to be discussed, directly or indirectly, referred to or illustrated with or without recognition within the presentation. I have no financial relationships beyond my employment at Intermountain Healthcare.
The emergence of modern medicine

~1860 - 1910:

- **new high standards for clinical education**
  - Flexner Report: more than half of all U.S. "medical schools" shut down
  - new model: hospital-based 2 year course of study (integrated clinical exposure)

- **strict requirements for professional licensing**

- **clinical practice founded on scientific research**
  - shift to germ theory, rather than "an imbalance of the 4 bodily humors," as the basis for understanding disease and its treatment
  - health care's first entry into "evidence-based medicine"

- **new internal organization for hospitals**


"We routinely achieve miracles"

Since 1960, 6.97 years gained over 4 decades = 1.74 years / decade
(from 1900-1960, 20.7 years gained over 6 decades = 3.45 years / decade)

Current health care

_is the best the world has ever seen_

A few simple examples:

- **From 1900 to 2000, average life expectancy at birth increased from only 49 years to almost 77 years.**

- **Since 1960, age-adjusted mortality from heart disease (#1) has decreased by 56%; and** (from 307.4 to 134.6 deaths / 100,000)

- **Since 1950, age-adjusted mortality from stroke (#3) has decreased by 70%.** (from 88.8 to 26.5 deaths / 100,000)

Initial life expectancy gains almost all resulted from public health initiatives -- clean water, safe food, and (especially) widespread control of epidemic infectious disease. But since about 1960, direct disease treatment has made increasingly large contributions.


Today's problems are often yesterday's solutions.

(We can't solve problems using the same kind of thinking we used when we created them)

Albert Einstein

He that will not apply new remedies must expect new evils; for time is the greatest innovator.

Francis Bacon (1561 - 1626); in Essays (1625), Of Innovations

Whom the gods will destroy, they first make proud send 100 years of success.

(Peter Drucker, drawing from Oedipus Rex, on the state of U.S. health care delivery)
The opportunity (care falls short of its theoretic potential)

1. Well-documented, massive, variation in practices (beyond the level where it is even remotely possible that all patients are receiving good care)

2. High rates of inappropriate care

3. Unacceptable rates of preventable care-associated patient injury and death

4. A striking inability to "do what we know works"

5. Huge amounts of waste leading to spiraling prices that limit access (46.6 million uninsured Americans)
50+% of all resource expenditures in hospitals is quality-associated waste:

- recovering from preventable foul-ups
- building unusable products
- providing unnecessary treatments
- simple inefficiency
By layering on future obligations, the total net present value (PV) of debt rises to over $60 trillion -- about $195,000 for every man, woman and child in the U.S. More than two-thirds of the shortfall arises from health care delivery.

The Fiscal Gap (unfunded federal obligations - 2009)

Unfunded obligations

- Social Security: $7.7 trillion
- Medicare: $38.1 trillion

Total National Debt: $14.1 trillion

- Stimulus: $862 billion
- National Defense: $714 billion
- TARP: $700 billion
Health care payments will be cut
Three proposed approaches:

Democrats: price controls (a.k.a. single payer)

Republicans: market forces at physician-patient level

QI: improve productivity (i.e., eliminate waste)
We have found proven solutions

Dr. Alan Morris, LDS Hospital, 1991:

- **NIH-funded randomized controlled trial** assessing an "artifical lung" vs. standard ventilator management for acute respiratory distress syndrome (ARDS)

- **discovered large variations in ventilator settings across and within expert pulmonologists**

- **created a protocol** for ventilator settings in the control arm of the trial
Problems with "best care" protocols

- **Lack of evidence for best practice**
  - Level 1, 2, or 3 evidence available only about 15-25% of the time

- **Expert consensus is unreliable**
  - experts can't accurately estimate rates using subjective recall (produce guesses that range from 0 to 100%, with no discernable pattern of response)
  - what you get depends on whom you invite (specialty level, individual level)

- **Guidelines don't guide practice**
  - systems that rely on human memory execute correctly ~50% of the time (McGlynn: 55% for adults, 46% for children)

- No two patients are the same; therefore, no guideline perfectly fits any patient (with very rare exception)
Solution: A Lean "learning system"

