An Owners Story:
The Many Faces of Healthcare

Presented by: Christine Kiefer and April Harr, Harborview Medical Center
For the Architecture for Health Panel (AHP)
June 3, 2016
Why is my client a jerk
Christine
1. Do more with less
What is the triple aim?
Projected number of Medicare beneficiaries

<table>
<thead>
<tr>
<th>Year</th>
<th>Beneficiaries</th>
<th>Payment Cuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>54M</td>
<td>-14B</td>
</tr>
<tr>
<td>2015</td>
<td>56M</td>
<td>-21B</td>
</tr>
<tr>
<td>2016</td>
<td>57M</td>
<td>-25B</td>
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<td>2017</td>
<td>59M</td>
<td>-32B</td>
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<tr>
<td>2018</td>
<td>61M</td>
<td>-42B</td>
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<tr>
<td>2019</td>
<td>63M</td>
<td>-53B</td>
</tr>
<tr>
<td>2020</td>
<td>64M</td>
<td>-64B</td>
</tr>
</tbody>
</table>

Projected Medicare Fee-for-service Payment Cuts per the ACA

But everyone has health insurance now, right?
* Please don’t let me be an academic medical center when I grow up.
2. Ambiguity
Strategic ambiguity is the uncertainty arising from the organization's inability to

1) define strategy in the face of economic volatility,

2) Clearly communicate the strategy

3) Align resources to implement the strategy and

4) Execute
Inpatient vs. Outpatient
THE TRANSITION TO OUTPATIENT OF CORONARY ANGIOPLASTY (PTCA)

Coronary angioplasty (PTCA) is a procedure to treat narrow or blocked carotid arteries, usually with the placement of a stent to keep the artery open.

The procedure is on the leading edge of a growing trend in US hospitals of transitioning inpatient procedures to the outpatient setting. THE RESULT: LOWER COST OF CARE

CORONARY ANGIOPLASTY IS SHIFTING FROM 1 DAY INPATIENT STAYS TO OUTPATIENT PROCEDURES...

PERCENT OF TOTAL CORONARY ANGIOPLASTY WITHOUT COMPLICATIONS BY VOLUME

...CREATING ABOUT $2,100 IN BENEFIT, WHICH IS ALMOST ENTIRELY CAPTURED BY PAYORS

$2,100
TOTAL SAVINGS PER CASE

$2,000
PAYORS BENEFIT FROM LOWER REIMBURSEMENTS PER CASE

$100
HOSPITALS BENEFIT FROM HIGHER PROFITS PER CASE

THERE IS OPPORTUNITY FOR THIS TREND TO CONTINUE AS 20% OF HIGH VOLUME PHYSICIANS HAVE NOT YET TRANSITIONED TO OUTPATIENT

PERCENT OF PHYSICIANS WITH >100 CORONARY ANGIOPLASTY CASES PER YEAR, 2011

HIGHEST VOLUME PHYSICIANS

20%
OUTPATIENT

FOOTNOTE:
1. And true primary procedure code 33946 (percutaneous transluminal coronary angioplasty).
2. Total savings per case for hospitals + difference between benchmarks versus actual reimbursement varied from $300 to $600 (per case). Adjusted per case savings for DRS 545-546 (day stay only) and DRG 345-346 (inpatient only). Actual reductions in cost varied from hospital to hospital and depended on analysis of 90 hospitals with savings range for Medicare of $100 to $800.
3. Objective Health analysts.

