# Commercial Bundle Program for Total Joint Replacements

## 2015 Pilot – Henry Ford West Bloomfield Hospital

Presentation to University of Michigan,
Industrial and Operations Engineering

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*March 25, 2015*

# Agenda

- Background
- Measuring “True Costs” and Quality to Improve Value
- Improving Value
- Creating a Commercial Bundle Product & Partnership with HAP

# Background

*Strategic Imperatives to Bundle and Our Response*

Value of a Bundle

IHI's Learning Collaborative

# Background



## *Current State and Market Trends*

- Fee For Service
  - Multiple providers
  - Multiple locations
  - Multiple bills
- Bundled Products
  - Coordinates care across the episode
  - Places providers at risk for patient outcomes, quality, and costs
  - Provides comprehensive and affordable care for the consumers and employees
  - Offers one transparent cost for the entire episode
- Major Players: BCBS, Wal-Mart, Lowe's, Cleveland Clinic
  - Emerging Trend: Employer Coalition partnerships w/ providers

# Participation in Institute of Healthcare Improvement's (IHI) Learning Collaborative



## *HFPN and WBH learning partnership*

Objectives of participating in IHI's Learning Collaborative

- Measure and improve costs and outcomes to increase value
- Compare costs and outcomes with other providers across the Nation

Overarching Objectives for HFHS

- Offer the first commercial bundle product in the Michigan market
- Leverage cost and outcome information to inform market pricing, value proposition and reduce waste
- Grow market share with "first mover" advantage

1) Joint Replacement Learning Collaborative

# Measuring “True Costs” and Quality to Improve Value

Overview of TDABC Methodology

Episode of Care

Process Maps

Capacity Cost Rates

Identify Opportunities

# Overview of TDABC*

**1. Determine care processes**

What Activities; Who is Performing; Time taken

**2. Calculate cost rates**

Cost per minute for each personnel

**3. Account for Consumables**

Materials, supplies, Drugs

**4. Allocate Indirect Costs**

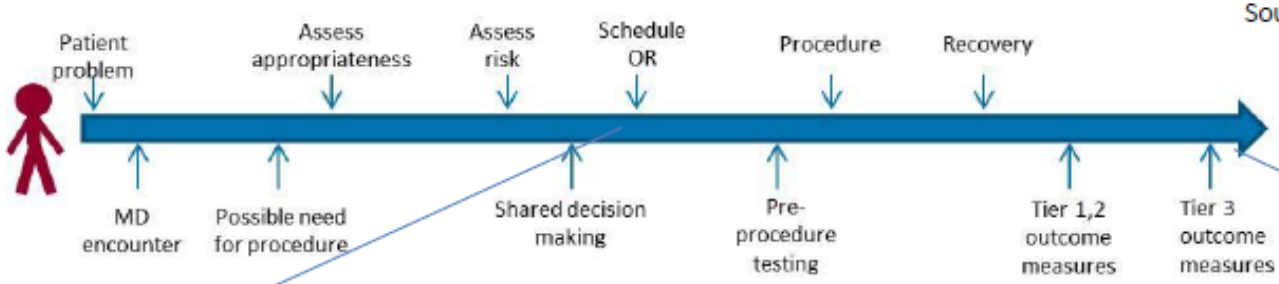
* TDABC – Time Driven Activity Based Costing