Dr. Alan Morris, LDS Hospital, 1991:

- NIH-funded randomized controlled trial assessing an "artificial lung" vs. standard ventilator management for acute respiratory distress syndrome (ARDS)
- discovered large variations in ventilator settings across and within expert pulmonologists
- created a protocol for ventilator settings in the control arm of the trial
- Implemented the protocol using Lean principles (Womack et al., 1990 - The Machine That Changed the World)
  - built into clinical workflows - automatic unless modified
  - clinicians encouraged to vary based on patient need
  - variances and patient outcomes fed back in a learning loop
1. Identify a high-priority clinical process *(key process analysis)*

2. Build an evidence-based best practice protocol *(always imperfect: poor evidence, unreliable consensus)*

3. Blend it into clinical workflow *(don't rely on human memory; make it the lowest energy state, default choice that happens automatically unless someone intervenes)*

4. Embed data systems to track *(1) protocol variations and (2) short and long term patient results* *(intermediate and final clinical, cost, and satisfaction outcomes)*

5. Demand that clinicians vary based on patient need

6. Feed data back *(variations, outcomes) in a learning loop* - continuously update and improve the protocol *(including gauge theory)*
ARDS Protocol Compliance

% Protocol Instructions Followed vs ARDS Patient Number

Graph showing the percentage of protocol instructions followed for each ARDS patient number.
Results:

- survival (for ECMO entry criteria patients) improved from 9.5% to 44% 
- costs fell by ~25% (from $160k to $120k) 
- physician time fell by ~50%

Dr. Alan Morris, LDS Hospital, 1991
1. **No protocol perfectly fits any patient**
   - **solution**: Shared Baseline "bundles"
     
     (mass customization = "patient centered care")

2. **Serious limitations to protocol development**
   - **solution**: a Learning System (embedded variance and outcomes tracking; continuous protocol review and tested improvement)

3. **Reliance on human memory** (craft of medicine) produces "55% execution"
   - **solution**: tools to embed protocols in workflows

4. Only two differences from traditional practice: **It requires** (1) **coordinated teams with** (2) **reliable data systems**
Within the healing professions

there is nothing new here ...

except the idea that

"it takes a team"
Poor HbA1c control

% diabetic patients with HgA1c > 9

(All patients)
Complex diabetes patients - mortality rates

CPM with clinic care managers
CPM with clinic care managers

Complex diabetes patients - hospitalization rates

- Control
- Care management

1 year:
- Control: 26%
- Care management: 21%

2 years:
- Control: 39%
- Care management: 31%
Physician productivity (WRVUs - work relative value units)

Physicians with embedded care management support were significantly (8%) more productive than controls.
<table>
<thead>
<tr>
<th>Provider Name (Provider ID) - Clinic Name</th>
<th>Total SelectHealth Patients: 21</th>
<th>14 Patients That Need Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>SelectHealth Incentive Benchmark Goals:</td>
<td>SelectHealth Current Diabetes Performance:</td>
<td>50% to 90%</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>Date</td>
<td>BP &lt;=130/80</td>
</tr>
</tbody>
</table>

Administrative (HEDIS) criteria for diabetes (at least 2 face-to-face contacts in an outpatient facility and an ICD-9-CM code 250.xx; or at least 1 inpatient stay and an ICD-9-CM code 250.xx; or at least 1 prescription for insulin or an oral hypoglycemic agent) in the current measurement period or prior measurement periods.

* Indicates a new patient on the list from last reporting period.

** Avg B/P measure is an average of the last three EMR recorded blood pressure results from home or clinic. Blood pressure data only available for physicians with access to Intermountain EMR.

† Indicates a patient that has been noted in the EMR as having an in-control blood pressure within the last six months.

‡ Indicates a SelectHealth patient who has a pharmacy benefit, is over 40 years old with an LDL test above 100, and is not on a lipid lowering medication.