SOURCES:
Objective Health analyses

Copyright 2012, Objective Health, a specialty solutions for healthcare providers.
Fee for Service vs. Bundled payments, risk sharing, value based purchasing
Payment Reform Accelerating New Models

- FFS Reimbursement Cuts
- Pay-for-Performance
- Value-Based Purchasing
- Bundled Payments
- Shared Savings
- Global Payments / Capitation

Independent → Alignment → Integration → Accountability

Source: PricewaterhouseCoopers
System vs. Stand alone
Figure 18. Impact of Mergers and Acquisitions on Hospital Market Concentration, 1990-2012

A new wave of hospital mergers is driving market concentration higher. The blue bars denote the number of hospital merger and acquisition transactions in a given year; in the 1990s, penetration of managed-care insurers, with a mandate for more aggressive cost control, led hospitals to merge in response, strengthening their market power over the insurers. The Federal Trade Commission and the U.S. Department of Justice normally consider markets with HHI above 1,500 as “moderately concentrated” and markets with HHI above 2,500 as “highly concentrated,” triggering antitrust litigation. However, consolidated hospital markets have largely avoided antitrust litigation. Today, more than half of the hospital markets in the United States have an HHI above 2,500, meaning that the DOJ and FTC would consider them to be “highly concentrated.” (Source: A. Roy analysis, Robert Wood Johnson Foundation, Martin Gaynor, Irving Levin Associates, HHS ASPE)
SILVER TSUNAMI

vs.

generation x
Population Projections by U.S. Generation

Source: Pew Research Center. Tabulation of U.S. Census Bureau population projections released December 2014. Millennial (Born 1981 to 1997, ages 18 to 34); baby boomer (1946 to 1964, 51 to 69); Generation X (1965 to 1980, 35 to 50); and Silent (1928 to 1945, 70 to 87).
Responsibility for the continuum of care

Figure 2

Medicare Benefit Payments, 2014

- Medicare Advantage: 26%
- Hospital Inpatient Services: 23%
- Physician Payments: 12%
- Outpatient Prescription Drugs: 11%
- Hospital Outpatient Services: 7%
- Skilled Nursing Facilities: 5%
- Other Services*: 14%
- Home Health: 3%

Total Medicare Benefit Payments, 2014 = $597 billion

NOTE: *Consists of Medicare benefit spending on hospice, durable medical equipment, Part B drugs, outpatient dialysis, ambulance, lab services, and other Part B services; also includes the effect of sequestration on spending for Medicare benefits and amounts paid to providers and recovered.

3. Culture eats strategy for lunch
Change.
4. CDiff
Contact Enteric Precautions
You or your loved one is in Contact Enteric Precautions. These precautions prevent spread of infection between patients in hospitals. This type of infection is spread by directly touching the patient or objects in the room.

An orange with brown sign saying “Contact Enteric Precautions” is outside the room letting staff, families, and visitors know what they can do to help keep patients safe.

As patient, family, or visitor you must help by:
- Cleaning hands with soap and water when you enter and leave the room.
- Family and visitors should not eat in room.
- Wearing a gown and gloves when entering the room
- Do not leave or take your loved one outside the room unless given permission by the nurse so that germs are not spread to other patients, visitors, and staff.
- Asking doctors and staff to wash their hands as they enter and leave the room even if they are using gloves.
- Limiting visitors to close contacts only.

You will see doctors and staff doing the following:

Hand Hygiene
- Cleaning hands before and after caring for the patient.

Gloves, Gowns, Masks, Goggles
- They must wear gloves and gown while in the room and remove them before leaving. They might also wear mask and goggles.

Transportation
- If the patient needs to go out of the room for a test, staff will help the patient wash their hands and wear a clean hospital gown
- Staff will clean transport equipment before it leaves the room
- Staff will wash their hands with soap and water.

If you have additional questions about Contact Enteric Precautions, ask your nurse

Washington State Hospital Association
Washington Hospitals – Collaborating to Keep Our Patients Safe
KISS
(Keep it Simple, Stupid)
KISS – First base
* Thank you World Health Organization
Hand Hygiene Technique with Alcohol-Based Formulation

1a. Duration of the entire procedure: 20-30 seconds

1b. Apply a palmful of the product in a cupped hand, covering all surfaces;