# Determine Care Process Across Care Cycle



## Level 1: Overall care cycle

Source: Tim Ferris at Partners Healthcare

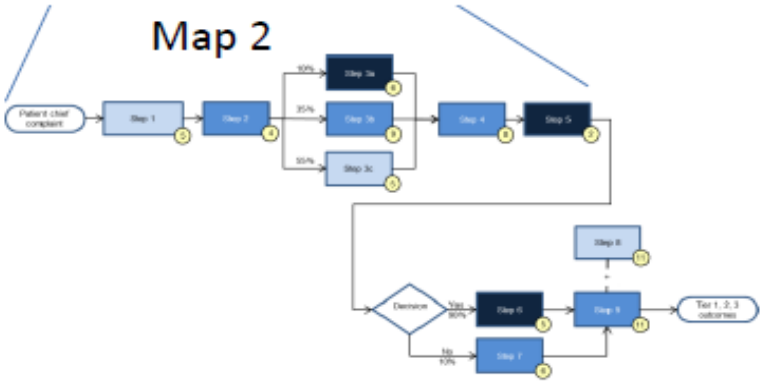



## Level 2: Study care cycle

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Map 1: Surgical consultation | Map 2 : Pre-operative testing | Map 3: Day of surgery pre-operative prep | Map 4: Operation | Map 5: Post-anesthesia care unit | Map 6: Discharge | Map 7: Rehabilitation | Map 8: Follow-up visit |

