Dr. O’Brien has declared no conflicts of interest related to the content of his presentation.
Maximizing Value in the ICU – Driving and Measuring Change

NAMDRC 36th Annual Meeting and Educational Conference

Jim O’Brien, MD, MSc
Medical Director, Quality & Patient Safety
jobrien4@ohiohealth.com
Disclosures, 2004 – February 2013

• University grant monies:
  – Davis/Bremer Medical Research Award ($50K, 3/05 – 2/07)

• Non-industry grant monies:
  – NHLBI K23 HL075076 ($520,992, 4/05 – 3/09)
  – NIH Clinical Research Loan Repayment Program ($152,781, 10/03-6/05, 7/06-6/10)
  – NIA 1R01AG035117 ($200,722, 3/11 – 2/16)
  – NHLBI 1U01HL102547 ($250,182, 7/11 – 6/16)
  – NPSF ($100,000, 7/11 – 6/13)

• Industry grant monies:
  – PI for aerosolized amikacin (Aerogen, $0, 8/05 – 6/06)
  – PI for calfactant (Pneuma, $0, 9/08 – current)

• Consultant/Speakers’ Bureau:
  – Unrestricted educational grant from Lilly to present talk at SCCM (2005)
  – Consultant to Medical Simulation Corporation ($4000, 2005-2006)
  – Co-author on manuscript with Lilly employees
  – Consultant to Keimar, Inc ($0)
  – Board of Directors, Sepsis Alliance
  – Executive Board, Global Sepsis Alliance, World Sepsis Day

• Honoraria to Sepsis Alliance (Travel/accomodations may have been provided)
  – Lecture on future perspectives on sepsis definitions (Brahms, 2009).
  – Lecture on sepsis treatment (GE, 2011)
  – Video on sepsis communication (GE, 2011)
  – Webinar on sepsis (Siemens, 2011)
Disclosures, 2004 – February 2013

- People in healthcare are well-intentioned
- People in healthcare are smart, talented and caring
- Meaning in our work has more value than money

“Talented, well-meaning people in healthcare go off to work every day intending to provide the best care possible and must, on their way home, admit they failed.”

-Ron Daniels
Learning Outcomes Model

The Individual

- Well-Tuned Learning Orientation
- Mental Models
- Analogical Reasoning

Experiences

- Challenging
- Emotionally Charged
- Mistakes or Errors

Environment

- Skilled Mentors
- Evidence Based Medicine
- Products and Protocols

Improved Patient Outcomes

Adapted from Zigmont et al. Sem in Perinatology 2011
“Quality is never an accident. Quality is always the result of intelligent effort. It begins with the intent to make a superior thing.”

John Ruskin (1819-1900)
Formula for change
Beckhard, Gleicher, Dannemiller

\[ D \times V \times F > R \]

- \( D \) = Dissatisfaction with how things are
- \( V \) = Vision of what is possible
- \( F \) = First concrete steps that can be taken toward the vision
- \( R \) = Resistance to change
DISSATISFACTION WITH HOW THINGS ARE – CURRENT STATE
CURRENT STATE  CHANGE  IDEAL STATE
7.1.3 Total health expenditure per capita and GDP per capita, 2009 (or nearest year)

Source: OECD Health Data 2011; WHO Global Health Expenditure Database.
http://dx.doi.org/10.1787/888932526084
1.1.3 Life expectancy at birth and health spending per capita, 2009 (or nearest year)

Source: OECD Health Data 2011; World Bank and national sources for non-OECD countries.
http://dx.doi.org/10.1787/888932523291

R^2 = 0.69
### Country Rankings

<table>
<thead>
<tr>
<th>Ranking Range</th>
<th>Australia (AUS)</th>
<th>Canada (CAN)</th>
<th>Germany (GER)</th>
<th>Netherlands (NETH)</th>
<th>New Zealand (NZ)</th>
<th>United Kingdom (UK)</th>
<th>United States (US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00–2.33</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>2.34–4.66</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4.67–7.00</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