2. Rub hands palm to palm;

3. Right palm over left dorsum with interlaced fingers and vice versa;

4. Palm to palm with fingers interlaced;

5. Backs of fingers to opposing palms with fingers interlocked;

6. Rotational rubbing of left thumb clasped in right palm and vice versa;

7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8. Once dry, your hands are safe.
Hand Hygiene Technique with Soap and Water

Duration of the entire procedure: 40-60 seconds

0. Wet hands with water;
1. Apply enough soap to cover all hand surfaces;
2. Rub hands palm to palm;
3. Right palm over left dorsum with interlaced fingers and vice versa;
4. Palm to palm with fingers interlaced;
5. Backs of fingers to opposing palms with fingers interlocked;
6. Rotational rubbing of left thumb clasped in right palm and vice versa;
7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
8. Rinse hands with water;
9. Dry hands thoroughly with a single use towel;
10. Use towel to turn off faucet;
11. Your hands are now safe.
Hand hygiene

8th Grade WASL:

What are the correct answers in the following multiple choice question?

Hand hygiene
a) Is easy to perform
b) Should be performed before contact with a patient
c) Should be performed after contact with a patient
d) Should be performed before putting on gloves

High School Proficiency Exam

A nurse enters a patient room who is in contact precautions to answer a call light. Being an excellent care provider, the nurse notices a dirty towel on the floor that could be a fall hazard; the nurse places the towel into the soiled linen hamper. The nurse proceeds to address the call light issue, helping the patient reposition.

When should the nurse use hand hygiene and what type of hand hygiene?
Hand hygiene

8th Grade WASL:
Hand hygiene
a) Is easy to perform
b) Should be performed before contact with a patient
c) Should be performed after contact with a patient
d) Should be performed before putting on gloves

Answer:
B, C, D and it should be A but...

High School Proficiency Exam
A nurse enters a patient room who is in contact precautions to answer a call light. Being an excellent care provider, the nurse notices a dirty towel on the floor that could be a fall hazard; the nurse places the towel into the soiled linen hamper. The nurse proceeds to address the call light issue, helping the patient reposition. When should the nurse use hand hygiene and what type of hand hygiene?

Answer:
1. Gel is acceptable as the nurse enters the room and gown and gloves are put on.
2. Oh, but wait there’s a soiled towel.
3. Gloves should be removed after placing the towel in the hamper and hands washed with soap and water.
4. New gloves should be put on before touching the patient.
5. Gloves should be removed and hands washed with soap and water.
6. * Bonus points – Any pen, clip board, tool, equipment must be wiped down with bleach wipes as it leaves the room.
PROJECT NARRATIVE
Design features to facilitate patient and family centered care include: 1) family rooming in area with refrigerator; 2) large windows for enhanced views out and day light; 3) computer at bedside for documentation and sharing EMR with patient; 4) smart technology such as pillow speaker for patient control of window shades, lighting, temperature control, etc., iPad dock and smart TV for room service and internet access; 5) ADA compliant bath with “balance beam” lighted grab bar; 6) nurse server to allow nurses to spend more time at bedside; 7) ceiling lift to assist caregivers in patient transfers, and 8) standardized, same-handed rooms to support lean and safety principles.

PROCESS
Strategies used include: 1) patient focus groups who identified what they value in their environment; 2) lessons from lean thinking to reduce waste (reducing travel time for nurses gathering supplies or medications and providing only the supplies needed at bedside); 3) lessons from evidence-based design to create a healing environment and one that is also efficient (room configuration and ergonomics); and 4) a design process engaging a multi-disciplinary design team that included an interior designer, designer and nurse/medical planner.

ADDITIONAL CONSIDERATIONS
Additional considerations for the design of this room included provisions for patient accessibility, special needs of bariatric patients (wide entrance door, ceiling lift and ADA bath) and sustainable design principles such as the use of environmentally preferable materials that also contribute to improved indoor environmental air quality, patient’s control of environmental lighting and daylight, and specification of fixtures that protect and conserve water.