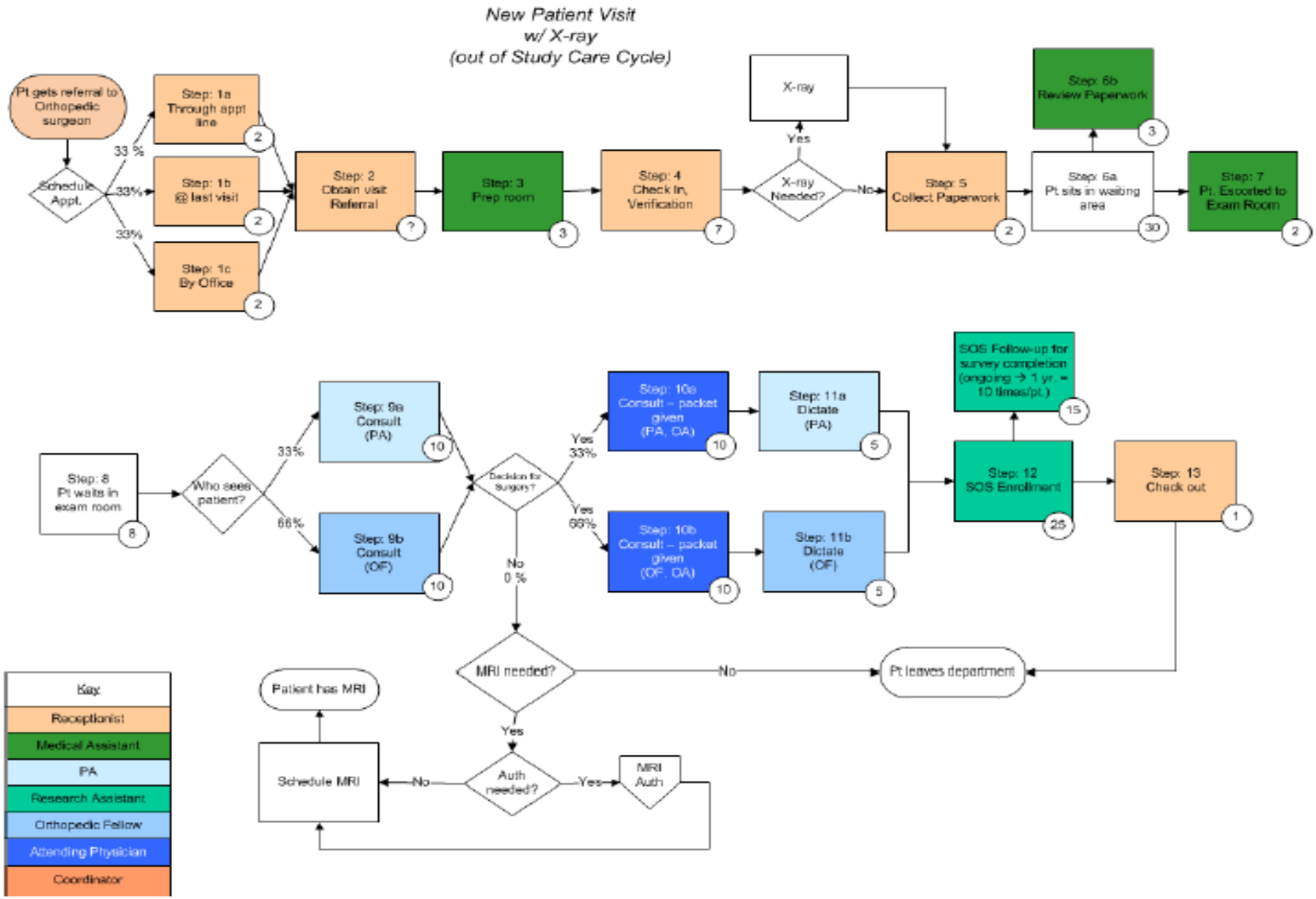
## Level 3: Process maps

Map 2



# Process Map for Initial Consult Visit - Example





# Calculate Capacity Cost Rate - Example



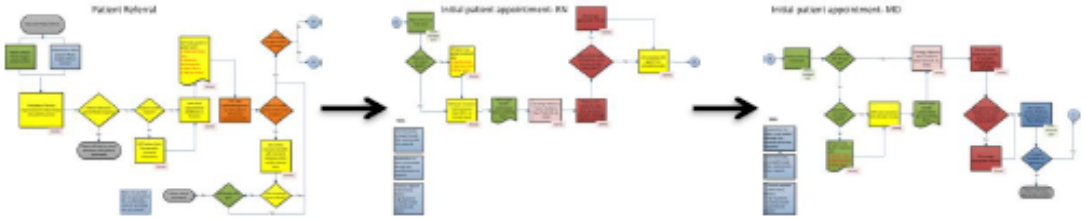
*Data are illustrative*

| | Attending Physician | Orthopedic Fellow | Physician Assistant | Medical Assistant | Research Assistant | Receptionist | Coordinator |
|---|---|---|---|---|---|---|---|
| Total Clinical Costs ($) | $ 546,400 | $ 120,000 | $ 100,000 | $ 64,000 | $ 51,000 | $ 61,000 | $ 57,000 |
| Personnel Capacity (minutes) | 91,086 | 89,086 | 89,086 | 89,086 | 89,086 | 89,086 | 89,086 |
| Personnel Capacity Cost Rate ($/min.) | $ 6.00 | $ 1.35 | $ 1.12 | $ 0.72 | $ 0.57 | $ 0.68 | $ 0.64 |

# Total Personnel Costs Across Cycle of Care



## Initial consultation



| | Minutes | Cost/ minute | *Total |
|---|---|---|---|
| MD | $X_1$ | $Y_1$ | 136.13 |
| RN | $X_2$ | $Y_2$ | 68.04 |
| CA | $X_3$ | $Y_3$ | 6.17 |
| ASR | $X_4$ | $Y_4$ | 15.74 |
| | | | $266.08 |