### OVERALL RANKING (2010)

<table>
<thead>
<tr>
<th>Category</th>
<th>Australia (AUS)</th>
<th>Canada (CAN)</th>
<th>Germany (GER)</th>
<th>Netherlands (NETH)</th>
<th>New Zealand (NZ)</th>
<th>United Kingdom (UK)</th>
<th>United States (US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Care</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Effective Care</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Safe Care</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Coordinated Care</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Patient-Centered Care</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Access</td>
<td>6.5</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>6.5</td>
</tr>
<tr>
<td>Cost-Related Problem</td>
<td>6</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Timeliness of Care</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Efficiency</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Equity</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Long, Healthy, Productive Lives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

### Health Expenditures/Capita, 2007

<table>
<thead>
<tr>
<th>Country</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUS</td>
<td>$3,357</td>
</tr>
<tr>
<td>CAN</td>
<td>$3,895</td>
</tr>
<tr>
<td>GER</td>
<td>$3,588</td>
</tr>
<tr>
<td>NETH</td>
<td>$3,837*</td>
</tr>
<tr>
<td>NZ</td>
<td>$2,454</td>
</tr>
<tr>
<td>UK</td>
<td>$2,992</td>
</tr>
<tr>
<td>US</td>
<td>$7,290</td>
</tr>
</tbody>
</table>

Note: * Estimate. Expenditures shown in $US PPP (purchasing power parity).
In the majority of studies, costs for healthcare are **INVERSELY** related to quality of care!

**EXHIBIT 1**  
Relationship Between Quality And Medicare Spending, As Expressed By Overall Quality Ranking, 2000–2001


**NOTE:** For quality ranking, smaller values equal higher quality.
THE SHIFT: from passive payer (based on volume of services) to active purchaser (based on quality and efficiency)

THE CATALYST: the creation of appropriate incentives encouraging all healthcare providers to deliver higher quality care at lower total costs

Roadmap for Implementing Value Driven Healthcare in the Traditional Medicare Fee-for-Service Program
I think value-based purchasing will

1. Reduce costs and improve quality
2. Reduce costs and worsen quality
3. Increase costs and improve quality
4. Increase costs and worsen quality
Dissatisfaction with how things are

• “How could we be better?”
• “What keeps you from delivering the care you intend?”
• “What drives you crazy?”
• “What work-arounds have you developed?”
• “Are we ready for the future in your field?”

• What information is needed? Who is your audience?
• How should the data be shared to impart information?
DATA – audience and sources

**Audience**
- Not what matters to you – you’re already convinced
- Ask questions
- Confirm answers
- Remind the audience

**Sources**
- Balance between effort and value
- Automated
- Precise
- Valid
- Define interpretation and targets *a priori*
Median Ventilator Days Performance - Q2 2012
High Value Is Good (Inverse Percentage of 10 Days)
If you are a hospital CEO, what are your top THREE concerns?

<table>
<thead>
<tr>
<th></th>
<th>2010*</th>
<th>2009</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial challenges</td>
<td>77%</td>
<td>76%</td>
<td>77%</td>
</tr>
<tr>
<td>Healthcare reform</td>
<td>53%</td>
<td>53%</td>
<td>---</td>
</tr>
<tr>
<td>Government mandates</td>
<td>32%</td>
<td>30%</td>
<td>26%</td>
</tr>
<tr>
<td>Patient safety and quality</td>
<td>31%</td>
<td>32%</td>
<td>43%</td>
</tr>
</tbody>
</table>

*Survey of 1,399 hospital CEOs by American College of Healthcare Executives
• Sixth year that “Financial Challenges” is the #1 response

http://www.ache.org/Pubs/Releases/2011/topissues.cfm
If you are a hospital CEO, rank your top concerns.

