



# The OR Story – Perioperative Services Transformation

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# Project Goals

- Achieve top decile operational performance and 90th percentile for customer satisfaction
- Design consistent perioperative patient care processes and technology systems
- Decrease non-productive staff time
- Establish top performance across the perioperative enterprise without increasing staffing

# Project Outcomes

- Greater efficiency of all perioperative processes
  - On-time sequencing of events
  - Reduced cycle times
  - Improved consistency of services
- Greater flexibility in case scheduling
- Greater visibility for preoperative preparation, intraoperative patient progress, physician presence and availability through real-time data and monitoring
- Greater surgeon satisfaction with OR operations and enhanced loyalty
- Enhanced staffing practices, with redesigned roles, responsibilities, and accountabilities
- Improved staff morale and staff participation toward excellence
- Enhanced learning culture throughout organization
- Improved patient care and customer satisfaction
- Increased efficiency and productivity through volume growth, net revenue & market share

# Enterprise Wide Innovation

## Processes

Best In Class  
Knowledge  
Content

Preop Evaluation  
Office Staff Training  
Call Center Function  
Electronic Tracking  
and Documentation

Metrics-Driven Management  
Hospital Staff  
Surgeons/Anesthesiologists  
Performance Standards in  
Evaluations and Contracts

Scheduling  
Office Staff Training  
Block Utilization Transparency

Case Day Tracking  
Predefined Responsibilities and Real Time Monitoring  
Monitoring to Targets  
Predefined Backup Plans  
Patient and MD Status

## *Perioperative Process Continuum*

## Tools & Systems

Web-Based Office  
Surgery Requests

Call Center  
Manager

Preoperative  
Status Tracking  
Tool

Resource  
Management  
Tracking Tool

Pre Operative  
Preparation  
Reports

Web Based  
Learning  
Delivery  
Systems

Web Based  
Block  
Utilization  
Measurements

OR  
Status  
Board

Case  
Time  
Tracker

Dashboard  
Delivery  
Systems

# Pre-Surgical Screening Fulfillment

**RESULTS**

|  | Overall | Ortho | Neuro | General | Peds   | CV  | Ambulatory Surgery |
|--|---------|-------|-------|---------|--------|-----|--------------------|
| <b>% Patients Screened (Same Day Add-Ons Excluded)</b> |         |       |       |         |        |     |                    |
| Before   | 28      | 40    | 39    | 33      | 0      | 48  | 8                  |
| After  | 92      | 94    | 93    | 94      | 75     | 94  | 89                 |
| % Increase   | 229%    | 135%  | 138%  | 185%    | >1000% | 96% | 1013%              |
| <b>% of PSS Evaluation With Phone Call Only</b>        |         |       |       |         |        |     |                    |
| Before   | 22      | 27    |       | 2       |        | 0   | 1                  |
| After  | 92      | 89    |       | 98      |        | 0   | 99                 |
| % Increase   | 318%    | 230%  |       | >1000%  |        | NA  | >1000%             |
| <b>Average Duration (Call)</b>                         |         |       |       |         |        |     |                    |
| Before   | 26      | 27    | 26    | 24      | 18     | NA* | 24                 |
| After  | 15      | 16    | 16    | 14      | 12     | NA  | 14                 |
| % Reduction  | 42%     | 41%   | 38%   | 42%     | 33%    | NA  | 42%                |
| <b>Average Duration (Visit)</b>                        |         |       |       |         |        |     |                    |
| Before   | 40      | 38    | 39    | 36      | 42     | 51  | 35                 |
| After  | 33      | 32    | 34    | 28      | 28     | 47  | N/A                |
| % Reduction  | 18%     | 16%   | 13%   | 22%     | 33%    | 8%  | N/A                |
| <b>Same Day Case Cancellation Rate**</b>               |         |       |       |         |        |     |                    |
| Before   | 6.9     | 6.4   | 4.7   | 5.9     | 4.9    | 9   | 6.9                |
| After  | 3.8     | 2.7   | 2.3   | 2.8     | 0.4    | 4.8 | 2.1                |
| % Reduction  | 45%     | 58%   | 51%   | 53%     | 92%    | 47% | 70%                |