DESIGN TEAM
Eric Mayne, Bill Steed, Anika Stewart & Jeni Wright

Kahler Slater experience design
KISS – Second base
Cleanable Surfaces

High touch surfaces

- Over bed tables
- Light switches
- Telephones
- Grab bars
- Door handles
- Bed rails
- Medical equipment
- Toilets
- Sinks
- Privacy curtains
- Patient chairs

Things to consider:

- How is it cleaned?
- What is the product used for cleaning?
- What is the substrate or assembly?
- Is there a texture?
- How many material connections are there?
- Are there reveals?
- Can adjacent areas all be cleaned in the same way?
- Can the material withstand UV-C?
# Appendix E: Environmental Cleaning Data Tool

Sample Environmental Checklist - Summary Form

For Daily and Terminal Cleaning Room Observations

Modify instructions as needed to comply with data collection protocol or internal policies.

Observe eight daily cleanings per month (try to observe about two per week) and one terminal cleaning per month. Report your results in the highlighted cells.

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Component</th>
<th># Times Task Performed</th>
<th># Times Task NOT Performed</th>
<th># Times Not Applicable</th>
<th>Endorsed Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>At start, perform hand hygiene</td>
<td>Door knobs</td>
<td></td>
<td></td>
<td></td>
<td>Applicable to All</td>
</tr>
<tr>
<td>Put on PPE</td>
<td>Door surfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needed supplies/equipment</td>
<td>Light switches</td>
<td></td>
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<tr>
<td></td>
<td>Window sills</td>
<td></td>
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<tr>
<td></td>
<td>Spot clean walls with disinfectant cloth</td>
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<tr>
<td></td>
<td>Medical equipment (e.g., IV controls)</td>
<td></td>
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<tr>
<td></td>
<td>Bed rails</td>
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<tr>
<td></td>
<td>Call button</td>
<td></td>
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<tr>
<td></td>
<td>Phone</td>
<td></td>
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<tr>
<td>High-touch surfaces</td>
<td>Overhead light (if the bed is empty)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Disinfect with hypochlorite-based disinfectant</td>
<td>Overhead light (if the bed is empty)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Damp Dust</td>
<td>TV &amp; stand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean:</td>
<td>Lights</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bathroom door knob</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mirror</td>
<td></td>
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<tr>
<td></td>
<td>Tub/shower</td>
<td></td>
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<tr>
<td></td>
<td>Faucets (at sink)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bathrooms handrails</td>
<td></td>
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<td></td>
<td>Sink</td>
<td></td>
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<tr>
<td></td>
<td>Toilet seat/flush</td>
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<tr>
<td></td>
<td>Toilet horizontal surface/seat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Floor</td>
<td>Dust mop tile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wet mop tile</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Bed frame</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For TERMINAL CLEANING, damp dust</td>
<td>Mattress covers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pillows</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Blood pressure cuff, as per hospital policy</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Barriers around linear and other such items</td>
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<tr>
<td>EXIT ROOM AFTER CLEANING IS COMPLETE:</td>
<td></td>
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<tr>
<td>Remove trash, maps, soiled curtains, discarded EOL clothes, etc.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Dispose of gloves, gowns, used bedsheets</td>
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<td></td>
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<tr>
<td>RE-STOCK ROOM with SUPPLIES and EQUIPMENT as needed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After Daily Cleaning (Replace as needed)</td>
<td>Hand sanitizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE-ENTER with PPE - GOWN &amp; GLOVES</td>
<td>Paper towels</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Replace curtains as needed</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Replace trash bins</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>After TERMINAL CLEANING, gowns/gloves not needed; set a clean room</td>
<td>Remove as needed: Pillows, mattresses, pillow covers, mattress covers</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Replace curtains as needed</td>
<td></td>
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<tr>
<td>Other:</td>
<td>Change mop heads after each room</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Remove PPE before leaving hallway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform hand hygiene</td>
<td></td>
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<tr>
<td>Overall Endorse Score</td>
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</tbody>
</table>
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DESIGN TEAM
Eric Mayne, Bill Steed, Anika Stewart & Jeni Wright
KISS – Third base
Operations

What happens to hand hygiene and cleanable surfaces in an active health care setting?