<table>
<thead>
<tr>
<th></th>
<th>2011**</th>
<th>2010</th>
<th>2009</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial challenges</td>
<td>2.5</td>
<td>77%</td>
<td>76%</td>
<td>77%</td>
</tr>
<tr>
<td>Healthcare reform</td>
<td>4.5</td>
<td>53%</td>
<td>53%</td>
<td>---</td>
</tr>
<tr>
<td>Government mandates</td>
<td>4.6</td>
<td>32%</td>
<td>30%</td>
<td>26%</td>
</tr>
<tr>
<td>Patient safety and quality</td>
<td>4.6</td>
<td>31%</td>
<td>32%</td>
<td>43%</td>
</tr>
</tbody>
</table>

**Survey of 1,294 community hospital CEOs by American College of Healthcare Executives**

**Average rank given to each issue**

*Seventh year that “Financial Challenges” is the #1 response*
If you are a hospital CEO, what is your #1 challenge in Patient Safety and Quality, 2011?

1. Engaging doctors in improving culture of quality
2. Redesigning care processes
3. Pay for performance
4. Redesigning work environment to reduce errors
5. Non-payment for never events
If you are a hospital CEO, what are your challenges in Patient Safety and Quality, 2011?

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging docs in improving culture of quality</td>
<td>72%</td>
</tr>
<tr>
<td>Redesigning care processes</td>
<td>58%</td>
</tr>
<tr>
<td>Pay for performance</td>
<td>50%</td>
</tr>
<tr>
<td>Redesigning work environment to reduce errors</td>
<td>43%</td>
</tr>
<tr>
<td>Non-payment for never events</td>
<td>35%</td>
</tr>
<tr>
<td>Public reporting of outcomes data</td>
<td>31%</td>
</tr>
<tr>
<td>Medication errors</td>
<td>31%</td>
</tr>
<tr>
<td>Compliance with accrediting organizations (JC)</td>
<td>30%</td>
</tr>
<tr>
<td>Leapfrog demands</td>
<td>29%</td>
</tr>
<tr>
<td>Nosocomial infections</td>
<td>21%</td>
</tr>
</tbody>
</table>
Why was September so much better?

<table>
<thead>
<tr>
<th>Pneumonia Readmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>July</td>
</tr>
<tr>
<td>Rate</td>
</tr>
</tbody>
</table>

1. More follow-up appointments made
2. Better adherence to practice guidelines
3. Lower acuity of illness
4. Good weather
5. None of the above
Why was September so much better?

### Pneumonia Readmissions

<table>
<thead>
<tr>
<th></th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>17.8%</td>
<td>16.7%</td>
<td>14.0%</td>
<td>18.4%</td>
</tr>
</tbody>
</table>

**RIVERSIDE METHODIST HOSPITAL QUALITY & PATIENT SAFETY INDICATORS**

**Pneumonia: 30-Day All-Cause Readmissions (Same Facility)**

The recent control limits are calibrated from 7/2009 to 1/2010 (missing values were not counted).
VISION OF WHAT IS POSSIBLE – IDEAL STATE
IDEAL STATE

- Evidence-based medicine
- Consensus guidelines
- Performance measures
- Public reporting
- Value-based purchasing
- JFK
Did we need to “see” this first?

Keystone Initiative

Average infections/1000 catheter days

Baseline Implementation 0-3 mos 4-6 mos 7-9 mos 10-12 mos 13-15 mos 16-18 mos 19-21 mos 22-24 mos 25-27 mos 28-30 mos 31-33 mos 34-36 mos

NEJM 2006, BMJ 2010
Did we need to “see” this first?

Keystone Initiative

CLABSIs at OH
FY2006 – 3.11 per 1000 catheter days
FY2012 – 0.24 per 1000 catheter days

Average infections/1000 catheter days

Baseline
Implementation
0-3 mos
4-6 mos
7-9 mos
10-12 mos
13-15 mos
16-18 mos
19-21 mos
22-24 mos
25-27 mos
28-30 mos
31-33 mos
34-36 mos

NEJM 2006, BMJ 2010
What do you think of this?