## Surgical procedure

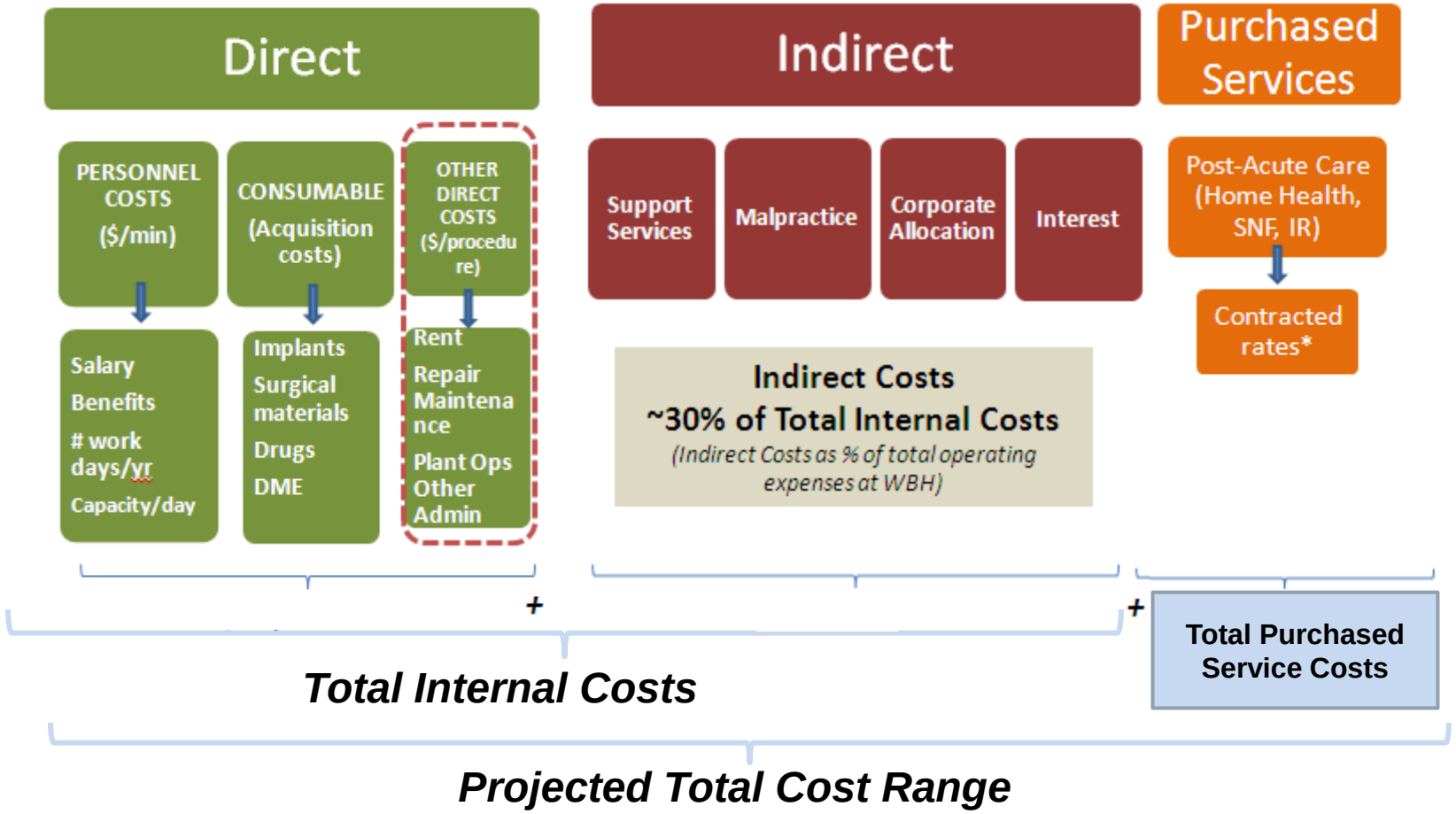
| | | | |
|---|---|---|---|
| MD | $X_1$ | $Y_1$ | 584.99 |
| Anes. | $X_2$ | $Y_2$ | 603.89 |
| RN | $X_3$ | $Y_3$ | 136.29 |
| Tech | $X_4$ | $Y_4$ | 97.82 |
| OR | $X_5$ | $Y_5$ | 329.16 |
| | | | $1752.15 |

## Follow-up or post-operative visit

| | | | |
|---|---|---|---|
| MD | $X_1$ | $Y_1$ | 55.19 |
| RN | $X_2$ | $Y_2$ | 13.61 |
| CA | $X_3$ | $Y_3$ | 3.09 |
| ASR | $X_4$ | $Y_4$ | 1.77 |
| | | | $73.66 |

# Total Joint Replacement Episode of Care (EOC) Costs






*Costs for Other Admin, Other Contracted, Plant Operations, Repairs & Rent are allocated by Surgical Services and Pro-Rated for Total Joint Replacement as a Direct Cost/procedure*