⊥ Indicates a SelectHealth patient who has a pharmacy benefit, a positive microalbuminuria test and is not on ACEI or ARB medication.
Problems and chronic conditions

Medication profile

Preventive care summary

Pertinent labs

Pertinent exams

Passive reminders organized by illness

General patient status information

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**Problems and chronic conditions**

**Medication profile**

**Preventive care summary**

**Pertinent labs**

**Pertinent exams**

**Passive reminders organized by illness**

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**General patient status information**

**Disease specific information**
Diabetes Summary Report
Provider: Towner, Steven (168)
Period: Oct 2008 - Sep 2009

Patients Tested (Prop of Tot Pts%) - All Patients

<table>
<thead>
<tr>
<th>Test</th>
<th>Provider</th>
<th>Region</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c</td>
<td>234(96%)</td>
<td>1,787(94%)</td>
<td>38,127(85%)</td>
</tr>
<tr>
<td>LDL</td>
<td>215(88%)</td>
<td>1,542(87%)</td>
<td>31,764(71%)</td>
</tr>
<tr>
<td>Eye Exam</td>
<td>37(70%)</td>
<td>182(52%)</td>
<td>5,448(39%)</td>
</tr>
<tr>
<td>Microalbuminuria</td>
<td>203(83%)</td>
<td>1,468(77%)</td>
<td>25,157(56%)</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>243(100%)</td>
<td>1,870(99%)</td>
<td>29,655(94%)</td>
</tr>
<tr>
<td>Total Patients</td>
<td>244</td>
<td>1,897</td>
<td>44,705</td>
</tr>
</tbody>
</table>

1. LDL measures represent two years ending in the closed period. 2. Eye exam % calculated using SelectHealth patients only. 3. Includes spot microalbumin, 24 hour urine for protein and microalbumin/creatinine ratio within the reporting period, or any history of treatment for nephropathy. 4. Measure is an average of the last three EMR recorded blood pressure results from home or clinic. Blood pressure data only available for physicians with access to Intermountain EMR.

Confidential: This material is prepared pursuant to Utah Code Ann. 26-25-1 et. Seq. or Idaho Code Ann. 39-1392 et seq. for improvement of the quality of hospital and medical care rendered by hospitals or physicians.
## Intermountain Primary Care Clinical Programs: Adult Diabetes Medical Director Summary Report

**Reporting Period:** 01-Jul-08 To 30-Jun-09

### Family Medicine

<table>
<thead>
<tr>
<th>Clinic Location</th>
<th>Diabetes Patient Count</th>
<th>Hemoglobin A1c Summary: 12 Months</th>
<th>LDL Summary: 12 Months</th>
<th>Blood Pressure:</th>
<th>MA:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tested</td>
<td>Tested, result NA</td>
<td>Percentages based on only those with available A1c results</td>
<td>Tested</td>
</tr>
<tr>
<td>SelectHealth</td>
<td>98</td>
<td>88(90%)</td>
<td>1 (1%)</td>
<td>40 (46%)</td>
<td>26 (30%)</td>
</tr>
<tr>
<td>All Other Payers</td>
<td>209</td>
<td>184 (88%)</td>
<td>4 (2%)</td>
<td>94 (52%)</td>
<td>29 (16%)</td>
</tr>
<tr>
<td>Combined</td>
<td>307</td>
<td>272 (89%)</td>
<td>5 (2%)</td>
<td>134 (50%)</td>
<td>55 (21%)</td>
</tr>
</tbody>
</table>

### Internal Medicine

<table>
<thead>
<tr>
<th>Clinic Location</th>
<th>Diabetes Patient Count</th>
<th>Hemoglobin A1c Summary: 12 Months</th>
<th>LDL Summary: 12 Months</th>
<th>Blood Pressure:</th>
<th>MA:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tested</td>
<td>Tested, result NA</td>
<td>Percentages based on only those with available A1c results</td>
<td>Tested</td>
</tr>
<tr>
<td>SelectHealth</td>
<td>48</td>
<td>48 (100%)</td>
<td>0 (0%)</td>
<td>31 (65%)</td>
<td>6 (13%)</td>
</tr>
<tr>
<td>All Other Payers</td>
<td>247</td>
<td>240 (97%)</td>
<td>0 (0%)</td>
<td>101 (67%)</td>
<td>49 (20%)</td>
</tr>
<tr>
<td>Combined</td>
<td>295</td>
<td>288 (98%)</td>
<td>0 (0%)</td>
<td>192 (67%)</td>
<td>55 (19%)</td>
</tr>
</tbody>
</table>