1. We have adopted these strategies and have similar results.

2. We have reduced CLABSI rates, but not as much as they observed.

3. I think our patients are sicker than those in this project.

4. I don’t believe these data.
Checklists prevent CLABSI/VAP?

Before the program and annually thereafter

• Step 1: educated staff on the science of improving patient safety, including systems redesign
• Step 2: asked teams to identify defects
• Step 3: involved “senior executive partnerships”
• Step 4: asked staff to choose and learn from 1 defect a month
• Step 5: asked teams to implement tools to help improve teamwork and communication

At my facility we have?

1. Implemented fully all 5 steps.
2. Use checklists and daily determination of continued need for the line.
3. Implemented and use checklists for insertion.
4. Have checklists that are sometimes used.
5. Haven’t done any of this.
Early physical and occupational therapy in mechanically ventilated, critically ill patients


<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention (n=49)</th>
<th>Control (n=55)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return to independent functional status at hospital discharge</td>
<td>29 (59%)</td>
<td>19 (35%)</td>
<td>0.02</td>
</tr>
<tr>
<td>ICU delirium (days)</td>
<td>2.0 (0.0-6.0)</td>
<td>4.0 (2.0-7.0)</td>
<td>0.03</td>
</tr>
<tr>
<td>Time in ICU with delirium (%)</td>
<td>33% (0-58)</td>
<td>57% (33-69)</td>
<td>0.02</td>
</tr>
<tr>
<td>Hospital delirium (days)</td>
<td>2.0 (0.0-6.0)</td>
<td>4.0 (2.0-8.0)</td>
<td>0.02</td>
</tr>
<tr>
<td>Hospital days with delirium (%)</td>
<td>28% (26)</td>
<td>41% (27)</td>
<td>0.01</td>
</tr>
<tr>
<td>Barthel Index score at hospital discharge</td>
<td>75 (7.5-95)</td>
<td>55 (0-85)</td>
<td>0.05</td>
</tr>
<tr>
<td>ICU-acquired paresis at hospital discharge</td>
<td>15 (31%)</td>
<td>27 (49%)</td>
<td>0.09</td>
</tr>
<tr>
<td>Ventilator-free days*</td>
<td>23.5 (7.4-25.6)</td>
<td>21.1 (0.0-23.8)</td>
<td>0.05</td>
</tr>
<tr>
<td>Duration of mechanical ventilation (days)</td>
<td>3.4 (2.3-7.3)</td>
<td>6.1 (4.0-9.6)</td>
<td>0.02</td>
</tr>
<tr>
<td>Duration of mechanical ventilation, survivors (days)</td>
<td>3.7 (2.3-7.7)</td>
<td>5.6 (3.4-8.4)</td>
<td>0.19</td>
</tr>
<tr>
<td>Duration of mechanical ventilation, non-survivors (days)</td>
<td>2.5 (2.4-5.5)</td>
<td>9.5 (5.9-14.1)</td>
<td>0.04</td>
</tr>
<tr>
<td>Length of stay in ICU (days)</td>
<td>5.9 (4.5-13.2)</td>
<td>7.9 (6.1-12.9)</td>
<td>0.08</td>
</tr>
<tr>
<td>Length of stay in hospital (days)</td>
<td>13.5 (8.0-23.1)</td>
<td>12.9 (8.9-19.8)</td>
<td>0.93</td>
</tr>
<tr>
<td>Hospital mortality</td>
<td>9 (18%)</td>
<td>14 (25%)</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Data are n (%), median (IQR), or mean (SD). ICU=intensive care unit. *Ventilator-free days from study day 1 to day 28. Barthel Index scale 0–100, APACHE II scale 0–71.
"I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth."

- JFK, 5/25/1961
Vision

• What is compelling to you?
  – Can you articulate a vision?

• What is compelling to your audience?
  – Ask, don’t tell
  – Can they articulate a vision?

• Provide the care we intend to provide

• Regain control of the direction of health care
FIRST CONCRETE STEPS THAT CAN BE TAKEN TOWARD THE VISION
Perfect is the enemy of better.