# TDABC Costing
# v/s
# Charge-Based Costing

# Case Study Example – Boston Children's Hospital



- Microcosm of current health care climate
  - In 2006 expanded insurance coverage to all state residents
  - In 2008 the state formed the State Commission on Health Care Payment Systems
    - Purpose: to address rising health care costs
    - Recommendation: providers transition to a risk-adjusted global payment model

- Boston Children's Hospital (BCH), MA
  - Free-standing hospital; highly specialized pediatric care
  - Reported higher costs (and prices) than local pediatric wards
  - BCH was being excluded from certain insurance options
  - More accurate cost information would help with payor negotiations

# Case Study Example – Boston Children's Hospital



- Reviewed 3 types of New Patient Office Visits
  - Plagiocephaly
  - Neoplasm skin excision
  - Craniosynostosis
- Charge based costing – Ratio of Costs to Charges (RCC)
  - Assumes costs are proportional to charges
  - RCC rate - 60% of charges
- Implemented TDABC methodology
- TDABC v/s RCC comparison

| Office Visits | Charges | Average Reimbursement | RCC Cost | RCC Profit | TDABC Cost | TDABC Profit |
|---|---|---|---|---|---|---|
| Plagiocephaly | $ 350 | $ 224 | 210.00 | $ 14.00 | $ 108 | $ 116.50 |
| Neoplasm skin excision | $ 350 | $ 224 | 210.00 | $ 14.00 | $ 155 | $ 68.64 |
| Craniosynostosis | $ 350 | $ 224 | 210.00 | $ 14.00 | $ 204 | $ 20.43 |

# Improving Value

# Opportunity #1: Post-Acute Care



Current State

- Discharge planning occurs during inpatient stay
- Patients go home with home health care or sub-acute rehabilitation
- Post Acute Care
  - Has the largest variation in cost and quality
  - Is least understood
  - Has the most impact on post-surgery recovery of joint function
  - Influences readmission rate

# Improvement Efforts:
# Pre-Operative Discharge Planning Before Surgery



Pre-operative discharge planning and communication during pre-op consult visit

- Sets expectations at the beginning of the episode
- Minimizes patient's anxiety during inpatient stay
- Allows patient and family to plan and prepare ahead
- Increases % discharged home

Discharge to Home

- Cost-effective, higher patient satisfaction and better outcomes
- Minimizes exposure to hospital infections at rehabilitation centers
- Determined by social support of patients

# Pre-operative Discharge Planning Process



Implemented a pre-operative discharge planning process

- Modified survey to assess social support & home care needs
- Incorporate results of survey into education class teaching
- Hired a dedicated joint coordinator to guide the patient throughout the episode of care
- Reinforced discharge plan by surgeon during pre-op visit

Monitored quality and outcome measures- Monthly

# Projected Cost Savings per Case



**Original Discharge Disposition**

| | |
|---|---|
| Home: | 75% |
| Sub-Acute Rehab: | 24% |
| Inpatient Rehab: | 1% |

**October 2014 Discharge Disposition**

| | |
|---|---|
| Home: | 80% |
| Sub-Acute Rehab: | 20% |
| Inpatient Rehab: | 1% |

| Increase in % Discharged Home to | Projected Cost Savings/ Case |
|---|---|
| 85% | $771 |
| 90% | $1155 |

# Creating a Commercial Bundle Product

# Discussions with Health Alliance Plan (HAP)



- Initiated in April 2014
- Workgroups formed to assess
  - Financial impact
  - Market needs in Michigan and nationally
  - Operational requirements

- Next Steps:
  - Collect and analyze industry specific data
  - Continue to develop the product with the HAP team
  - Present the product pitch to one of HAP's third party administrators (TPA)

# What We've Learned



Time Driven Activity Based Costing

- Is a valuable exercise to understand your true costs
- Requires engagement from the entire care team and support services (finance, supply chain, HR, etc.)
- Takes multiple meetings and revisions to accurately map out the current process

Bundled Payment

- Requires detailed understand of costs and market prices in order to produce a competitive and sustainable product
- Is recognized but not well understood in the Michigan market

# Questions?