### Medical Director Summary:

<table>
<thead>
<tr>
<th>Clinic Location</th>
<th>Diabetes Patient Count</th>
<th>Hemoglobin A1c Summary: 12 Months</th>
<th>LDL Summary: 12 Months</th>
<th>Blood Pressure:</th>
<th>MA:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tested</td>
<td>Tested, result NA</td>
<td>Percentages based on only those with available A1c results</td>
<td>Tested</td>
</tr>
<tr>
<td>SelectHealth</td>
<td>146</td>
<td>138 (93%)</td>
<td>1 (1%)</td>
<td>71 (53%)</td>
<td>32 (24%)</td>
</tr>
<tr>
<td>All Other Payers</td>
<td>456</td>
<td>424 (93%)</td>
<td>4 (1%)</td>
<td>255 (61%)</td>
<td>78 (19%)</td>
</tr>
<tr>
<td>Combined</td>
<td>602</td>
<td>560 (93%)</td>
<td>5 (1%)</td>
<td>326 (59%)</td>
<td>110 (20%)</td>
</tr>
</tbody>
</table>
1.) Diabetes, HbA1c Testing
The percent of patients with diabetes who had a HbA1c test within the last 12 months.
Your Achievement: 78%
System Goal: 80%
Managed Care Incentive Goal: 85%
Your Score in this area is: 0%

2.) Diabetes, LDL Testing
The percent of patients with diabetes who had a LDL test within the last 24 months.
Your Achievement: 94%
System Goal: 80%
Managed Care Incentive Goal: 85%
Your Score in this area is: 100%

3.) Urine Microalbuminuria Screen
Number of patients with diagnosis of diabetes who had appropriate urine screen in last 12 months.
Your Achievement: 72%
Goal: 55%
Managed Care Incentive Goal: 87%
Your Score in this area is: 100%

4.) Asthma Care
Percent of patients in your Internal Medicine Group with "higher risk asthma" who filled at least one prescription for a controller in the last year.
Your Group Achievement: 94%
Goal: 82%
Managed Care Incentive Goal: 87%
Your Score in this area is: 100%

5.) Clinical Learning Day
Your Score in this area is: 100%

Attended a Clinical Learning Day Program in 2003 or 2004

Managed Care Incentive Summary
Your total score is computed using the following weighting:
- 25% from Item 1 Diabetes (HbA1c Testing)
- 25% from Item 2 Diabetes (LDL Testing)
- 10% from Item 3 Urine Microalbuminuria Screen
- 15% from Item 4 Asthma Care
- 25% from Item 5 Attend Clinical Learning Day

Your Total Managed Care Incentive Score is: 75%
Of the 4 measurement tools shown, which was most effective in driving change?

1. **Action lists** (tools to move from episodic to continuous care)

2. **Patient worksheets** (targets of opportunity - embedded, evidence based reminders at every point of contact)

3. **Comparative outcomes** (what is possible, who to ask)

4. **Financial incentives** (see: Drive by Daniel Pink; intrinsic vs extrinsic motivators)
The best tools blend into the background (workflow) so smoothly that the clinicians using them never even notice that they are there ... they format the clinical environment to "make it easy to do it right."

A leader is best when people barely knows he exists, when the work is done and his aim fulfilled, they will say: we did it ourselves. 

Tao te Ching, Lao Tzu, 5th century BCE
Sepsis bundle compliance

% compliance

07 Jan  Mar  May  Jul  Sep  Nov  08 Jan  Mar  May  Jul  Sep  Nov  09 Jan  Mar  May  Jul  Sep  Nov  10 Jan  Mar

Month

ER bundle  ICU bundle  All components
Sepsis mortality - ER-ICU transfers

125+ fewer inpatient deaths per year

Month

Mortality rate

n=
Lesson 1

We count our successes in lives ...
Lesson 2

Very often, better care is cheaper care ...
**Aligning financial incentives**

- **Neonates > 33 weeks gestational age who develop respiratory distress syndrome**
  - Treat at birth hospital with nasal CPAP *(prevents alveolar collapse)*, oxygen, +/- surfactant

- **Transport to NICU declines from 78% to 18%.