- Small steps and prioritize
- Plan to measure the effects – good and bad
- Show the results
- No matter how much you think and plan, you can’t predict what will happen perfectly.
# Let’s treat sepsis...

**TABLE 5. Recommendations: Initial Resuscitation**

<table>
<thead>
<tr>
<th>Section</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| A. Initial Resuscitation | 1. Protocized, quantitative resuscitation of patients persisting after initial resuscitation.
| | a. Central venous pressure (CVP) < 8 mm Hg.
| | b. Mean arterial pressure (MAP) < 65 mm Hg.
| | c. Urine output < 0.5 mL/kg/h.
| | d. Central venous oxygen saturation (ScvO2) < 70%.
| | 2. In patients with septic shock, consider vasopressor support.
| | a. Epinephrine, norepinephrine, or dopamine.
| | b. Inotropic agents as needed.
| | 3. Antimicrobial therapy should be initiated as soon as possible (within 1 hour).

**TABLE 6. Recommendations**

<table>
<thead>
<tr>
<th>Section</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| A. Initial Resuscitation | 1. Protocolized, quantitative resuscitation of patients persisting after initial resuscitation.
| | a. Central venous pressure (CVP) < 8 mm Hg.
| | b. Mean arterial pressure (MAP) < 65 mm Hg.
| | c. Urine output < 0.5 mL/kg/h.
| | d. Central venous oxygen saturation (ScvO2) < 70%.
| | 2. In patients with septic shock, consider vasopressor support.
| | a. Epinephrine, norepinephrine, or dopamine.
| | b. Inotropic agents as needed.
| | 3. Antimicrobial therapy should be initiated as soon as possible (within 1 hour).

**TABLE 7. Recommendations**

<table>
<thead>
<tr>
<th>Section</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| A. Initial Resuscitation | 1. Protocolized, quantitative resuscitation of patients persisting after initial resuscitation.
| | a. Central venous pressure (CVP) < 8 mm Hg.
| | b. Mean arterial pressure (MAP) < 65 mm Hg.
| | c. Urine output < 0.5 mL/kg/h.
| | d. Central venous oxygen saturation (ScvO2) < 70%.
| | 2. In patients with septic shock, consider vasopressor support.
| | a. Epinephrine, norepinephrine, or dopamine.
| | b. Inotropic agents as needed.
| | 3. Antimicrobial therapy should be initiated as soon as possible (within 1 hour).

**TABLE 8. (Continued) Recommendations: Other Supportive Therapy of Severe Sepsis**

<table>
<thead>
<tr>
<th>Section</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| K. Blood Products | 1. Fresh frozen plasma (FFP).
| | 2. Platelet concentrates.
| | 3. Cryoprecipitate.
| | 4. Red blood cells.

**References**


3. The Surviving Sepsis Campaign. (2014). **Surviving sepsis campaign: international guidelines for management of severe sepsis and septic shock**. Critical Care Medicine, 42(5), S8S-11S.
Let’s treat sepsis...

TABLE 5. Recommendations: Initial Resuscitation

A. Initial Resuscitation

1. Protocolized, quantitative resuscitation of patients persisting after fluid resuscitation is indicated.
   - a) Central venous pressure (CVP)
   - b) Mean arterial pressure (MAP) > 65 mmHg
   - c) Urine output > 0.5 ml/kg/hr
   - d) Central venous oxygen saturation (ScvO2) > 70%

2. In patients without shock, check CVP, MAP, urine output, and ScvO2.

B. Screening for sepsis

1. Routine screening for sepsis in all patients on admission
2. Hospital-based surveillance for sepsis

C. Diagnosis

1. Cultures as clinically indicated (e.g., blood, sputum, urine)
2. At least two of the following if candidiasis is suspected
3. Imaging studies

D. Antimicrobial therapy

1. Administration of antibiotics for patients with suspected sepsis
2a. Initial empiric antimicrobial therapy should be determined by site of infection and local resistance patterns.
2b. The regimen should also be adapted to the clinical response.
3. Use of low-protein-calorie diets may reduce the risk of sepsis in critically ill patients
4a. Combination therapy with a β-lactam antibiotic and an antipseudomonal β-lactamase inhibitor.
4b. The choice of the second drug must be based on the local susceptibility patterns.