- Hand hygiene protocols aren’t followed due to confusion of the protocol or difficulty due to the location of hand hygiene items
- Toilets and hoppers are difficult to clean due to reveals or design
- Toilets and hoppers aerate contamination
- Patients occupy the rooms making cleaning difficult
- Equipment is becoming more mobile
- Case work creates corners that cannot be cleaned and clean supplies can become contaminated
- Surfaces become damaged due to equipment accidents
- Clean and soiled materials flow

Data of note:

1. As CDiff burden increases in the environment so does the prevalence of hand carriage among health care workers.
2. Cdiff, in its spore form, can persist in the environment for months
KISS – Home run
Thoughtful Design

- Easily maintained and cleaned finishes
- Welcoming and respectful
- Family friendly
- Caregiver efficient
- Appropriate placement of hand hygiene and PPE
- Quiet
- Promotes healing
- Enhances communication
4. CDiff

- A Case Study: Hopper Rooms in an ICU environment
THE GOAL:
Reduce transmission of C-diff in the Trauma/Surgical ICU
Key drivers and challenges:

- Multiple bed rooms with shared hopper rooms in an acute care environment
- Access to space during construction and impacts to operations and ongoing patient care 24/7
Existing conditions
The human waste elimination process......not for the faint of heart.

- Bedpans, portable urinals and waste collection bags containing liquid waste/dialysis effluent are dumped/drained into the existing hopper and flushed.

- The shield is there to prevent contaminated matter from splashing on the staff. It does not prevent aerosolization of infectious bacteria from being dispersed into the surrounding environment.
Options explored:

- Converting double rooms into singles
- Adding more hopper rooms
- Low wall diffusers in hopper room

- Built in UV-C lights
- Going handsfree
- Remote flush
- Upgrade finishes in hopper room
- Hopper lid

- Mascerators
- Vacuum toilets
HIGHEST IMPACT/MOST EFFECTIVE:

- Converting double rooms into single
- Add more hopper rooms
- Low wall diffusers in hopper rooms
Challenges:

- High patient census (over 100%)
- Construction impacts over floor below
Yes, but no.....
LOW IMPACT/SOMEWHAT EFFECTIVE:

• Built in UV-B lights
Going handsfree

vs

vs

vs
• Remote flush control mounted outside of hopper room

• Room occupied light
• Upgrade existing finishes

- Install full height antimicrobial wall surface resistant to UV light (i.e. solid surface, stainless steel)
• Hopper Lid Design

Shield vs. lid
Challenges:

- Cost
- Fabrication
- UL listing/FDA approvals
MEDIUM IMPACT/VERY EFFECTIVE:

• Mascerators
But.......mascerators don’t work with dialysis bags
When life throws you C-diff......

Suck it up!
• Vacuum toilet system

A Vacuum Toilet System?

The vacuum system is independent of gravity. The sewage is transported by air and pressure differential (vacuum) instead of water and gravity.

Water is used only for rinsing the bowl, not for transporting the waste.

Limited vertical lifts and long horizontal transportation of the sewage are possible.
Benefits of Vacuum Systems

- More hygienic than gravity toilets
- Low water consumption – less than ½ gallon per flush
- Reduced sewage loading
- Small diameter piping
- No need for vent stacks
- All leaks flow into the piping
- Allows for transportation of waste around obstacles
- Design flexibility
Summary:

OPERATIONAL CHALLENGES
  • Can’t rely on staff to wash their hands every time
  • Continued high quality care during construction
  • Managing high census during construction

DESIGN AND CONSTRUCTION CHALLENGES
  • Effective outcomes?
  • Phasing/shut downs/infection control

FACILITY CHALLENGES
  • Cleanability and Maintenance
  • Risks vs. reward
To be continued.........