- **Financial impact** *(NOI; ~110 patients per year; raw $):*

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birth hospital</strong></td>
<td>84,244</td>
<td>553,479</td>
<td>469,235</td>
</tr>
<tr>
<td><strong>Transport (staff only)</strong></td>
<td>22,199</td>
<td>- 27,222</td>
<td>- 49,421</td>
</tr>
<tr>
<td><strong>Tertiary (NICU) hospital</strong></td>
<td>958,467</td>
<td>209,829</td>
<td>-748,638</td>
</tr>
<tr>
<td><strong>Delivery system total</strong></td>
<td>1,064,910</td>
<td>736,086</td>
<td>-328,824</td>
</tr>
<tr>
<td><strong>Integrated health plan</strong></td>
<td>900,599</td>
<td>512,120</td>
<td>388,479</td>
</tr>
<tr>
<td><strong>Medicaid</strong></td>
<td>652,103</td>
<td>373,735</td>
<td>278,368</td>
</tr>
<tr>
<td><strong>Other commercial payers</strong></td>
<td>429,101</td>
<td>223,215</td>
<td>205,886</td>
</tr>
<tr>
<td><strong>Payer total</strong></td>
<td>1,981,803</td>
<td>1,109,070</td>
<td>872,733</td>
</tr>
</tbody>
</table>
Current payment mechanisms

- **Actively incent overutilization**: do more, get paid more - even when there is no health benefit

- **I am paid to harm my patients** (paid more for complications)

- **Actively disincent innovation that reduces costs through better quality** (a key success factor for the rest of the U.S. economy)

- **Very strong, deep, wide evidence showing exactly this effect throughout U.S. healthcare**
Bending the cost curve

% Gross Domestic Product

Total $ per US citizen (thousands)


0 5 10 15 20

2,281 4,729 3,762 6,683 9,173 12,357

0 5 10 15 20

148 357 1,106 2,281 3,762 4,729 6,683 9,173 12,357

0 5 10 15 20

148 357 1,106 2,281 3,762 4,729 6,683 9,173 12,357
Capitation makes a comeback

1. ACOs, AMHs, bundled payment, shared savings, pay for value: sophisticated forms of capitation
   - provider at (financial) risk ... but with far better data systems for (1) quality measurement and (2) risk adjustment

2. Represent "managed care at the bedside"
   - ask clinical teams at the bedside to manage the care, not distant and disengaged insurance companies

3. More than 80% of cost saving opportunities live on the clinical side; 70+% of clinical improvement activities reduce costs by freeing up care delivery capacity (technically, "fixed cost leverage").
Intermountain's answer:

A Shared Accountability Organization:

Physicians, hospitals, payers, and patients

with aligned professional and financial incentives to seek

the best medical result at the lowest necessary cost
Some key elements:

- **Pay first dollar, not last dollar** *(defined contribution, not defined benefit; reference payment)*

- **Whoever makes the consumption decision bears the** *(appropriate) financial consequences* *(patients and physicians have skin in the game)*

- **No incentive to risk-select patients** *(community-rated premiums, but risk-adjusted capitation payments)*

- **Levers:** **No incentives to overtreat or undertreat**

  - Payments targeted at break-even, most efficient cost of operations; all upside $$ contained in shared savings

- **Hitting measured quality thresholds a prerequisite to participate in shared savings**

- **Involve employed and affiliated physician groups via partner health plans**
Two complementary forces

1. Massive downward pressure on payments

2. Pending huge increases in demand for our services
   - shifting demographics (the Baby Boom enters its chronic disease years)
   - "behavioral" epidemics (e.g., obesity)
   - continued advances in technology which drive demand higher
   - system capacity (workforce, hospital beds) can't keep up

Create additional capacity within existing workforce/facility structure by eliminating waste and improving productivity.
Process management is the key

- higher quality drives lower costs
- under capitation, all of the savings come back to clinical process managers
- more than half of all cost savings will take the form of unused capacity (fixed costs: empty hospital beds, empty clinic patient appointments, and reduced procedure, imaging, and testing rates)

- balanced by increasing demand (Baby Boom; obesity; community growth; technological advances; may still require some capacity management / reduction)

- major financial model shift, from revenue enhancement to cost control

- key difference: it takes a team
Better has no limit ...

an old Yiddish proverb