E. Surviving Sepsis Campaign Bundles

TO BE COMPLETED WITHIN 3 HOURS:
1. Measure lactate level
2. Obtain blood cultures prior to administration of antibiotics
3. Administer broad-spectrum antibiotics
4. Administer 30 ml/kg crystalloid for hypotension or lactate ≥4 mmol/L

TO BE COMPLETED WITHIN 6 HOURS:
5. Apply vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) > 65 mmHg
6. In the event of persistent arterial hypotension despite volume resuscitation (septic shock) or initial lactate ≥4 mmol/L (36 mg/dL):
   - Measure central venous pressure (CVP)
   - Measure central venous oxygen saturation (ScvO2)
7. Remeasure lactate if initial lactate was elevated

*Targets for quantitative resuscitation included in the guidelines are CVP of ≥8 mmHg, ScvO2 of ≥70%, and normalization of lactate.

F. Corticosteroids

1. Use corticosteroids in patients with sepsis-induced hypoxia and shock.
2. Use corticosteroids in patients with sepsis-induced hypothermia and shock.
3. Use corticosteroids in patients with sepsis-induced hypotension and shock.
4. Use corticosteroids in patients with sepsis-induced hypoglycemia and shock.
5. Use corticosteroids in patients with sepsis-induced hypokalemia and shock.

G. Fluid Therapy of Sepsis

1. Fluid therapy should be guided by the clinical response and laboratory findings.
2. Use of colloids such as hetastarch is recommended in patients with sepsis-induced hypovolemia and shock.
3. Use of crystalloids such as saline is recommended in patients with sepsis-induced hypovolemia and shock.

H. NUTRITION

1. Administer oral or enteral nutrition, as tolerated, rather than parenteral nutrition.
2. Avoid mandatory full-caloric feeding in the first week but rather suggest low-dose feeding (600 kcal per day).
3. Use intravenous glucose and enteral nutrition rather than total parenteral nutrition (TPN) alone or parenteral nutrition in combination with parenteral feeding in the first 7 days after a diagnosis of severe sepsis/septic shock (grade 2C).
4. Use nutrition with specific immunomodulating supplementation rather than nutrition providing specific immunomodulating supplementation in patients with severe sepsis (grade 2C).

I. Setting Goals of Care

1. Discuss goals of care and prognosis with patients and families.
2. Incorporate goals of care into treatment and end-of-life care planning, utilizing palliative care principles where appropriate.
3. Address goals of care as early as feasible, but no later than within 72 hours of ICU admission.

TABLE 6. Recommendations: Other Supportive Therapy of Severe Sepsis

K. Blood Product

1. Once ISS hypotensive
2. Not using IHP

L. Glucose Control

1. A protocolized approach to blood glucose management in ICU patients with sepsis-induced hypoglycemia.
2. A protocolized approach to blood glucose management in ICU patients with severe sepsis commencing insulin dosing when consecutive blood glucose levels are <180 mg/dL.
3. This protocolized approach should target an upper blood glucose level of 150-180 mg/dL.

TABLE 7. (Continued) Recommendations: Other Supportive Therapy of Severe Sepsis

M. Oxygenation

1. Administer 100% oxygen to achieve a PaO2/FiO2 > 300 mmHg.

N. Vasopressors

1. Use vasopressors to maintain systolic blood pressure (SBP) > 90 mmHg.

O. Mechanical Ventilation

1. Administer mechanical ventilation to maintain a PaO2/FiO2 > 200 mmHg.

P. Antimicrobial Therapy

1. Administer antimicrobial therapy for patients with sepsis-induced hypoxemia and shock.

Q. Glucose Control

1. A protocolized approach to blood glucose management in ICU patients with sepsis-induced hypoglycemia.
2. A protocolized approach to blood glucose management in ICU patients with severe sepsis commencing insulin dosing when consecutive blood glucose levels are <180 mg/dL.
3. This protocolized approach should target an upper blood glucose level of 150-180 mg/dL.
PRIORITIZING: How to get more focused?