\* All CV patients come on-site for pre-surgical screening

\*\* Measured cancellation rates by surgeon

# Pre-/Post-Operative Cycle Time Changes

**RESULTS**

|  | Overall | Ortho | Neuro | General | Peds | CV  | Ambulatory Surgery |
|--|---------|-------|-------|---------|------|-----|--------------------|
| <b>Overall Length of Stay</b>                      |         |       |       |         |      |     |                    |
| Before   | 145     | 156   | 177   | 140     | 126  | 141 | 86                 |
| After  | 120     | 133   | 131   | 110     | 103  | 115 | 72                 |
| % Reduction  | 17%     | 15%   | 26%   | 21%     | 18%  | 18% | 16%                |
| <b>Arrival to Bed Placement</b>                    |         |       |       |         |      |     |                    |
| Before   | 18      | 19    | 17    | 17      | 17   | 14  | 16                 |
| After  | 7       | 7     | 7     | 7       | 7    | 6   | 2                  |
| % Reduction  | 61%     | 63%   | 59%   | 59%     | 59%  | 57% | 88%                |
| <b>RN Initiation to Completion</b>                 |         |       |       |         |      |     |                    |
| Before   | 41      | 44    | 45    | 37      | 34   | 37  | 39                 |
| After  | 34      | 35    | 36    | 34      | 27   | 32  | 33                 |
| % Reduction  | 17%     | 20%   | 20%   | 8%      | 21%  | 14% | 15%                |
| <b>Bed Placement to Patient Ready</b>              |         |       |       |         |      |     |                    |
| Before   | 128     | 128   | 142   | 121     | 121  | 126 | 78                 |
| After  | 107     | 104   | 112   | 109     | 199  | 111 | 61                 |
| % Reduction  | 16%     | 19%   | 21%   | 10%     | -64% | 12% | 22%                |
| <b>PACU Phase II Recovery</b>                      |         |       |       |         |      |     |                    |
| <b>Overall Length of Stay</b>                      |         |       |       |         |      |     |                    |
| Before   | 124     | 123   | 121   | 129     | 109  | 145 | 101                |
| After  | 92      | 82    | 72    | 91      | 78   | 100 | 84                 |
| % Reduction  | 26%     | 33%   | 40%   | 29%     | 28%  | 31% | 17%                |
| <b>Arrival to Discharge Criteria Met</b>           |         |       |       |         |      |     |                    |
| Before   | 106     | 108   | 106   | 110     | 92   | 117 | 95                 |
| After  | 81      | 76    | 62    | 79      | 70   | 90  | 73                 |
| % Reduction  | 24%     | 30%   | 42%   | 28%     | 24%  | 23% | 23%                |
| <b>Discharge Criteria Met to Patient Departure</b> |         |       |       |         |      |     |                    |
| Before   | 14      | 15    | 15    | 19      | 17   | 28  | 13                 |
| After  | 9       | 7     | 9     | 12      | 9    | 12  | 11                 |
| % Reduction  | 36%     | 53%   | 40%   | 37%     | 47%  | 57% | 15%                |

# On-Time Pre-Operative Arrival Compliance

**RESULTS**

|                                | Overall | Ortho | Neuro | General | Peds | CV  | Ambulatory Surgery |
|--------------------------------|---------|-------|-------|---------|------|-----|--------------------|
| <b>Patient to SAU</b>          |         |       |       |         |      |     |                    |
| <b>Percent On-Time</b>         |         |       |       |         |      |     |                    |
| Before                         | 27      | 40    | 30    | 39      | 37   | 40  | 40                 |
| After                          | 70      | 72    | 80    | 80      | 75   | 72  | 92                 |
| % Improvement                  | 159%    | 80%   | 167%  | 105%    | 103% | 80% | 130%               |
| <b>Amount of Delay If Late</b> |         |       |       |         |      |     |                    |
| Before                         | 27      | 37    | 40    | 30      | 25   | 25  | 22                 |
| After                          | 12      | 15    | 10    | 12      | 10   | 11  | 7                  |
| % Reduction                    | 56%     | 59%   | 75%   | 60%     | 60%  | 56% | 68%                |
| <b>Surgeon</b>                 |         |       |       |         |      |     |                    |
| <b>Percent On-Time</b>         |         |       |       |         |      |     |                    |
| Before                         | 47      | 40    | 22    | 38      | 37   | 38  | 26                 |
| After                          | 70      | 65    | 78    | 60      | 58   | 68  | 40                 |
| % Improvement                  | 49%     | 63%   | 255%  | 58%     | 57%  | 79% | 54%                |
| <b>Amount of Delay If Late</b> |         |       |       |         |      |     |                    |
| Before                         | 30      | 36    | 40    | 30      | 30   | 37  | 28                 |
| After                          | 14      | 15    | 14    | 15      | 9    | 7   | 15                 |
| % Reduction                    | 53%     | 58%   | 65%   | 50%     | 70%  | 81% | 46%                |
| <b>MDA</b>                     |         |       |       |         |      |     |                    |
| <b>Percent On-Time</b>         |         |       |       |         |      |     |                    |
| Before                         | 60      | 50    | 20    | 50      | 35   | 80  | 50                 |
| After                          | 78      | 80    | 70    | 85      | 90   | 90  | 55                 |
| % Improvement                  | 30%     | 60%   | 250%  | 70%     | 157% | 13% | 10%                |
| <b>Amount of Delay If Late</b> |         |       |       |         |      |     |                    |
| Before                         | 20      | 32    | 35    | 24      | 30   | 30  | 20                 |
| After                          | 10      | 10    | 8     | 6       | 15   | 7   | 10                 |
| % Reduction                    | 50%     | 69%   | 77%   | 75%     | 50%  | 77% | 50%                |