• Create a scorecard
  – Goals are consensus
  – How you get there is up to you
• Invest in those who want investment
• Think of projects as a series of pilot projects
• Do fewer things better
  – Get Step 1 optimal before going to Step 2
• If we have obvious successes, no matter how small, this will make subsequent projects easier
PRIORITIZING: How to get more focused?

• Create a scorecard
  – Goals are consensus
  – How you get there is up to you

• Invest in those who want investment

• Think of projects as a series of pilot projects

• Do fewer things better
  – Get Step 1 optimal before going to Step 2

• If we have obvious successes, no matter how small, this will make subsequent projects easier

To get this focused means there are things we should intentionally ignore...for now
The consequences of keeping our options open

- You get 100 “clicks”
- Clicks in each room get you some $
- Clicks to change rooms ("door clicks") do not earn $
- Goal is to make as much money as possible
The consequences of keeping our options open

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th># of door clicks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant availability</td>
<td>All doors always available</td>
<td>6.1</td>
</tr>
<tr>
<td>Decreased availability</td>
<td>Doors get smaller and then disappear if not clicked</td>
<td>12.8</td>
</tr>
</tbody>
</table>
The consequences of keeping our options open

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th># of door clicks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant availability</td>
<td>All doors always available</td>
<td>6.1</td>
</tr>
<tr>
<td>Decreased availability</td>
<td>Doors get smaller and then disappear if not clicked</td>
<td>12.8</td>
</tr>
<tr>
<td>Reactivation for a fee</td>
<td>Doors get smaller and then disappear if not clicked – but you can reactivate for a fee</td>
<td>12.1</td>
</tr>
</tbody>
</table>
The consequences of keeping our options open

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th># of door clicks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant availability</td>
<td>All doors always available</td>
<td>6.1</td>
</tr>
<tr>
<td>Decreased availability</td>
<td>Doors get smaller and then disappear if not clicked</td>
<td>12.8</td>
</tr>
<tr>
<td>Reactivation for a fee</td>
<td>Doors get smaller and then disappear if not clicked – but you can reactivate for a fee</td>
<td>12.1</td>
</tr>
<tr>
<td>Reactivation for free</td>
<td>Doors get smaller and then disappear if not clicked – but you can reactivate at no cost</td>
<td>10.4</td>
</tr>
</tbody>
</table>
Unintended Consequences: Energy Conservation


**Descriptive norm**
- Information about how much energy they used
- Information about average energy used during same time in their neighborhood
- Suggestions on how to conserve energy

**Descriptive + Injunctive**
- Descriptive plus
- If consumed less than average → 😊
- If consumed more than average → 😞
Unintended Consequences: Energy Conservation


High Consumers

Low Consumers

Average Daily Household Energy Consumption

Baseline
Follow-up

Descriptive Only
Unintended Consequences: Energy Conservation


High Consumers 😞

Average Daily Household Energy Consumption

<table>
<thead>
<tr>
<th></th>
<th>Descriptive Only</th>
<th>Descriptive + Injunctive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>21.5</td>
<td>21</td>
</tr>
<tr>
<td>Follow-up</td>
<td>19.5</td>
<td>18.5</td>
</tr>
</tbody>
</table>

Baseline
Follow-up
Unintended Consequences: Energy Conservation


Low Consumers 😊

![Bar chart showing average daily household energy consumption for low consumers. The chart compares descriptive only and descriptive + injunctive conditions, with follow-up and baseline data presented.]
RESISTANCE TO CHANGE
“There’s lip service to quality and, goodness knows, propaganda, but real commitment is in short supply.”

– Avedis Donabedian, 1919-2000
• “If you want to get an emotional commitment from the people who work for you — or with you, or with whom you have business relationships — you need to be willing to commit to them too, unsolicited and without direct hope of reward.”