# Intraoperative Cycle Time Changes

**RESULTS**

|                                    | Overall | Ortho | Neuro | General | Peds | CV  | Ambulatory Surgery |
|------------------------------------|---------|-------|-------|---------|------|-----|--------------------|
| <b>Overall Intraoperative Time</b> |         |       |       |         |      |     |                    |
| Before                             | 146     | 147   | 177   | 126     | 130  | 297 | 79                 |
| After                              | 118     | 117   | 130   | 106     | 90   | 240 | 59                 |
| % Reduction                        | 19%     | 20%   | 27%   | 16%     | 31%  | 19% | 25%                |
| <b>Arrival to Incision</b>         |         |       |       |         |      |     |                    |
| Before                             | 32      | 39    | 36    | 25      | 24   | 58  | 24                 |
| After                              | 26      | 31    | 26    | 22      | 19   | 48  | 18                 |
| % Reduction                        | 19%     | 21%   | 28%   | 12%     | 21%  | 17% | 25%                |
| <b>Incision to Close</b>           |         |       |       |         |      |     |                    |
| Before                             | 108     | 108   | 130   | 93      | 92   | 235 | 64                 |
| After                              | 85      | 77    | 88    | 70      | 69   | 171 | 40                 |
| % Reduction                        | 21%     | 29%   | 32%   | 25%     | 25%  | 27% | 38%                |
| <b>Close to Exit</b>               |         |       |       |         |      |     |                    |
| Before                             | 17      | 16    | 18    | 16      | 12   | 48  | 12                 |
| After                              | 10      | 8     | 10    | 10      | 10   | 16  | 7                  |
| % Reduction                        | 41%     | 50%   | 44%   | 38%     | 17%  | 67% | 42%                |
| <b>Room Turnover</b>               |         |       |       |         |      |     |                    |
| Before                             | 32      | 37    | 31    | 32      | 31   | 51  | 27                 |
| After                              | 21      | 22    | 20    | 22      | 21   | 26  | 18                 |
| % Reduction                        | 34%     | 41%   | 35%   | 31%     | 32%  | 49% | 33%                |



# On-Time Arrival to OR Suite

**RESULTS**

|                                | Overall | Ortho | Neuro | General | Peds | CV   | Ambulatory Surgery |
|--------------------------------|---------|-------|-------|---------|------|------|--------------------|
| <b>First Case</b>              |         |       |       |         |      |      |                    |
| <b>Room Entrance</b>           |         |       |       |         |      |      |                    |
| <b>Percent On-Time</b>         |         |       |       |         |      |      |                    |
| Before                         | 31      | 36    | 32    | 50      | 58   | 37   | 54                 |
| After                          | 80      | 97    | 87    | 89      | 80   | 75   | 78                 |
| % Improvement                  | 158%    | 169%  | 172%  | 78%     | 38%  | 103% | 44%                |
| <b>Amount of Delay If Late</b> |         |       |       |         |      |      |                    |
| Before                         | 12      | 14    | 20    | 18      | 16   | 14   | 16                 |
| After                          | 5       | 4     | 7     | 4       | 3    | 5    | 7                  |
| % Reduction                    | 58%     | 71%   | 65%   | 78%     | 81%  | 64%  | 56%                |
| <b>Non-First Case</b>          |         |       |       |         |      |      |                    |
| <b>Room Entrance</b>           |         |       |       |         |      |      |                    |
| <b>Percent On-Time</b>         |         |       |       |         |      |      |                    |
| Before                         | 36      | 34    | 21    | 20      | 38   | 22   | 34                 |
| After                          | 68      | 68    | 67    | 71      | 70   | 62   | 70                 |
| % Improvement                  | 89%     | 100%  | 219%  | 255%    | 84%  | 182% | 106%               |
| <b>Amount of Delay If Late</b> |         |       |       |         |      |      |                    |
| Before                         | 35      | 40    | 46    | 34      | 31   | 36   | 32                 |
| After                          | 14      | 12    | 12    | 15      | 8    | 10   | 15                 |
| % Reduction                    | 60%     | 70%   | 74%   | 56%     | 74%  | 72%  | 53%                |