» Jim Dougherty
Can rules make quality better?

“Morality cannot be legislated, but behavior can be regulated. Judicial decrees may not change the heart, but they can restrain the heartless.”

- Martin Luther King, Jr.

Are we dealing with the heartless? Do most people in health care have bad intentions?
“System awareness and systems design are important for health professionals, but are not enough. They are enabling mechanisms only. It is the ethical dimension of individuals that is essential to a system’s success. **Ultimately, the secret of quality is love...If you have love, you can then work backward to monitor and improve the system.**”

– Avedis Donabedian, 1919-2000
## Motivators

### Market relationship
- Exchange of currency for a product or service
- Extrinsic motivators
- Better motivator for rote tasks

### Social relationship
- Exchange of an intangible for a product or service
- Intrinsic motivators
- Better motivation for people to be creative, productive, and loyal
- Create social expectations
- Autonomy, mastery, purpose

---

The most expensive sex is free sex.

- Woody Allen
**Effort for Payment**
Heyman and Ariely *Psych Sci* 2004

<table>
<thead>
<tr>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>$5</td>
<td>$0.50</td>
<td>Favor</td>
</tr>
<tr>
<td>Tasks done</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Effort for Payment
Heyman and Ariely *Pysch Sci* 2004

<table>
<thead>
<tr>
<th></th>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>$5</td>
<td>$0.50</td>
<td></td>
<td>Favor</td>
</tr>
<tr>
<td>Tasks done</td>
<td>159</td>
<td>101</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Effort for Payment

Heyman and Ariely *Psych Sci* 2004

<table>
<thead>
<tr>
<th></th>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reward</strong></td>
<td>$5</td>
<td>$0.50</td>
<td></td>
<td>Favor</td>
</tr>
<tr>
<td><strong>Tasks done</strong></td>
<td>159</td>
<td>101</td>
<td></td>
<td>168</td>
</tr>
</tbody>
</table>
## Effort for Payment

Heyman and Ariely *Psych Sci* 2004

<table>
<thead>
<tr>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>$5</td>
<td>$0.50</td>
<td>Favor</td>
</tr>
<tr>
<td>Tasks done</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Effort for Payment

*Heyman and Ariely* *Psych Sci* 2004

<table>
<thead>
<tr>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>Godiva</td>
<td>Snickers</td>
<td>Favor</td>
</tr>
<tr>
<td>Tasks done</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Effort for Payment**
Heyman and Ariely *Psych Sci* 2004

<table>
<thead>
<tr>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>Godiva</td>
<td>Snickers</td>
<td>Favor</td>
</tr>
<tr>
<td>Tasks done</td>
<td>169</td>
<td>162</td>
<td>168</td>
</tr>
</tbody>
</table>
Effort for Payment
Heyman and Ariely *Pysch Sci* 2004

<table>
<thead>
<tr>
<th>Norms</th>
<th>Market</th>
<th>Market</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>Godiva</td>
<td>Snickers</td>
<td>Favor</td>
</tr>
<tr>
<td>Tasks done</td>
<td>169</td>
<td>162</td>
<td>168</td>
</tr>
</tbody>
</table>

Including the value of the “gift” (“$50-cent Snickers bar”) caused behavior to revert to what happened with money alone.
Other effects of market norms

- More selfish
- More self-reliant
- Want to spend more time alone
- More likely to select tasks that required individual input rather than teamwork
- Chose seats farther away from whomever they were told to work with
- Can extinguish social norms for a prolonged time

Gneezy and Rustichini “A Fine is a Price.” J Legal Studies 2000
• Build people before cars
• Establish mutual trust
• Lead as if you have no power
• No problem is problem

» Toyota
“We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because the challenge is one we are willing to accept, one we are unwilling to postpone, and one which we intend to win.”

• JFK, 9/12/1962
THANK YOU FOR YOUR ATTENTION

jobrien4@ohiohealth.com