# PACU Cycle Time changes

**RESULTS**

|  | Overall | Ortho | Neuro | General | Peds | CV / Vascular | Ambulatory Surgery |
|--|---------|-------|-------|---------|------|---------------|--------------------|
| <b>Overall Length of Stay</b>                      |         |       |       |         |      |               |                    |
| Before   | 97      | 88    | 86    | 83      | 84   | 107           | 88                 |
| After  | 68      | 74    | 70    | 64      | 55   | 79            |                    |
| % Reduction  | 30%     | 16%   | 19%   | 23%     | 35%  | 26%           |                    |
| <b>Arrival to Discharge Criteria Met</b>           |         |       |       |         |      |               |                    |
| Before   | 82      | 73    | 70    | 71      | 70   | 88            | 73                 |
| After  | 62      | 64    | 61    | 62      | 61   | 69            |                    |
| % Reduction  | 24%     | 12%   | 13%   | 13%     | 13%  | 22%           |                    |
| <b>Discharge Criteria Met to Patient Departure</b> |         |       |       |         |      |               |                    |
| Before   | 28      | 21    | 16    | 18      | 14   | 19            | 9                  |
| After  | 8       | 10    | 9     | 9       | 9    | 11            |                    |
| % Reduction  | 71%     | 52%   | 44%   | 50%     | 36%  | 42%           |                    |

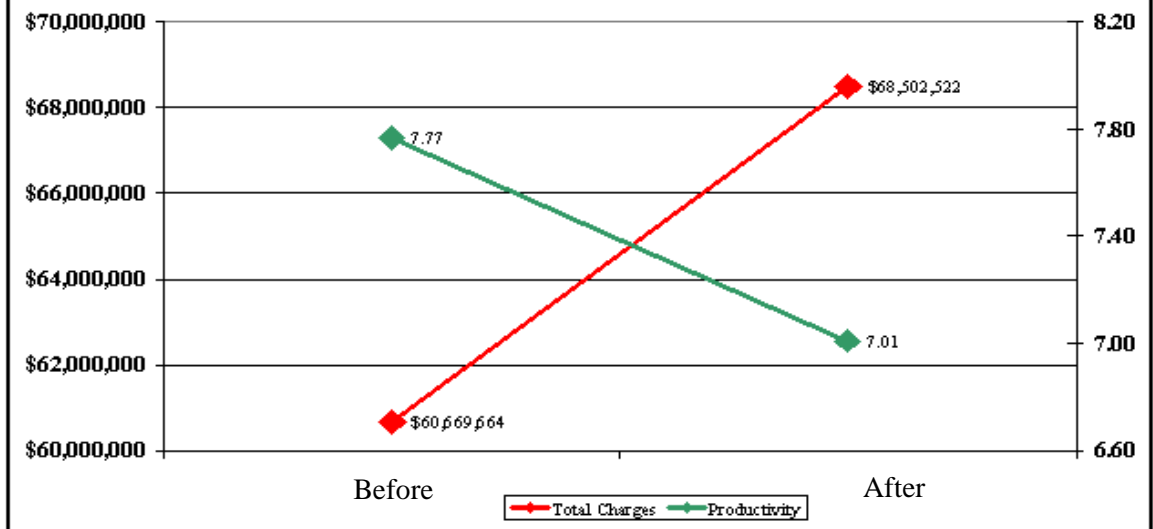
# Costs Reduced, Performance Increased

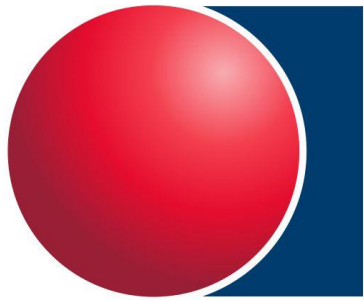
**RESULTS**

## Net Changes

| Net Changes | Total Charges | Productivity | FTE    |
|-------------|---------------|--------------|--------|
| Before      | \$60,669,664  | 7.77         | 150.21 |
| After       | \$68,502,522  | 7.01         | 131.72 |
| Change      | \$7,832,858   | 0.76         | -18.49 |
| % Change    | 12.9%         | -10%         | -12.3% |

### Total Charges vs. Productivity





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